KHỞI NGHIỆP ĐỔI MỚI SÁNG TẠO QUỐC GIA

INTERNATIONAL CONFERENCE

STARTUP AND INNOVATION NATION

HỘI THẢO KHOA HỌC QUỐC TẾ
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HỘI ĐỒNG BIÊN TẬP

STT	Họ tên	Chức vụ	Nhiệm vụ
1.	PGS.TS. Nguyễn Trọng Cơ	Giám đốc Học viện	Trưởng ban
2.	PGS.TS Phạm Văn Liên	Phó Giám đốc Học viện	Phó trưởng ban
3.	PGS.TS. Trương Thị Thủy	Phó Giám đốc Học viện	Phó trưởng ban
4.	PGS.TS. Ngô Thanh Hoàng	Phó ban QLKH	Ủy viên thư ký
5.	PGS.TS. Lê Xuân Trường	Trưởng khoa Quản lý Khoa học	Ủy viên
6.	PGS.TS. Phạm Thị Thanh Hòa	Giảng viên	Ủy viên
7.	TS. Diêm Thị Thanh Hải	Giảng viên	Ủy viên
8.	TS. Lưu Hữu Đức	Bí thư đoàn thanh niên, Phó ban CTCT&SV	Ủy viên
9.	TS. Nguyễn Đình Hoàn	Phó Tr Bộ môn Kinh tế học	Ủy viên
10.	Ths. Lưu Mai Hương	Quản lý khoa học	Ủy viên

HỌC VIỆN TÀI CHÍNH

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NHÀ XUẤT BẢN TÀI CHÍNH

MỤC LỤC

DIỄN VĂN KHAI MẠC HỘI THẢO KHOA HỌC QUỐC TẾ ICYREB 2018
CỦA GIÁM ĐỐC HỌC VIỆN TÀI CHÍNH

Kính thưa các vị khách quý,

Kính thưa các nhà khoa học tham dự hội thảo,

Thay mặt Học viện Tài chính tôi nhiệt liệt chào mừng các quý vị đại biểu đã về tham dự Hội thảo khoa học quốc tế lần thứ tư của 10 trường đại học khối kinh tế và quản trị kinh doanh của Việt Nam với chủ đề "Khởi nghiệp đổi mới sáng tạo quốc gia" năm 2018 được tổ chức tại Học viện Tài chính, Việt Nam.

Kính chúc quý vị đại biểu sức khỏe, hạnh phúc và thành công! Chúc hội thảo thành công tốt đẹp!

Kính thưa quý vị,

Học viện Tài chính đã có bề dầy 55 năm lịch sử. Trong hơn nửa thế kỷ đó, Học viện Tài chính đã đào tạo cho đất nước gần: 100.000 cử nhân kinh tế, 8.000 thạc sĩ và trên 300 tiến sĩ kinh tế. Những cựu sinh viên, cựu học viên của Học viện Tài chính đều rất thành đạt trên cương vị công tác của mình. Học viện Tài chính rất tự hào là nơi tu nghiệp của rất nhiều lãnh đạo Đảng và Nhà nước, nhà khoa học, nhà kinh tế, giữ các chức danh, chức vụ, vị trí như: Uỷ viên Bộ Chính trị, Uỷ viên Trung ương Đảng, Chủ tịch Quốc hội, Phó Thủ tướng chính phủ, Bộ trưởng, Bí thư tỉnh và thành phố, Chủ tịch tỉnh, … Giáo sư, Phó giáo sư, Tổng Giám đốc, Chủ tịch tập đoàn, … v.v. Với giá trị cốt lõi là "Chất lượng – Uy tín – Hiệu quả - Chuyên nghiệp và Hiện đại", Học viện Tài chính không chỉ thường xuyên đổi mới nội dung, chương trình và phương pháp đào tạo mà còn rất quan tâm đến hoạt động nghiên cứu khoa học của giảng viên và sinh viên. Hội thảo khoa học quốc tế lần này tổ chức tại Học viện Tài chính là một trong những hoạt động quan trọng để thúc đẩy sự phát triển của hoạt động nghiên cứu khoa học của Học viện và các trường đại học, học viện tham gia hội thảo.

Thay mặt Học viện Tài chính, tôi xin trân trọng cảm ơn các đồng chí lãnh đạo các trường đại học, học viện đồng chủ trì hội thảo đã chỉ đạo sát sao và tạo điều kiện thuận lợi để giảng viên trẻ của các trường tham gia hội thảo. Tôi xin trân trọng cảm ơn các nhà khoa học đã tham gia phản biện và biên tập với tinh thần trách nhiệm cao để chọn đăng các bài viết trong kỷ yếu hội thảo. Xin cảm ơn các thành viên Ban tổ chức hội thảo đã chuẩn bị hết sức chu đáo cho hội thảo. Xin cảm ơn các nhà khoa học trẻ đã quan tâm gửi kết quả nghiên cứu của mình công bố tại hội thảo. Đây chính là những cơ sở quan trọng tạo nên thành công của hội thảo lần này.

Kính thưa quý vị,

Hội thảo này là cơ hội để các nhà khoa học tham gia hội thảo trao đổi những ý tưởng, các vấn đề lý thuyết và thực nghiệm về chủ đề có ý nghĩa rất quan trọng trong phát triển kinh tế - xã hội của mọi quốc gia trong đó có Việt Nam, đó là "khởi nghiệp sáng tạo". Tôi tin tưởng rằng với sự góp mặt của 2 diễn giả chính của hội thảo là Giáo sư Nguyễn Đức Khương, Phó viện trưởng Viện kinh doanh IPAG (Cộng hòa Pháp); Giáo sư Mark Holmes, Chủ tịch Hiệp hội các nhà kinh tế học New Zealand và 270 nhà khoa học trẻ đến từ 30 trường đại học, học viện, viện nghiên cứu ở Việt Nam, Pháp, Anh, Nhật Bản, Hàn Quốc, New Zealand, Ireland, Malaysia, Thái Lan, Indonesisa và Philipinnes, chắc chắn hội thảo sẽ chia sẻ được nhiều ý tưởng

sáng tạo, thảo luận những phát hiện mới về các chủ đề cụ thể xung quanh chủ đề chính của hội thảo là "khởi nghiệp sáng tạo". Với niềm tin đó, tôi xin trân trọng tuyên bố khai mạc Hội thảo khoa học quốc tế của 10 trường đại học, học viện về kinh tế và quản trị kinh doanh của Việt Nam 2018 với chủ đề "Khởi nghiệp đổi mới sáng tạo quốc gia".

Chúc quý vị có một ngày làm việc hiệu quả và gặt hái nhiều thành công!

Kính chúc quý vị sức khỏe và hạnh phúc!

Xin trân trọng cảm ơn!

"STARTUP AND INNOVATION NATION" KEYNOTE SPEECH 2018
VICE PRESIDENT ACADEMY OF FINANCE

PHAM VAN LIEN

Professor Mark Holmes, President of New Zealand of Association of Economists New Zealand,

Professor Nguyen Duc Khuong, Deputy Director for Research of the IPAG Business School France,

Professor Nguyen Trong Co, President of Academy of Finance, Vietnam,

Ladies and Gentlemen,

I would like to warmly welcome and send my sincere congratulations to the 270 authors of 128 papers, which were selected from over 175 papers from 11 countries to present in the conference proceedings. Thank you for your attendance here at the International Conference "Startup and Innovation Nation" 2018 hosted by the Academy of Finance, Vietnam. I wish you a good time to share your ideas about the topics of the conference and enjoy your stay in Hanoi, whose history as a capital city is over a thousand year old.

In this opening session, we will have the great honor to meet two well-known scholars in economics, Professor Nguyen Duc Khuong and Professor Mark Holmes. I am strongly confident that their speeches will provide us interesting insights for our discussions and contribute much to the success of this conference. Now, please give them a warm welcome!

After this opening, we will participate in eight sessions, four in Vietnamese, and four in English. These sessions will focus on the following:

First, in the "Startups and innovation environment" session, we will discuss all elements for startups and innovation including legislation, the government's investment in infrastructure, the government's assistance for startups, the tax incentives for angel investors, mentors, advisors and venture investment funds and so on.

Second, in the "Finance" session, we will discuss issues concerning financial aspects of startups and innovation including finding funds for startup projects, finance management in startup companies, ways to cope with difficulties in raising capital during the first stage of a startup and other issues related to corporate finance.

Third, in the "Accounting and auditing" session, we will talk about the appropriate accounting models for startups, accounting and auditing regime for innovation and all issues related to accounting and auditing in context of the fourth industrial revolution.

Fourth, in the "Economics and business administration" session, we will discuss the role of startups in the economy, business strategy, modern models strategies, blue ocean strategy, marketing, human resource management and other issues related to business administration.

In one of the Vietnamese sessions, there will be a special talk show on "the financial mechanism for startups" where all the presentations will be focused on how to inspire startups.

On the closing note

I am excited to tell you that during the closing session this afternoon, we will honor the Best Paper Award winners.

It is my hope that this conference will provide you not only a fantastic networking opportunity with colleagues from both academia and universities but also an environment to engage in stimulating discussions about research topics and practices.

Thank you!

ĐỀ DẪN HỘI THẢO KHOA HỌC QUỐC TẾ
"KHỞI NGHIỆP ĐỔI MỚI SÁNG TẠO QUỐC GIA" - ICYREB 2018

Hiện nay Việt Nam đã ký kết, thực thi và đang đàm phán tổng cộng hơn 16 Hiệp định thương mại tự do song phương và đa phương. Cùng với quá trình hội nhập quốc tế, cuộc cách mạng công nghiệp 4.0 đang có những tác động đến nền kinh tế Việt Nam, đặt ra yêu cầu cần nghiên cứu để đưa ra các giải pháp nhằm đổi mới các chính sách về tài chính, kinh tế, quản trị kinh doanh, kinh tế chia sẻ, quản lý kinh tế…tại Việt Nam thích ứng với bối cảnh mới. Trong đó, hoạt động khởi nghiệp đổi mới sáng tạo là một giải pháp chủ đạo nhằm ứng phó hiệu quả để tranh thủ các cơ hội, đồng thời vượt qua các thách thức mà các Hiệp định thương mại tự do và cuộc cách mạng công nghiệp 4.0 mang đến cho Việt Nam.

Các bài học kinh nghiệm thành công của nhiều quốc gia như Mỹ, Israel, Đức, Nhật Bản, Hàn Quốc… đã tác động mạnh mẽ đến tinh thần khởi nghiệp của Việt Nam. Các quốc gia này đã biết vận dụng những yếu tố nội lực và ngoại lực phù hợp để làm nên thế mạnh của cộng đồng doanh nghiệp. Điển hình là "Quốc gia khởi nghiệp" Israel, với quyết tâm trở về miền đất hứa và với sự hỗ trợ của cộng đồng Do Thái ở Mỹ; hay "Quốc gia khởi nghiệp" như Đức và Nhật Bản sau chiến tranh thế giới lần thứ II, bắt đầu từ sự tập trung sâu sắc vào tri thức khoa học kỹ thuật cùng với trình độ văn hóa cao. Có thể thấy, những nhu cầu nội tại từ thực tiễn, những xu hướng hợp tác, hội nhập quốc tế sâu rộng và những kinh nghiệm thành công của các quốc gia khởi nghiệp...đã và đang tác động đến tinh thần khởi nghiệp của Việt Nam hiện nay.

Nghị quyết số 35 của Chính phủ, mục tiêu đặt ra đến năm 2020 là: sẽ xây dựng doanh nghiệp Việt Nam có năng lực cạnh tranh, phát triển bền vững; cả nước có ít nhất 1 triệu doanh nghiệp hoạt động, trong đó có các doanh nghiệp quy mô lớn, nguồn lực mạnh; khu vực tư nhân Việt Nam đóng góp khoảng 48 - 49% tổng sản phẩm quốc nội (GDP), khoảng 49% tổng vốn đầu tư toàn xã hội; năng suất các nhân tố tổng hợp (TFP) đóng góp khoảng 30 - 35% GDP; năng suất lao động xã hội tăng khoảng 5%/năm. Hàng năm, khoảng 30 - 35% doanh nghiệp Việt Nam có hoạt động đổi mới sáng tạo.

Hoạt động khởi nghiệp đổi mới sáng tạo ở Việt Nam tuy còn non trẻ nhưng có tiềm năng phát triển rất lớn. Với những lợi thế sẵn có và sự phối hợp đồng bộ giữa các Bộ, ngành, địa phương, hệ thống các giải pháp được đưa ra sẽ là cơ sở cho việc xây dựng và ban hành các cơ chế, chính sách cần thiết, đặc thù để hỗ trợ, thu hút nhiều nhà đầu tư, khai phá được tiềm năng phát triển cho hoạt động khởi nghiệp đổi mới sáng tạo ở Việt Nam trong gian tới. Nhằm xây dựng và trang bị hệ thống cơ sở lý luận cùng các giải pháp cũng như kiến nghị đầy đủ hơn cho vấn đề khởi nghiệp đổi mới sáng tạo, Học viện Tài chính phối hợp với các trường Đại học khối Kinh tế và Quản trị Kinh doanh tổ chức Hội thảo Quốc tế thường niên dành cho các nhà khoa học trẻ (ICYREB 2018) với chủ đề **"Khởi nghiệp đổi mới sáng tạo quốc gia"**.

Hội thảo đã thu hút được sự tham gia đông đảo của các nhà khoa học của các trường Đại học, Học viện, Viên nghiên cứu như: Đại học Kinh tế quốc dân, Đại học Ngoại thương, Đại học Thương Mại, Đại học Kinh tế TP. Hồ Chí Minh, Đại học Kinh tế - Luật, Đại học Kinh tế - Đại học Đà Nẵng, Đại học Kinh tế - Đại học Huế, Học viện Tài chính, Học viện Ngân hàng, Đại học Kinh tế - Đại học Quốc gia Hà Nội,

Đại học Bách Khoa, Đại học Sài Gòn, Đại học Thủ dầu Một, …và có sự có mặt của các nhà nghiên cứu, chuyên gia hàng đầu về kinh tế đến từ trong các cơ quan trong nước như: Bộ Khoa học và Công nghệ, Bộ Tài chính…và các quốc gia như: Ý, Pháp, New Zealand, Indonexia, Philippine, Thái Lan, Malaysia, Hàn Quốc, Nhật,…Đặc biệt hội thảo có sự góp mặt của hai nhà khoa học hàng đầu của thế giới về lĩnh vực kinh tế: GS.Nguyễn Đức Khương - Phó Giám đốc Nghiên cứu tại Trường Kinh doanh IPAG (Pháp) và GS. Mark Holmes - Chủ tịch của Hiệp hội các nhà kinh tế học New Zealand. Hội thảo ICYREB 2018 đã nhận được 175 bài viết và lựa chọn, biên tập được 128 bài viết để đăng trong Kỷ yếu Hội thảo quốc tế lần này. Các bài viết này đã được các nhà khoa học và Ban chuyên môn của Hội thảo phản biện và chọn lựa.

Các bài báo khoa học tham gia Hội thảo ICYREB 2018 rất phong phú, đa dạng về chủ đề nghiên cứu, được thực hiện cả bằng tiếng Việt và tiếng Anh. Những bài nghiên cứu được chọn tham dự Hội thảo đều có giá trị tham khảo không chỉ đứng từ góc độ hàn lâm mà cả từ góc độ thực tiễn, đồng thời thể hiện tính đa dạng trong cách tiếp cận các nội dung về khởi nghiệp đổi mới sáng tạo quốc gia cũng như sự quan tâm của giảng viên trẻ. Nội dung các bài báo công bố kết quả nghiên cứu được chia thành 4 nhóm chính cụ thể như sau:

Nhóm 1, Môi trường khởi nghiệp và các vấn đề có liên quan: Về chủ đề này, các bài nghiên cứu đề cập đến các vấn đề về môi trường khởi nghiệp như pháp lý, đầu tư cơ sở hạ tầng và hỗ trợ của Nhà nước cho khởi nghiệp, các cơ chế chính sách khuyến khích khởi nghiệp sáng tạo, ưu đãi thuế cho các nhà đầu tư thiên thần, quỹ đầu tư mạo hiểm.

Nhóm 2, Tài chính: Với chủ đề này, các tác giả quan tâm đến các vấn đề tài chính của khởi nghiệp và sáng tạo bao gồm tìm nguồn tài chính cho các dự án khởi nghiệp, quản trị tài chính cho các doanh nghiệp khởi nghiệp, cách thức có thể vượt qua được những khó khăn gặp phải trong giai đoạn đầu của khởi nghiệp và các vấn đề khác có liên quan đến tài chính.

Nhóm 3, Kế toán - Kiểm toán: Ở chủ đề này, các bài báo làm rõ những mô hình kế toán phù hợp đối với doanh nghiệp khởi nghiệp, cơ chế kế toán kiểm toán cho đổi mới sáng tạo và các vấn đề liên quan đến kế toán kiểm toán trong bối cảnh cách mạng công nghiệp 4.0.

Nhóm 4, Kinh tế - quản trị kinh doanh: Về chủ đề này, các tác giả tập trung trao đổi về vai trò của khởi nghiệp trong nền kinh tế, chiến lược kinh doanh, chiến lược đại dương xanh, marketing, quản trị nguồn nhân lực và các vấn đề khác có liên quan.

Đặc biệt, Hội thảo ICYREB 2018 có một phiên trao đổi bình luận về cơ chế chính sách hỗ trợ hệ sinh thái khởi nghiệp.

Học viện Tài chính và Ban Tổ chức Hội thảo trân trọng cảm ơn quý vị đại biểu, các vị khách quý và các nhà khoa học trẻ đến từ các trường đại học, viện nghiên cứu trong nước và quốc tế đã nhiệt tình tham gia, đóng góp trí tuệ vào sự thành công của Hội thảo; trân trọng cảm ơn sự quan tâm và phối hợp chặt chẽ trong công tác tổ chức của Ban Lãnh đạo các trường đại học, các Viện nghiên cứu và các cơ quan Bộ/ngành có liên quan đã đóng góp vào sự thành công của Hội thảo. Hy vọng ICYREB 2018 sẽ tạo ra cơ hội tốt để các nhà khoa học trẻ giao lưu, trao đổi về học thuật cũng như kinh nghiệm nghiên cứu, thông qua đó hoàn thiện các bài nghiên cứu để được công bố trên các tạp chí khoa học có uy tín trong và ngoài nước đồng thời phát triển năng lực nghiên khoa học.

Học viện Tài chính và Ban Tổ chức Hội thảo kính chúc quý vị đại biểu, quý nhà khoa học sức khỏe, hạnh phúc và thành công!

Kính chúc Hội thảo thành công tốt đẹp!

Xin trân trọng cảm ơn!
BAN TỔ CHỨC HỘI THẢO

ENHANCING ENTREPRENEURIAL MOTIVATION IN VIETNAM- RESEARCHING ON ENTREPRENEUR'S REASON TO STARTUP

Le Thu Hanh* - **Nguyen Thi Huong Giang****

ABSTRACT: *In recent years, startup have relatedly actived in Vietnam. The year of 2016 was called 'the year of the startup' in Vietnam. Never before has the Vietnamese government have so much support for startup. Entrepreneurship has been emphasised as a key driver for Vietnam's economy. There have been 39,580 new startups with a total registered investment of 369.6 trillion dong (US$17 billion) in the first four months of 2017, 14 per cent increase in the number of startups and a 54 per cent increase in registered investment compared to the first quarter of 2016. According to Vietnam's Planning and Investment Ministry, more than 90 per cent of 110,000 businesses registered in 2016 paid taxes, showing signs of stable operation.*

Motivation is an important factor that distinguishes those entrepreneurs who make progress towards an operating venture from those who do not. The subject of motivation has received a lot of attention from scholars in the field of applied social sciences, and theories of motivation have an increasingly important role to play in entrepreneurship research. This research applied and ajdusted Monalova model on researching valences- (reason to startup) that make Vietnamese entrepreneur's motivation to startup. This research found that, among 3 main categories reason for entrepreneur to start a bussiness: financial success and autonomy; self-realization; status, the financial success and autonomy is the most important; next is the self-realization and status.

This research also suggests solutions to motivate entrepreneur to startup. These suggestions include: Encourage establishing venture funds to invest on startup idea, encourage seed investor (angle investor) to invest on startup project, continue increasing the transparency and convenient of business enviroment, organizing more national startup competition and increasing training about entrepreneurship.

***Keywords:** entrepreneur, motivation, startup*

1. INTRODUCTION

Nowadays, entrepreneurship plays vital role in economy, it allows people to bring creativity into the marketplace, it creates companies with the potential to hire millions of people and it brings new products and services to market. In addition, people pay attention to the social impact of their products and investments, aims to improve society and the environment. Specifically, there are some important roles of entrepreneurship to economy and society: (i) Entrepreneurship hepls to create new businesses. Path breaking offerings by entrepreneurs, in the form of new goods & services, result in new employment, which can produce a cascading effect or virtuous circle in the economy. The stimulation of related businesses or sectors that support the new venture add to further economic development. (ii)Entrepreneurship helps to increase individual and national income. Entrepreneurial ventures literally generate new wealth. Existing businesses may remain confined to

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the scope of existing markets and may hit the glass ceiling in terms of income. New and improved offerings, products or technologies from entrepreneurs enable new markets to be developed and new wealth created. Additionally, the cascading effect of increased employment and higher earnings contribute to better national income in form of higher tax revenue and higher government spending. This revenue can be used by the government to invest in other, struggling sectors and human capital. (iii) Entrepreneurship also helps to create changes in society. Through their unique offerings of new goods and services, entrepreneurs break away from tradition and indirectly support freedom by reducing dependence on obsolete systems and technologies. Overall, this results in an improved quality of life, greater morale and economic freedom. For example, the water supply in a water-scarce region will, at times, force people to stop working to collect water. This will impact their business, productivity and income. Imagine an innovative, automatic, low-cost, flow-based pump that can fill in people's home water containers automatically. Such an installation will ensure people are able to focus on their core jobs without worrying about a basic necessity like carrying water. More time to devote to work means economic growth. Moreover, the globalization of tech means entrepreneurs in lesser-developed countries have access to the same tools as their counterparts in richer countries. They also have the advantage of a lower cost of living, so a young individual entrepreneur from an underdeveloped country can take on the might of the multi-million dollars existing product from a developed country.

In Vietnam, small and medium enterprise (SME) is the most popular enterprise with an important role in creating job; increasing labor income; mobilizing social resources to develop the economy, reducing poorness, improving labour standard living... In specific; SMEs create 0.5 million jobs every year; using 51% total labor and make 40% GDP. Total tax paid increases 18.4 times after 10 years. This payment helps government using for develop economy and many social programs. SMEs created 40% opportunities for citizen invest their money effectively through mobilizing free and dispersal capital to develop producing and investing. The ministry of investment and development's report shows that in 2015 (to 15/12/2015) there are 93.868 new enterprises; increasing 25.4% compared with 2014.

According to the Vice Prime minister- Mr. Nguyen Duc Dam- Government is really care about creating an effective and convenient environment for young entrepreneurship's development through establishing encourage regulations, policy and increasing startup spirit. However, Mr. Nguyen Hong Truong- Vice chairman of IDG Ventures Vietnam (IDGVV) said that "the startup activities in Vietnam developed slowlier in the last two years compare with some other countries in ASEAN like Malaysia and Singapore; their startup activities increased strongly".

Motivation is an important factor that distinguishes those nascent entrepreneurs who make progress towards an operating venture from those who do not. The subject of motivation has received a lot of attention from scholars in the field of applied social sciences, and theories of motivation have an increasingly important role to play in entrepreneurship research. This research applied and ajdusted Monalova model on researching valences- (reason to startup) that make Vietnamese entrepreneur's motivation to startup, base on that, suggesting solution to enhance entrepreneur's motivation on srart-up.

2. THEORICAL BACKGROUND

"The entrepreneur", was described around 1800 by the French economist J. B. Say, "shifts economic resources out of an area of lower and into an area of higher productivity and greater yield."

It is widely accepted that people starts and operates their own business for a wide range of reasons other than maximizing economic returns (e.g., Wiklund et al., 2003). Motivation can be defined as

the driving force behind all the actions of an individual. The influence of an individual's needs and desires both have a strong impact on the direction of their behavior (the dynamics of our behavior, which involves our needs, desires, and ambitions in life). There are numbers of research on what factors motivate individuals toward establishment of a new firm. Douglas and Shepherd (2000) state that a person will choose to be an entrepreneur other than an employee depending on making a comparison of which career path offers maximal utility, the choice to pursue entrepreneurship is based on a person's utility function (individual's perception towards anticipated income), the estimated amount of work effort to receive this income, the risk involved, as well as other factors such as the person's desired attitudes for independence and perceptions of the anticipated work environment. Krueger et al. (2000) indicate that that an individual's expected values will influence the perceived desirability of the intention to pursue entrepreneurship (apply the theory of planned behavior). Solesvik et al. (2014) find out the explore the linkage between perceived local cultural environment, entrepreneurship-specific education (ESE) investment and the intensity of entrepreneurial intention with regard to becoming an entrepreneur. Renko et al. (2010) based on Vroom's expectancy theory predict that startup-specific instrumentality, valence and expectancy are key components of entrepreneurial motivation and closely related to those intentions, efforts, and behaviors that will eventually lead to operating a firm, and suggest that expectancy theory holds promise for research on nascent entrepreneurs' motivation. Krueger et al. (2000) on "Competing models of entrepreneurial intentions" indicate that that an individual's expected values will influence the perceived desirability of the intention to pursue entrepreneurship. Monalova et al. (2008) used four five-item Likert-type scaled questions about work hard, experience, skill and ability, confident to measured the expectancy variable; and develop "valence" variable to 4 main groups: *Self-realization*; *Status, Financial success, Autonomy*. The research findings indicate that there are significant differences in motivations for starting a new business, with men being motivated by financial gains, self-realization and autonomy where for women status is a significant motivating factor.

Edelman, Linda F et al (2014) proved that using VIE model is helpful in research about motivation starting a business, lead to intention growth to achieve desired outcome (self- realization, financial success, recognition, role, innovation, independence)

From the overview of research above, it was found that, there are different factors motivate nascent entrepreneurs to startup, resulted from either external factor like what outcome they expect from the action or internal factor such as their own abilities and personal traits. This research applied and ajdusted Monalova model on researching valences- (reason to startup) that make Vietnamese entrepreneur motivate to startup, base on that, suggesting solution to enhance entrepreneur's motivation on srart-up.

3. RESEACH METHODOLOGY

3.1. Instruments

Our research applied and adjusted Monalova (2008) model to classify reason to startup to 4 main groups: *Self-realization*; *Status, Financial success, Autonomy*.

Self-realization. Self-realization is the pursuit of goals that are of interest to the entrepreneur. This research measured self-realization using seven questions: "To what extent is the following reason important to you in establishing this new business: to be innovative and in the forefront of technology; to achieve something and get recognition; to develop an idea for a product; to fulfill a personal vision; to lead and motivate others; to have the power to greatly influence an organization, and to challenge myself".

Status. Status is an individual's position relative to others in a given social situation. This research measured self-realization using seven questions. Status was measured using four questions: "To what extent is the following reason important to you in establishing this new business: to achieve a higher position for myself in society; to continue a family tradition; to be respected by my friends; and, to follow the example of a person I admire".

Financial success. This research measured self-realization using four questions: "To what extent is the following reason important to you in establishing this new business: to give myself, my spouse and children financial security; to build a business my children can inherit; to earn a larger personal income; and, to have a chance to build great wealth or a very high income".

Autonomy. Autonomy is an individual's desire for freedom, control and flexibility in the use of one's time (Schein, 1978) Following Manolavo et al. (2008), this research measured self-realization using three questions: "To what extent is the following reason important to you in establishing this new business: to have greater flexibility for my personal and family life; to have freedom to adapt my own approach to work, and to grow and learn as a person".

3.2. Sampling method and sampling size

150 questionaires were sent out and 109 valid respondents were received.

The respondents are people who have been doing business from entrepreneurship or have had experience im entrepreneurship, regardingless of their business sector. Those who have never started up will be excluded from the survey.

The questionnaires were sent to the email of group of researcher's friends. This research used the snowball technique that asks the survey participants to recommend their friends or relatives who can be happy to complete the questionnaire. By using this technique, the researchers can establish contacts with a larger group of people from a small one.

3.3. Population description

Table 1. Population description

		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Gender	Male	58	53.2	53.2	53.2
	Female	51	46.8	46.8	100.0
Industry	Manufacturing	7	6.4	6.4	6.4
	Restaurant	14	12.8	12.8	19.3
	Commercial	50	45.9	45.9	65.1
	Technology	6	5.5	5.5	70.6
	Education	10	9.2	9.2	79.8
	Beauty	5	4.6	4.6	84.4
	Construction	4	3.7	3.7	88.1
	Consultant	4	3.7	3.7	91.7
	Real-estate	2	1.8	1.8	93.6
	Other	7	6.4	6.4	100.0
Startup capital	<30	43	39.4	39.4	39.4
	30-60	13	11.9	11.9	51.4
	60-100	14	12.8	12.8	64.2
	100-150	9	8.3	8.3	72.5
	150-300	7	6.4	6.4	78.9
	>300	23	21.1	21.1	100.0

	<30	13	11.9	11.9	11.9
	30-60	3	2.8	2.8	14.7
Current	60-100	11	10.1	10.1	24.8
capital	100-150	17	15.6	15.6	40.4
	150-300	11	10.1	10.1	50.5
	>300	54	49.5	49.5	100.0

Source: Authors' research results

The population is quite equivalent in terms of gender. The respondents are working in various sectors of business, including manufacturing (6.4%), restaurant (12.8%), commercial (45.9%), technology (5.5%), education (9.2%), beauty (4.6%), construction (3.7%), consultant (3.7%), real-estate (1.8%) and the others (6.4%). According to the capital for startup, more than a third of respondents have a limited capital (<30 million VND), while nearly half of them have the present capital exceed the amount of 300 million VND.

4. FINDING

4.1. Reliability test and Exploratory Factor Analysis

The reliability of the scale was evaluated using the Cronbach Alpha coefficient. According to Hoang Trong and Nguyen Mong Ngoc (2008), Cronbach Alpha scales from 0.7 to 0.8 are usable. Measures with a reliability from 0.8 to 1 are good measure. In this study, scales with a Cronbach Alpha coefficient of 0.6 or higher were retained for further analysis.

However, the Cronbach Alpha coefficient just indicates whether there are interrelationships among scale, without specifying whether to retain or remove the scale, so the authors use the item-total correlation index. The higher the index is, the higher the correlation between this variable and the other variables in the group. According to Nunnally and Burnstein (1994), variables with a item-total correlation of <0.3 are considered rubbish variables and excluded from the scale. Thus, the variables retained in this study were variables with a item-total correlation of > 0.3 and a scale of Cronbach Alpha coefficients of > 0.6. The results show that most scales are reliable (cronbach alpha> 0.6), except for 1 items in intention variable ("Owning my own business is important than spending time with my family")

After that, exploratory factor analysis was run on pilot sample with the rest of items to identify the underlying relationships between measured variables and to group interrelationship variables. This table below illustrates the reliability of items and factor loadings, after deleting problematic cross-loadings:

Table 2. The reliability of items and factor loadings

	Items		Factor loadings	Cronbach alpha
Reason – financial success and autonomy	Reason to start a business: To have greater flexibility for my personal and family life	V16-FLEX	.823	
	Reason to start a business: To earn a larger personal income	V14-INCOME	.808	
	Reason to start a business: To grow and learn as a person	V18-DEV	.727	
	Reason to start a business: To give myself, my spouse and children financial security	V12-FINSAFE	.718	
	Reason to start a business: To have a chance to build great wealth or a very high income	V15-WEALTH	.717	
	Reason to start a business: To fulfill a personal vision	V4-VISION	.661	.798

Reason - self realization	Reason to start a business: To be innovative and in the forefront of technology	V1-TECH	.851	
	Reason to start a business: To lead and motivate others	V5-LEAD	.778	
	Reason to start a business: To develop an idea for a product	V3-IDEA	.771	.775
Reason - status	Reason to start a business: To be respected by my friends	V10-RES	.838	
	Reason to start a business: To achieve a higher position for myself in society	V8-POSI	.814	
	Reason to start a business: To continue a family tradition	V9-TRA	.680	717

Source: Authors' research results

During exploring factor analysys, V12- Finsafe, V13- heritage, V6- power, V2- recorgnition, V7-Challenge, V11-model, are excluded from the research as having cross loading <0.3. This is logical and can be explained. V13- heritage: Vietnam start "DOI MOI" in 1990 and have a new socialist oriented market economy. Thus not many famillies have their own business before 1990, the X generation with stable, peaceful generation values prefer to work in the state organization. V6- Power; V2- Recognition: Assessing Vietnamese culture through 5 dimensions culture of Hofstede), Vienam has a medium score in power distance incomparsion with high score of China and low score of America, power to affect one organization may not the main reason to start up. V11-model: The 5th level in the 5 level of leader (John maxwell, 2006) is Pinnacle- respect: people folow because of who you are and what you present. To achieve this level required leader grow people and organization many year, few Vietnamese leader achieve this level; removing this variables did not affect so much on the research significants.

Inconclusion, the begining research model which inluded 4 main group: *Self-realization*; *Status, Financial success, Autonomy* was adjusted to 3 main groups: *Self-realization*; *Status, Financial success and autonomy*

4.2. Description analysis

Table 3. Description analysis

Group item	Item	Mean	Std. Deviation	Group mean
Reason-Financial success and autonomy	V14-INCOME	4.35	.599	
	V12-FINSAFE	4.32	.665	
	V4-VISION	4.29	.628	
	V18-DEV	4.25	.709	
	V16-FLEX	4.22	.658	
	V15-WEALTH	4.08	.668	**4.25**
Reason - self realization	V3-IDEA	3.89	.832	
	V5-LEAD	3.49	.939	
	V1-TECH	3.30	.908	**3.56**
Reason - status	V8-POSI	3.72	.901	
	V10-RES	3.51	.959	
	V9-TRA	2.92	1.123	**3.38**

Source: Authors' research results

Figure 1. Description analysis

Cource: Authors' research results

This research finds out that "Financial sucess and autonomy" is the most important factor for the purpose of starting a business with the mean of 4.25 which belong to group "agree to total agree". In the "financial success and autonomy group", earning larger income is the most important with the mean of 4.53, after that, "to have a finance safe for their children and having more wealthy" is the next reason. The autonomy is an important reason too. Startup makes entrepreneur have greater flexibility for their personal and family, fullfill a personal vision; grow and learn. As a results, providing finance investment, more training program for young entrepreneur can motivate them more in raising a business.

The "self realization" have the second highest mean - 3.56 which belongs to group "neutral to agree". Being innovative and in the forefront of technology, leading and motivate others, developing an idea for a product are also important reason to starup. By providing an environment for being creative, raising idea, developing techonoloy, entrepreneur can be motivated a lot.

"Status" group includes: "being respected by their friends", "achieving a higher position in society" and "continuing a family tradition" are aslo need to be concern to motivate entrepreneur. "Continuing a family tradition" having lowest score. "Continuing a family tradition" having lowest score. It can be explained because Vietnam start "DOI MOI" in 1990 and have a new socialist oriented market economy. Thus not many famillies have their own business before 1990, the X generation with stable, peaceful generation values prefer to work in the state organization. Thus, enhancing social perception about the role of entrepreneur can motivate them more.

5. RECOMMENDATIONS

5.1. Encourage etablishing venture funds to invest on startup idea

Having good idea is not enough, this research found that not many entrepreneurs can receive the investment from venture funds, and finance safe is a factor had high agreement about reason to startup. Additionally, the number of venture funds in Vietnam is limited. Therefore, encouraging establishing venture funds to invest on startup idea is neccessary.

Firstly, creating a favorable investment environment that supports the development of venture capital investment by:

- Improving the legal system to create a legal framework for all economic relations operate follow market trend. Such a legal system should aim to: Ensure the implementation of the system to protect the assets and interests of investors; Ensure transparency, consistency to minimize the Establishment of Vietnam Venture Capital Association. The Association is the place to connect and focus on valuable information related to venture capital investment. In addition, the association opens up more opportunities for venture capitalists to engage in business ventures in the same venture to share risk. This is also a popular trend in the world today.

- The government continues to implement policies that promote the sustainable development of the stock market, creating liquidity for venture capitalists when the deal is over.

- The Government implements financial transparency policies to minimize risks for investors such as improving the accounting system in line with international standards, encouraging non-cash payment, mestablishing an effective information network with close linkages between public institutions, associations, financial institutions. Being in line with the international legal system will provide opportunities for domestic investors to integrate quickly into the global business environment, and foreign investors can more confidentlywhen invest in Vietnam.

Secondly, to build the legal foundation for venture capital investment:

The Government should have specific regulations guiding venture capital investment activities such as the scope of venture investment, the encorage fields of investment, the structure assets of venture funds and establishment and operation regulations. In the experience of countries such as India and China, venture capital investment is governed by two separate laws for domestic and foreign venture fund. This is also reasonable in the transition period of developing economies for the purpose of controlling and attracting domestic and foreign capital.

Thirdly, establishing state-owned venture fund: These funds are usually established in the early stages of the venture capital market, which can operate in a variety of forms such as centrally managed funds, local funds, universities ... The purpose of the funds is to support incubation and technology innovation projects in many sectors, sectors and in many different localities, thus creating opportunities for innovation and innovation. innovation in society.

5.2. Encourage seed investor (angel investor) to invest on startup project

Seed capital is the initial capital used when starting a business, often coming from the founders' personal assets, friends or family, for covering initial operating expenses and attracting venture capitalists. This type of funding is often obtained in exchange for an equity stake in the enterprise, although with less formal contractual overhead than standard equity financing. Because banks and venture capital investors view seed capital as an "at risk" investment by the promoters of a new venture, capital providers may wait until a business is more established before making larger investments of venture capital funding. (Investopedia)

Investors who provide seed capital are the richer, able to invest in the initial stage of startup businesses in exchange for equity or convertible loans. There are angel investors operating individually, but there are also angel investors who invest in groups, clubs, networks of investors or investors through intermediaries that call for community funds online. In this way, angel investors can share their experiences and research on investment, and at the same time, make suggestions to support the development of startups. Most angel investors are former businessmen, managers, retired people and they often invest not just only for profit but also want to be sharing experience and develop the next entrepreneur generation. Angel investors are important because they invest to the business at the early beginning stage, unlike venture capital funds that invest only when they have proven their ability to find the right market. Investing in the early stages is quite risky when businesses are in the process of exploring the market, making samples and repeating trials, labor and money. The risk is so high that most startups are often unable to break through and this is known as the "Valley of Death". Angel investors not only provide startup businesses with the capital they need, but also provide business experiences, introduce networking of acquaintances, and their resources in the business world to businesses can survive and develop through this most difficult period.

Due to the high risk nature but very necessary for the development of startup enterprises, the government should build legal systems to protect angel investors, reduce worthless risks of them. Regulations should ensure that these individuals' investments in startup businesses do not affect the basic needs of their lives. In addition, countries have more incentive policies for individuals to invest in startups, in order to attract wealthy individuals to participate in and stimulate the investment market for startups. Personal income tax incentives are one of the most common ways to encourage private investment, expressed in the form of: if an individual invests a certain amount of money into a country,

will be entitled to personal income tax deduction equivalent to a certain percentage of this investment. The deductible may be retained if it has not been used up and will continue to be deducted in subsequent years, even if it can be cashed back to the investor. In addition, the Government also facilitate the development of intermediary channels for funding community that help angel investors access business information more quickly, clearly and transparently.

With the initial development of the start up ecosystem in Vietnam, it is necessary to encourage and support the establishment and operation of angel clubs and networks, especially support for communication, raising awareness of entrepreners about the benefits and characteristics of investing for startups; encourage domestic and foreign investors share experiences for local investors, thereby creating the foundation for knowledge and understanding of angel investment. At the same time, it is necessary to have policies on personal income tax deduction for angel investors' investments and to allow small and medium enterprises development funds licensed by the State to invest with Angel investors are qualified. In addition, an effective way to attract angel investment is to call the community through equity.

5.3. Continue increasing the transparency and convenient of business environment

In order to increase the motivation of nascent entrepreneur, the government should have policies to encourage innovation and startup's creative idea, as well as the confidence in startup. To achieve these goals, establishing a convenient and safety financial environment for future startup and organizing a transparent and business-friendly environment are vital steps. More specifically, it is necessary to:

- Promote the role of the private economy, to respect and guarantee the right of freedomly doing business in accordance with the law, and to protect the legally property rights of enterprises.

- Provide initial financing so that entrepreneurs can research whether an idea or product is technically feasible and appropriate for the market.

- Improve business investment environment, create fair and transparent competition between all players in the market place. Besides, paying more attention to the operation of large private enterprises is necessary to avoid failure or bankruptcy.

- Improve mechanisms, support policies and policies to promote the development of innovative eco-systems. In particular, focus on speeding up the revision of the documents that are no longer suitable.

- Create an environment where private businesses can be more closely linked, encouraging them to believe in the success of startups process, implementing financial and tax support, and ensuring social security

- Develope markets of goods/services and other production inputs to ensure efficient and effectiveness of business operation;

- Support startup enterprises to improve technology innovation capacity and improve the information network among enterprises to develop the relationship between SMEs and large enterprises.

5.4. Organizing more national startup competition

There are many excellent ideas but lack practical experience. The general difficulty of young people in starting a business is about capital, business planning, legal procedures .

Therefore, a contest of startup will encourage the youngsters to have more creative ideas in entrepreneurship, and transform them into useful practical solutions. Besides, the purpose of the competition is to build a young entrepreneurial spirit.

In Vietnam we have some national startup competitions, especially in 2016, the year of starup. Many competitions were held in different level: in the university, in the city level, national level, in the television programs. However, almost these competitions were held for students or graduated students. To have more idea for star-up in future, we should organize these competitions at different education level like: in primary school, in secondary school, in high school as in many foreign country. Doing this make people used to have startup idea, being creative still be very young. Moreover, joining these competitions when still be young takes children have more opportunities to raise idea, analyse, develop idea, present and defend business plan, enhance and complete skill, abilities to start up a real idea in the futures. For your children, this competitions may be very simple with only idea to raise a business, explain their reason, why they have this idea. The most important is maintaining this startup spirit as a culture, not only doing this in some recent year. This culture will motivate people to have idea to startup, make people respect the role and the position of entrepreneur. This is so important, because in the past, Vietnam is central planned economic in a long period of time when entrepreneur is prohibit and consider as low social class who earning money by treating and exploit other person.

These competions also provide more understanding about startup, guiding people the way to have a real and good idea, learning from other case studies.

5.5. Increasing training about entrepreneurship

Learning and developing themselves are one of the main reason to startup. Thus training for entrepreneurship can motivate them to start up. Further more, doing training is considerd one way to guide young startup entrepreneur doing business better. Training also help future entrepreneur know how to make a good business plan, defend their idea persuasive enough to received investment from venture and seed fund. We can prodive training in the different ways:

- Free training online in some goverment website (Planning and investment ministry, VCCI…)

 - Free consluting include online and offline for young entrepreneur

- Free seminar to discuss, share and learn from succesul entrepreneur

- Develope game or mobile app about start up.

- Making business and entrepreneur as a content of education program for secondary school anh high school.

- Free documents guiding to start a business.

- Develop online discussion group or communication about entrepreneur

CONCLUSION

Entrepreneur have an important role with the development of the economic. Young entrepreneur with creative idea can bring a new trend for the economic, enhance the competitve advantage for our country. Understanding the reason to startup can help government design policy to create a support startup ecosystem in Vietnam, motivate future entrepreneur to startup. Although having some limitations about the small sample size, this research can be a reference for further research on motivation, entrepreneur and startup.

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THE EFFECT OF INTERNAL AND EXTERNAL BARRIERS ON VIETNAMESE STUDENTS' ENTREPRENEURIAL INTENTION

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ABSTRACT: *This study aims to investigate the influences of internal barriers (personal traits & cognitive conditions) and external barriers (normative & regulative structures) on entrepreneurial intention among Vietnamese students. By collecting data from 437 students at high schools, universities, colleges in Vietnam, author employs the quantitative method such as certain descriptive statistics, explorative analysis (EFA), KMO and Bartlett test, correlation coefficient analysis, and logistic regression to test hypothesizes of the relationship between entrepreneurial barriers, which related to personal traits, cognitive condition, normative and regulative structures, and entrepreneurial intention. The research results show that all four independent variables (barriers related to personal traits, cognitive condition, normative and regulative structures) have negative impacts on entrepreneurial intention. Particularly, cognitive conditions are seen as the most influential barrier to entrepreneurial intention, followed by personal traits, regulative and normative structures.*

Keywords: *internal and external barriers, entrepreneurial intention, Vietnamese students*

1. INTRODUCTION

The reasons of why students do or do not intent to run their own business have been interested by many researchers in entrepreneurship literature (Iakowleva *et al*., 2014; Moriano *et al.*, 2012; Krueguer *et al*., 2000; Kolvereid, 1996). Entrepreneurs play a crucial role in developing the national economy, well-being of a society (Iakowleva *et al*., 2014), innovation and employment (Kelley *et al.,* 2011). Entrepreneurial barriers have long been researched as significant factors discouraging the establishment of new venture (Lien *et al*., 2002). Carayannis *et al*. (2003), Franke & Lüthje (2003) and Pittaway & Cope (2007) stressed that an individual' intention to start up a business are shaped by his or her perception of barriers involved in entrepreneurship, cultural and traditional values, legislative and regulative environment. Administrative difficulties, poor infrastructure, bank' hesitation to provide financial support for new projects, unsupportive and averse culture to entrepreneurial activities are likely to become obstacles to individual's entrepreneurial desirability (Shinnar et al., 2009). However, the concept of barriers still lacks in almost all studies of entrepreneurial intention to date.

Although the concept of entrepreneurship has become more universal in the world, almost all entrepreneurial intention studies conducted in Western countries, where the entrepreneurial ecosystem and the market economy has been developed. There are lack of studies of entrepreneurship carried out in transitional economies such as Vietnam, especially in findings the effects of entrepreneurial barriers to startup intention among youths. As a result, this research gap should be fulfilled. The primary objective is to investigate the

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effects of internal (personal traits & cognitive conditions) and external (normative & regulative structures) barriers on entrepreneurial intention among Vietnamese students. This study also provides a useful sightseeing of youths' entrepreneurship to policy makers, educational managements and governments in order to foster students' entrepreneurship, develop entrepreneurial ecosystem and enhance business environment. In addition, author also hope that this study will bring an interesting insight to researchers and academic staffs. The questionnaire surveys were distributed to students at high schools, universities, colleges and institutes in Vietnam, yet most of these universities, colleges and institutes located in the North of Vietnam. Even though more than 800 questionnaires have been distributed to Vietnamese students, only 437 questionnaires have been fulfilled and enough standard for employing in this study. In addition, certain descriptive statistics such as frequency, percentage, mean and standard deviation are implemented to analyze the demographic layouts of respondents. After that, explorative factor analysis (EFA), KMO and Bartlett test are utilized to examine the reliability of the scales and the suitability of data for explorative factor analysis. Correlation coefficient analysis also is applied to investigate the relationship between internal barriers (personal traits & cognitive conditions), external barriers (normative & regulative structure) and entrepreneurial intention.

This study is organized in the following manner: Firstly, theoretical background involving in entrepreneurship, entrepreneurial intention, entrepreneurial barriers and hypothesizes will be represented. Secondly, research methodology and conceptual framework will be described. Thirdly, author will present the research results and discussion. Finally, conclusion and recommendation for further research will be performed.

2. LITERATURE REVIEW

2.1. Entrepreneurship and Entrepreneur

There are many definitions for entrepreneurship developed over the few recent decades. Schumpeter (1960) considered that entrepreneurs are people who create new products or services in new or existing market and entrepreneurship becomes one of the most important factors in countries' economic growth (Schumpeter, 1960, p.12; De Bruin *et al.*, 2006, p. 686). "The environment itself creates entrepreneurship" (Bernat *et al*., 2016, p. 271), the reason is that operating organizations have a must for reacting quickly to unanticipated changes, but also "to adapt to unpredicted outcomes of the predicted changes" (Timmons, 1990). Kirzner (1985) defined that entrepreneur is a person who might optimize information in such a way in order to discover the new and improved business opportunities (Korpysa, 2012). Talpas (2014, p.198) consider entrepreneurship as a process that can be recognized throughout business activities by showing effective leadership within uncertain market, risks and competitive conditions, while Zimmer and Scarborough (1996, p.19) claimed that entrepreneurs can also be known as owners who, with skillful manner, are able to associate various factors of production, transforming a smaller economic resources into a bigger platform effectively and rising profits. Also, Entrepreneurship is the process of creating and building new venture and new business organization (Shane, Venkataraman, 2000), that not only provides goods and services, creates job opportunities but also contribute to the development of economy and the national income. Linda *et al*. (2017) argued that "*it is the process of designing, launching and running a new business*", and it also tend to some topics such as policy, government programs, entrepreneurial training, funds, etc. that not only promote the development of starting a new business but it also supports entrepreneurs in their business activities. In addition, OECD (2006) stresses that entrepreneurship is defined as a process, which entrepreneurs establish and develop enterprises to supply new products and services, or create additional value to products and services.

2.2. Entrepreneurial intention

Krueger & Brazeal (1994) has defined entrepreneurial intention as the intent to set up a new business, or the intent to be self-employed (Douglas & Shepherd, 2002) or the intent to own a business (Crant, 1996). There are many reasons such as personal circumstances, social and politic issues and business environment, which might become either big obstacles or motivated factors to transform this intent becoming a reality. Thus, entrepreneurial intention is perceived as an essential and fundamental condition to be a nascent entrepreneur. Whereas entrepreneurship is determined as the emergent process of an organization (Gartner *et al.*, 1992), an individual's intention to pursue an entrepreneurial career is crucial to this process (Lee *et al.*, 2011, p.126). Moreover, entrepreneurial intention is considered the first step in a series of action to found an organization (Bird, 1988), yet Fishbein and Ajzen (1975) argued that intentions toward a behavior can be seen as important indicators of that behavior. In other words, intentions are still seen as the best predictor of individual behavior (Krueger, 2008). According to Ajzen (1991), who introduced Theory of Planned Behavior, intentions are determined by social/subjective norms and perceived behavioral control. Social norms are considered individual's perception of his or her behavior that is consistent with significant thoughts of other, while perceives behavior control is the range of the target behavior within the ability of a decision maker (Esfandiar *et al.*, 2017). Do and Dadvari (2016) also defined entrepreneurial intention as an attentive state of mind that reflects personal experience, awareness and interest toward planned entrepreneurial activity.

2.3. Entrepreneurial barriers

Entrepreneurial intention is also defined as an interested sense of an individual to perform an own business activity with willingness to take risks. Douglas & Shepherd (1997) believe that becoming an entrepreneur is associated with the attitude of an individual to look at the freedom and risks. A person who have high intention to run a business would have a more positive attitude to face the obstacles and barriers. Gorji &Rahimian (2011) divided entrepreneurial barriers into three categories. Firstly, personal barriers include individual characteristics (lack of business idea, lack of time, lack of courage, fear of failure) and educational barriers (lack of business knowledge and skills, lack of qualifications). Secondly, organizational barriers include lack of capital, lack of physical resources, marketing problems. Thirdly, environmental barriers include social-cultural barriers, rules and regulations. Finally, financial constraints are the key barriers to entrepreneurship. Another entrepreneurial barrier is the negative attitude towards entrepreneurship (Smith &Beasley, 2011). Financial situation almost certainly is the vital problem to entrepreneurship (Finnerty & Krzystofik, 1985). Financial barriers such as lack of funding, or financial difficulty are also interested by many researchers (Birdthistle, 2008; Shinnar *et al.*, 2012, Smith & Beasley, 2011). Besides, lack of social capitals such support by family (Martin *et al.*, 2004) and friends (Baughn & Neupert, 2003) might become obstacles to entrepreneurship.

2.3.1. Personal traits

Personal traits commonly described by many researchers is seen as the need for achievement, self-courage, self-confidence, locus of control, ambiguity tolerance and self-efficacy (Shane, 2003; Gurol & Atsan, 2006). In contrast, Cunnigham & Lischeron (1991) stated that personal traits are shaped by personal values (honesty, duty, responsible and ethical behavior), the need for achievements and risk-taking. In addition, Individual characteristics such as motivation (Iakovleva *et al.,* 2014), courage (Birdthistle, 2008), self-efficacy (Zhao *et al.*, 2005), fear of risks (Giacomin *et al.,* 2011), and financial situation (Finnerty & Krzystofik, 1985) have negative or positive impacts on entrepreneurial intention. Thus, lack of confidence, lack of courage and fear of failure, and lack of self-efficacy might act as personal constraints to startup intention of an individual in the context of transitional economy in Vietnam.

H1: Students' entrepreneurial intention is negatively affected by barriers regarding of personal traits

2.3.2. Cognitive conditions

Cognitive conditions are often defined as individuals' real skills and knowledge of each individual obtained through training and role modelling (Iakowleva *et al.*, 2014). In addition, education also play an important role in developing the essential knowledge and skills to entrepreneurship. Lack of knowledge and skills is also seen as a serious barrier to entrepreneurial intention (Shinnar *et al.*, 2009). Educational skills and competence also is seen as set of capabilities essential to entrepreneurship (Ioannis & Kitsios, 2016). Robertson *et al.* (2003) argued that lack of such capacities can become a serious obstacle towards the choice of running an own business. While experience acts as a fundamental factor (Riberiro *et al.,* 2014), knowledge and skills are also necessary to entrepreneurial self-efficacy (Saleh, 2014). In this study, the impacts of barriers related to cognitive conditions on entrepreneurial intention among students in the context of transitional economy in Vietnam will be considered.

H2: Students' entrepreneurial intention is negatively affected by barriers regarding of cognitive conditions

2.3.3. Normative structures

Normative structures reflect shared norms, national cultures and values, which can be shaped by the collective programming of the mind in order to distinguish the members of society or ethnic group from another (Hofstede, 1997). The lens of entrepreneurs regarding of perceived opportunity for starting up a business can be affected by national culture. Thus, normative structures can function as either a positive factor or considerable barriers to entrepreneurship (Morrison, 2000). In a certain culture, the image of entrepreneurship can be negatively affected by lack of entrepreneurial role models, the absence of an entrepreneur in the family members or social structures, for example (Hawkins, 1993; Pruett *et al.*, 2009). In addition, some other entrepreneurial barriers are driven from normative structures such as lack of social network or subjective norms (Singh Sandhu *et al.*, 2011), high competition in the market (Franke & Lüthje, 2004), lack of entrepreneurial role models (Ledyaeva et al., 2008), lack of business idea and lack of perceived opportunities (Franke & Lüthje, 2004; Iakovleva *et al.*, 2014), corruption (Ledyaeva *et al.,* 2008; Stamboulis & Barlas, 2014) and bureaucracy (Finnerty & Krzystofik, 1985). In the context of developing countries such as Vietnam, where normative structures are often seen as significant obstacles to entrepreneurship, the following hypothesis are proposed to test the relationship between normative barriers and student' entrepreneurial intention.

H3: Students' entrepreneurial intention is negatively affected by barriers regarding of normative structures

2.3.4. Regulative structures

Regulative structures reflect formal laws, regulations and rules of each country. The complexity of legal system and the confusing law and regulation are also seen as another external barrier to entrepreneurship (Ledyaeva *et al.,* 2008). Besides, time spending for registrations procedures (Iakovleva *et al.* 2014), law and regulation constraints driven from the complexity an inconsistencies of legal system (Baughn & Neupert, 2003), and frequently changing and difficult labor regulation are often considered entrepreneurial barriers (Franke & Lüthje, 2004; Choo & Wong, 2006). Moreover, the high tax and fiscal is also perceived as the considerable barriers to entrepreneurship (Sesen & Pruett, 2015). In the transitional economy context of Vietnam, where the entrepreneurial ecosystem has still not been developed, the influence of regulative barriers on entrepreneurial intention should be tested.

H4: Students' entrepreneurial intention is negatively affected by barriers regarding of regulative structures

3.　METHODOLOGY

This study mainly focuses on investigating the impacts of internal barriers (personal traits, cognitive conditions) and external barriers (normative & regulative structures) on entrepreneurial intention among Vietnamese students. In terms of research techniques, quantitative approach such as *certain descriptive statistics, explorative factor analysis (EFA), KMO and Bartlett test, correlation coefficient analysis,* and *logistic regression* to test the relationship between independent and dependent variables.

Even though over 800 questionnaires were sent into students at high schools, universities, colleges and institutes in Vietnam, only 437 students (*N=437*) have fulfilled completely. The surveys are designed and divided into 2 sections, which based on the objective of the study, theoretical background and hypothesizes. In the first section, demographic questions are designed to obtain respondent's information such as ages, genders, education, field of study, current professional activities, and the level of willingness to take the risks. In the second section, the questions are employed to show the viewpoints of respondents regarding of entrepreneurial barriers including personal traits, cognitive conditions, normative and regulative structures, which based on six-point Liker scale. The final question in terms of entrepreneurial intention is based on nominal scale, which represented for either 0 (no) or 1 (yes).

From literature review part, the hypothesized model is proposed:

Fig. 1. Research framework
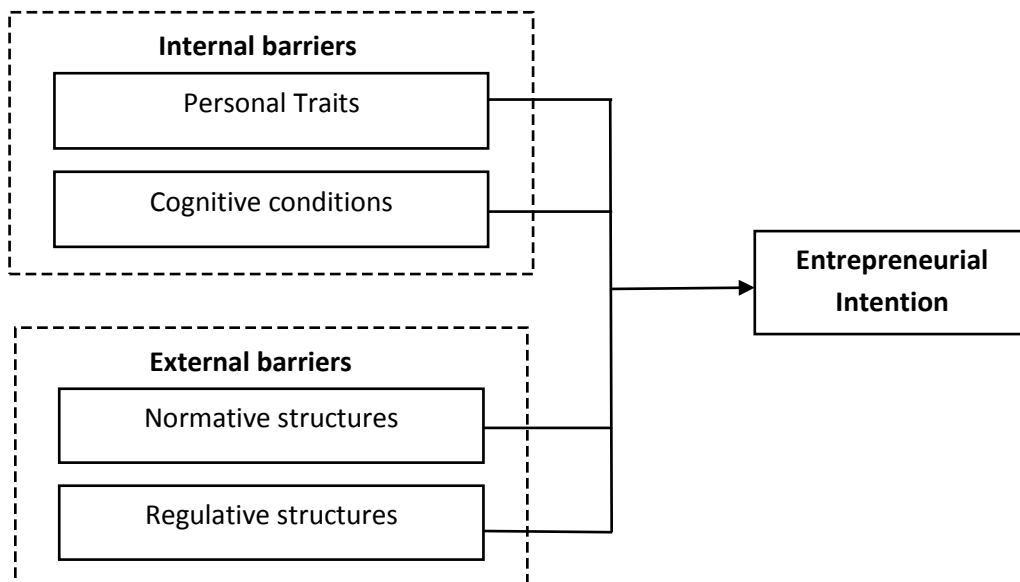
The research framework also could be transformed into the following equation:

$$\text{Ln}(Y) = \text{Ln}(\text{Entrepreneurial Intention}) = \text{Ln}\left[\frac{P(Y=1)}{P(Y=0)}\right]\left[\frac{P(Y=1)}{P(Y=0)}\right] = \beta_0\beta_0 + \sum_{i=1}^{4}\beta_i \text{Xi}\sum_{i=1}^{4}\beta_i \text{Xi} + \varepsilon\,\varepsilon \quad (1)$$

The equation (1) can be also written as following:

$$Y = \text{Entrepreneurial intention} = e^{\beta_0 + \sum_{i=1}^{4}\beta_i \text{Xi} + \varepsilon} e^{\beta_0 + \sum_{i=1}^{4}\beta_i \text{Xi} + \varepsilon}$$

Where Y refers to entrepreneurial intention (EI), X_i refers to independent variables such as personal traits (PT), cognitive conditions (CC), normative structures (NS) and regulative structures (RS)

4. RESULTS

4.1. Demographic profile

Demographic information of respondents and type of current professional (working) activities is introduced in *table 1*.

Table 1. Descriptive Statistics of Sample Demographics

Demographic variables		F	%	Mean	Std. Deviation
1. Age	18 - 19 years old	68	15.5	1.9222	0.47737
	20-24 years old	335	76.7		
	Over 24 years old	34	7.8		
2. Gender	Male	191	43.7	1.5629	0.49659
	Female	246	56.3		
3. Field of study	Economic	160	36.6	1.6339	0.48230
	Non-economic	277	63.4		
4. Education	High School	212	4.8	1.2082	0.54615
	University/College	104	71.4		
	Master	11	13.8		
5. Type of current professional (working) activities	Only studying	110	25.2	3.9611	3.55247
	Studying and working for a company	62	14.2		
	Studying and running own business	9	2.1		
	Studying and looking for a job	256	58.5		

Note: N=437; F: Frequency; %: Percent

Source: Authors' elaborations based on research study

The results of descriptive statistics of sample demographics indicates that the major proportion of respondents aged from 20 to 24 years old (76.7%), compared to only 15.5% and 7.8% respondents who aged from 18 to 19 years old and over 24 years old respectively. Moreover, the percentage of female respondents accounts for 56.3%, which is 12.6% higher than that of male respondents. Noticeably, the figure for students who are non-economic field makes up 63.4%, which is nearly twofold higher than the figure for economic students (only 36.6%). In addition, while almost all respondents are university/college students (71.4%), the minor proportion of respondents is high school students (4.8%) and master students (13.8%).

In terms of type of current professional (working) activities, more than a half (58.5%) students are studying and looking for a job, but 25.2% students are only studying, 14.2% of them are studying and working for a company, and only 2.1 % respondents are studying and running a business.

Author also examines the willingness to take risks among Vietnamese students, which is represented in the *figure 2*. Overall, 44.5% students believe that their willingness to take risks are high and very high (32.6% at high level, and 11.90% at very high level). However, the significant proportion of respondents states that their willingness to take risks are neutral level (26.3%) and nearly 30% respondents represents for low and very low level.
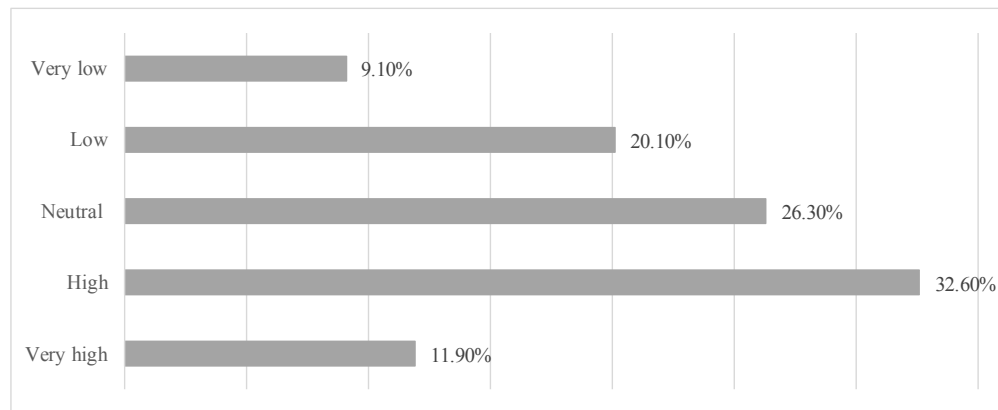
Fig 2. *Respondents' willingness to take the risks*

Note: N= 437, 1= very low, 2= low, 3= neutral, 4= high and 5= very high

Source: Authors' elaborations based on research study

Table 2 presents some descriptive statistics for variables related to entrepreneurial barriers. There are means and standard deviations of each component of four independent variables.

Table 2. Descriptive statistics of variables

Variables		Components	Mean	Std. Deviation
Internal barriers	Personal Traits	Lack of courage	3.1670	1.72329
		Lack of confidence	2.6590	1.51461
		Fear of failure, risks, and debt	3.0482	1.51467
		Lack of self-efficacy	3.2151	1.42534
	Cognitive condition	Lack of entrepreneurial knowledge and skills	3.2752	1.45505
		Lack of experiences and competencies	2.4279	1.65968
External barriers	Normative structures	Corruption	3.7936	1.30533
		Bureaucracy	2.9153	1.46978
		Lack of role models & family background	2.0183	1.71197
		Lack of social support (subjective norms)	3.1465	1.52097
	Regulative structures	The complexity of registration procedure	2.7117	1.50357
		The complexity of regulations	2.7826	1.46546
		Frequently changing and tough labor regulations	3.1465	1.32602
		High taxes & fiscal	3.0732	1.38774

Note: N=437, 0=irrelevant, 1=very insignificant, 2=insignificant, 3=moderately significant, 4=very significant, 5=most important

Source: Authors' elaborations based on research study

The radar chart *(figure 3)* represents the examination of respondents regarding to entrepreneurial barriers. 86.3% students believe that lack of social support is the main barriers to run a business, while lack of courage (70.1%), lack of entrepreneurial knowledge and skills (72.4%), high taxes &fiscal (71.3%), corruption (79.8%), lack of self-efficacy (71.6%), fear of failure, risks, and debt (67.2%), bureaucracy (65.7%) also considered the big obstacles to start up a business.

Fig 3. *Evaluation of respondents regarding to entrepreneurial barriers*
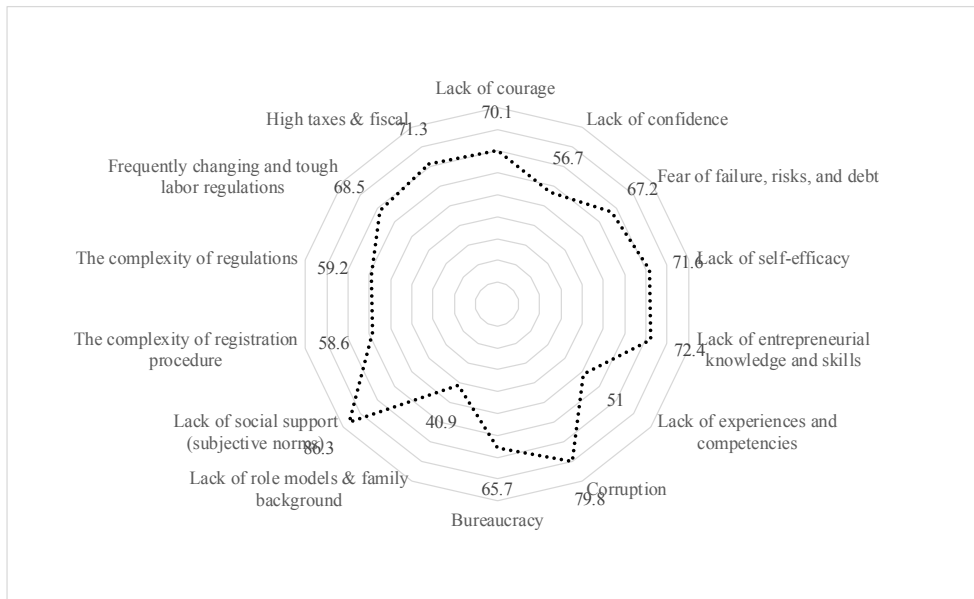
Source: Authors' elaborations based on research study

4.2. Factor analysis and reliability

The statistics software SPSS 20.0 is implemented to carry out explorative factor analysis (EFA) by employing three indicators such as KMO measure (Kaiser-Meyer-Olkin), Barltellt's test of sphericity and Eigenvalue for four independent variables such as internal barriers (Personal Traits-PT & Cognitive Conditions-CC) and external barriers (Normative Structures-NS & Regulative Structures-RS) composing of 14 attributes. Moreover, some tools of descriptive statistics were also implemented to show the demographic information of the samples. In addition, multiple regressions were conduct to identify the effects of independent variables (PT, CC, NS and CN) on dependent variable (EI).

As mentioned, entrepreneurial intention (EI) is measured as the nominal variable in this study, which only had two value including 0 (no) and 1 (yes). Thus, *table 3* and *table 4* only indicate the Cronbach's Alpha and KMO test for independent variable.

Table 3. *Summary of variables*

	Variables	Number of items	Cronbach's Alpha
1.	Personal Traits (PT)	4	0.674
2.	Cognitive Conditions (CC)	2	0.639
3.	Normative Structures (NS)	4	0.641
4.	Regulative Structures (CN)	4	0.762

Source: Authors' elaborations based on research study

According to the results from *table 3*, Cronbach's coefficients alpha of all variables ranges from 0.639 to 0.762. Thus, the all variables' Cronbach's alpha values are acceptable for testing reliability of the scale. Moreover, 58.331% of variance is explained in the factor analysis and it is also good for validation.

Table 4. *KMO and Bartlett's Test*

Type of variables		Independent
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.872
Bartlett's Test of Sphericity	Approx. Chi-Square	2376.888
	df	91
	Sig.	0.000

Source: Authors' elaborations based on research study

The results of KMO and Bartlett test for independent variable is introduced in *table 4*. KMO value made up 0.872 the group of independent variables. It reveals that data is appropriate to investigate and there also shows a perfect correlation between variables, as a result, the factor analysis can be implemented. Technically, with 437 students, the factor loadings of EFA should be higher than 0.30. The value of KMO must range from 0.5 to 1.0 in order to be acceptable. In addition, the Barltlett's test of sphericity significant level must be lower than 0.05 (Pallant J., 2005). the Bartlett's test result of 0.000 in *table 4* indicates that variables are suitable for factor analysis.

4.4. Correlation coefficients between variables

Table 5. Correlation coefficients between variables

		EI	PT	SE	SC	CN
EI	Pearson Correlation	1				
	Sig. (2-tailed)					
PT	Pearson Correlation	-0.123**	1			
	Sig. (2-tailed)	0.010				
CC	Pearson Correlation	-0.143**	0.644**	1		
	Sig. (2-tailed)	0.003	0.000			
NS	Pearson Correlation	-0.090	0.685**	0.568**	1	
	Sig. (2-tailed)	0.059	0.000	0.000		
RS	Pearson Correlation	-0.074	0.648**	0.488**	0.690**	1
	Sig. (2-tailed)	0.124	0.000	0.000	0.000	

Note: N=437; *: $p < 0.05$, **: $p < 0.01$ (2-tailed).

Source: Authors' elaborations based on research study

Table 5 presents the correlation coefficients between dependent variable (EI) and four independent variables (PT, CC, NS, and RS). There are negative relationships between internal barriers such as personal traits and entrepreneurial intention *(r = -0.123, p-value = 0.010),* cognitive conditions and entrepreneurial intention *(r = - 0.143, p-value = 0.003).* In addition, external barrier including normative structures *(r = - 0.090, p-value = 0.059)* and regulative structures *(r = -0.074, p-value= 0.124)* also have negative effect on entrepreneurial intention. Thus, with the higher significance level, internal barriers *(four barriers related to personal traits including lack of courage, lack of confidence, fear of failure, self-efficacy and*

two barrier involved in cognitive conditions including lack of entrepreneurial knowledge and skills, lack of experience) have strongest influences on entrepreneurial intention negatively. In addition, external barriers including normative structures *(corruption, bureaucracy, lack of role model & family background, lack of social support -subjective norms)* and regulative structures *(the complexity of registration procedure, the complexity of regulations, frequently changing and tough labor regulations, high taxes & fiscal)* also have negative effects on entrepreneurial intention, but at the lower significance level.

4.3. Logistic regression

As entrepreneurial intention (EI) is measured as nominal variable, the Binary Logistic Regression is used to predict the effect of internal and external barriers on Vietnamese students' entrepreneurial intention. Particularly, Binary Logistic Regression is implemented to show how barriers in terms of personal traits, cognitive conditions, normative structures and regulative structures influences on entrepreneurial intention among Vietnamese students.

Table 6. Model summary

Step	-2 Log likelihood	Cox & Snell R-Square	Nagelkerke R Square
1	581.626[a]	0.022	0.030

[a]Estimation terminated at iteration number 3 because parameter estimates changed by less than 0.01

Source: Authors' elaborations based on research study

Table 6 illustrates that since – *Log Likelihood = 581.626 (this number is rather big).* Thus, although the significance of model is not high as expected, *table 7* shows that this model can predict 59% dependent variable (EI) following independent variables (PT, CC, NS and RS).

Table 7. Classification Table [a]

Observed		Predicted		
		EI		Percentage Correct
		0	1	
Step 1	EI	0	231	27	89.5
		1	152	27	15.1
Overall Percentage				59.0

a. The cut value is 0.500

Source: Authors' elaborations based on research study

Table 8 reports variables in the equation, which provides a measure of the contribution of each predictor variable (PT, CC. NS and RS) to criterion variable (EI). As a result of research, cognitive conditions (CC) has strongest impact on entrepreneurial intention $(\beta_1\beta_1=-0.176, p=0.081)$, followed by personal traits $(\beta_2\beta_2=-0.136, p=0.358)$, regulative structures $(\beta_3\beta_3=0.041, p=0.754)$, and normative structures $(\beta_4\beta_4=0.012, p=0.936)$.

Table 8. Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp (B)
Step 1[a]	PT	-0.136	0.148	0.845	1	0.358	0.873
	CC	-0.176	0.101	3.044	1	0.081	0.838
	NS	0.012	0.147	0.006	1	0.936	1.012
	RS	0.041	0.133	0.098	1	0.754	1.042
	Constant	0.383	0.326	1.379	1	0.240	1.467

a.   Variable (s) entered on step 1: PT, CC, NS, RS.

Source: Authors' elaborations based on research study

Thus, the equation (1) could be completed as following:

$$Ln\,(Y) = Ln\,(\text{Entrepreneurial intention}) = 0.383 + 0.041*\text{Regulative structures} + 0.012*\text{Normative structures} - 0.176*\text{Cognitive condition} - 0.136*\text{Personal traits} + \varepsilon\,\varepsilon$$

In other words,

$$Y = e^{0.383 + 0.041*Regulative\ structures + 0.012*Normative\ structures - 0.176*Cognitive\ condition - 0.136*Personal\ traits + \varepsilon}$$
$$e^{0.383 + 0.041*Regulative\ structures + 0.012*Normative\ structures - 0.176*Cognitive\ condition - 0.136*Personal\ traits + \varepsilon}$$

5. CONCLUSION

The purpose of this study is to examine the effects of internal barriers (personal traits & cognitive conditions) and external barriers (normative & regulative structures) on entrepreneurial intention. The research results indicate that both internal and external barriers including personal traits, cognitive conditions, normative and regulative structures have negative influences on entrepreneurial intention among Vietnamese students. Specifically, cognitive conditions are perceived as the most influential obstacle to entrepreneurial intention. Thus, education managers should provide training courses of entrepreneurial skills and knowledge for students. Regulative and normative structures are also seen as the significant barriers to students' startup intention. Therefore, the government and lawmakers should have appropriate policies to ameliorate the entrepreneurial ecosystem in Vietnam.

Although, this study brings a new insight to entrepreneurial field and contribute to the fulfillment of research gap in this topics in Vietnam, there are some limitations. Firstly, author only focus on investigate the direct effect of four barriers on entrepreneurial intention, the further researches should extend the research model by supplementing mediating variables, or employing difference variables in order to show the new viewpoint about this topic. Secondly, the quantitative method through the availability sample can been seen as a restriction of this study, the further research should use the different approach to collect data in order to increase the significance level.

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EVALUATION OF ENTREPRENEURIAL AWARENESS AND SKILLS OF COLLEGE OF BUSINESS MANAGEMENT STUDENTS IN TAGUIG CITY UNIVERSITY

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Abstract: *Entrepreneurship contributes significantly in a country's economic wealth. In the Philippines, there is a great opportunity for entrepreneurial ventures. This study examined the entrepreneurial awareness and skills of 330 college students of the College of Business Management at Taguig City University. Specifically examined in this paper were the levels of entrepreneurial awareness, characteristics of an entrepreneur, awareness on the role of entrepreneurship in the economy, problems associated with entrepreneurial awareness and skills, and strategies to enhance entrepreneurial awareness. The primary source of data came from survey questionnaires answered by business students. Frequency and percentage distributions, means, and ranks were used to analyze the data. Findings showed that respondents became aware of entrepreneurship mainly through media. They also believed that an entrepreneur must have a clear, realistic, and achievable goals and procedures. Entrepreneurship serves as an opportunity to show skills in doing business and a means to creating jobs and wealth for both the young and old. However, results also showed that many students lack self-confidence in starting an entrepreneurial venture and are afraid of failures. This paper recommends that students must expose themselves in business activities through participation in seminars, workshops, and trade fairs. They must also recognize changes in the business environment and be able to identify business opportunities. Universities should integrate curricular activities related to entrepreneurship in order to develop the entrepreneurial awareness and skills of the students.*

Keywords: *Entrepreneurship; entrepreneurial awareness; entrepreneurial skills; Taguig City University*

1. INTRODUCTION

The global youth unemployment reported by International Labour Organization (ILO) is at 70.5 million in 2015. In the Philippines, the unemployed youth, aged 15-24, was at 1.169 million based on 2016 January Labor Force Survey, a decrease from 1.274 million in January 2015. The country's gross domestic product (GDP) grew by 6.8% in 2016, up from 5.8% in 2015. Despite this growth, the country has not earned a reputation for entrepreneurship.

In a 2014 report published by De La Salle University which used the Global Entrepreneurship Monitor (GEM) framework, approximately 18.5 million Filipinos were starting a new business. While the Philippines has the highest business startup in the Asia-Pacific and South Asia Region, it has also the highest business discontinuance rate. Said report also stated that high unemployment rate and fewer job opportunities in the Philippines drive the majority of the entrepreneurs to engage in entrepreneurial activities.

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Zorn (2004) defines entrepreneurship as a process which through engagement of human and financial capital is creating new ventures and where the entrepreneur is taking a risk but in return is rewarded financially or through personal satisfaction. It is also a "process of creating something new with value by devoting the necessary time and effort, assuming the accompanying financial, psychic, and social risks, and receiving the resulting rewards" (Hisrich et al., 2005).

The study of entrepreneurship attracts researchers in recent years because of its relevance in addressing economic problems. Because young people may be faced with problems associated with the entry into the labor market, many of them try to create opportunities by themselves by creating entrepreneurial ventures. Ugwu and Ezeani (2012) examined the entrepreneurial awareness and skills of Library and Information Science students in two Nigerian universities. Findings revealed that up to 70% of the students were not aware of entrepreneurial opportunities in their degree program.

Fatoki and Oni (2014) investigated the perception of university students in South Africa on the effectiveness of entrepreneurship education. Results show that entrepreneurship education encourages students to choose entrepreneurship as a career and provides them the necessary entrepreneurial skills. However, it does not seem effective in helping them to meet people with good business ideas or on how to access finance. Blenker, Dreisler and Kjeldsen (2006) point out that universities in Denmark and other European universities play a crucial role in ensuring the continuous development in Europe through entrepreneurship education.

Jadodic (2016) analyzed entrepreneurial intention of college students in Slovenia and found out that young people were aware of the current economic situation which paves for generating their entrepreneurial intentions. The study reveals that most young people use information and communications technology (ICT) such as social media and the internet to get various information on entrepreneurship. Getkate (2014) analysed the entrepreneurial awareness and use of the entrepreneurial support instruments of university students in the Netherlands.

The economic growth of a country depends on the economic activities of its entrepreneurs, entrepreneurs that all begin as young individuals who got what it takes to transform almost anything into an opportunity and had manifested entrepreneurship skills even while they were still students. But to adapt to changing circumstances, honing these skills becomes imperative not only for parents but most especially to the education system (Polat and Aktop, 2010; Erdoğmuş, 2000; Lall, 2011).

In the Asia Pacific and South Asian countries, Filipinos registered the highest rates in four of seven entrepreneurial attitudes and skills. These include the following: (1) they viewed entrepreneurship as a good career choice; (2) media attention given to entrepreneurship; (3) high status attributed to entrepreneurs in the Philippine society; and (4) perceived capabilities. Filipinos registered a lower rate of fear of failure compared to the average rate in the region (Velasco, et al, 2014).

Gozun and Rivera (2016) recommend that Philippine government should increase participation of the youth in programs sponsored by the government to foster entrepreneurial spirit that will lead to successful and sustainable youth entrepreneurs.

The primary objective of this study is to evaluate the entrepreneurial awareness and skills of business administration students in a local university in Taguig City, Philippines. Specifically, it seeks to examine the level of entrepreneurial awareness and skills of business administration students, evaluate the particular characteristics or skills they possess necessary in entrepreneurial activities, examine the role of entrepreneurship in the economy, identify the problems associated with acquisition of entrepreneurial awareness and skills, and evaluate the strategies for enhancing entrepreneurship awareness and skills of business administration students.

2. METHODOLOGY

This study employed descriptive design using a research survey. Survey questionnaires were distributed to students under the College of Business Management in Taguig City University (TCU). The survey questionnaire includes respondents' demographic profile and evaluation of entrepreneurial awareness and skills. Responses were in the form of 4-point Likert scale. The rating of '1' signifies that the students 'strongly disagree' with the statements, '2' for 'disagree', '3' for 'agree' and '4' for 'strongly agree'.

The researchers provided questions on the levels of entrepreneurial awareness and skills, characteristics of an entrepreneur, role of entrepreneurship in the economy, problems associated with entrepreneurial awareness and skills and strategies to enhance entrepreneurial awareness.

Frequency and percentage distributions were employed to describe the socio-demographic characteristics of the respondents. To determine the levels of entrepreneurial awareness and skills, characteristics of an entrepreneur, role of entrepreneurship in the economy, problems associated with entrepreneurial awareness and skills and strategies to enhance entrepreneurial awareness, weighted means, standard deviations, verbal interpretations, and ranks were used.

3. RESULTS AND DISCUSSION

Data shown in Table 1 shows that there are more females than males (69.4% vs. 30.6%). More than half of the respondents belong to age group 18-20 (58.2%) while 21.5% of the respondents are 21 to 23 years old. Majority of the respondents are in third year level (38. 8%), followed by second year level (28.5%) and fourth year level (23.9%). Only 8.8% of the students are in their first year of college. Majority of the respondents have an estimated household income of P5,001 to 10,000 (34.5%). This is followed by P11,000 to 15,000 (26.4%), P16,000 to P20,000 (18.5%), P21,000 and above (12.1%), and P1,000-P5,000 (8.5%).

Table 1. Profile of the respondents

Profile of the Respondents		Frequency	Percentage
Sex	Male	101	30.6
	Female	229	69.4
Age	15-17	23	7.0
	18-20	192	58.2
	21-23	71	21.5
	24-26	29	8.8
	27 and above	15	2.5
Year Level	First Year	29	8.8
	Second Year	94	28.5
	Third Year	128	38.8
	Fourth Year	79	23.9
Average Monthly Household Income	P1,000-P5,000	28	8.5
	P5,001-P10,000	114	34.6
	P10,001-P15,000	87	26.4
	P15,001-P20,000	61	18.5
	Over P20,000	40	12.1

Table 2 presents the level of entrepreneurial awareness among business management students. Awareness of entrepreneurship through the media ranked first among four items with the weighted mean of 3.08. According to Park (2017), social media can facilitate communication and the decision-making process and can bring people information that can help them find new opportunities and business. Today's generation has been exposed to a lot of information to almost anything, including entrepreneurship, which is readily available on the internet. This is in addition to information they get from other sources such as television shows, newspapers, magazines, and other media outlets.

Respondents were also aware that entrepreneurship is among the college courses or bachelor's degrees being offered in the university (WM=3.02) and is also offered as a separate subject (WM=3.02). The College of Business Management of Taguig City University offers four bachelor's degree programs, namely, Bachelor of Science in Marketing Management, Bachelor of Science in Business Management, Bachelor of Science in Office Management, and Bachelor of Science in Entrepreneurial Management. In addition, there is a separate entrepreneurial management subject which is equivalent to three (3) units and is offered in all CBM programs.

Lastly, students became aware of entrepreneurship through pleasure reading and in public lectures (WM=2.95). Pleasure reading refers to "reading that we do of our own free will anticipating the satisfaction that we will get from the act of reading," (Clark and Rumbold, 2006). Students were also able to know entrepreneurship through reading by pleasure and during public lectures. Students are encouraged to attend entrepreneurial seminars and trainings offered by the university and their local governments.

Table 2. Level of entrepreneurial awareness

Entrepreneurial Awareness	WM	SD	Rank	Interpretation
1. I became aware of entrepreneurship through pleasure reading and public lectures.	2.95	0.77	3	Agree
2. I became aware of entrepreneurship through the media.	3.08	0.70	1	Agree
3. Entrepreneurship is among the business courses offered.	3.02	0.70	2.5	Agree
4. Entrepreneurship is among the departmental subjects offered.	3.02	0.67	2.5	Agree
Composite Mean Score	**3.01**			**Agre**

Data in Table 3 show the extent of agreement of the business students on the characteristics of an entrepreneur. Students strongly agreed that an entrepreneur must have clear, realistic and achievable goals and procedures which ranked first with the weighted mean of 3.46. According to Lee (2017), 33 percent increase in the completion of goals among those who wrote their goals down, created an action plan and shared with a friend. These people achieved 76 percent of their goals by having a specific goal-setting strategy. Respondents also strongly agreed that an entrepreneur searches for opportunities and makes good use of them to promote business and income (WM= 3.39), has a reasonable degree of initiative, imagination, skills & creativity (WM= 3.37), not afraid of taking risks but has confidence and determination to succeed (WM= 3.35), has a lot of organizational abilities with efficient management skills (WM= 3.31) and have access to information on technologies to support business (WM= 3.28).

Table 3. Extent of agreement on the characteristics of an entrepreneur

Characteristics of an Entrepreneur	WM	SD	Rank	Interpretation
1. An entrepreneur must have clear, realistic and achievable goals and procedure.	3.46	0.72	1	Strongly Agree
2. An entrepreneur may not bother to acquire more knowledge as long as there is progress in the business.	2.63	1.11	12	Agree
3. An entrepreneur has a reasonable degree of initiative, imagination, skills and creativity.	3.37	0.73	3	Strongly Agree
4. An entrepreneur can create his/her own business without any basic entrepreneurship skills or expertise.	2.65	1.04	11	Agree
5. An entrepreneur can establish business or render to any group of people and succeed.	3.05	0.73	8	Agree
6. An entrepreneur has a lot of organizational abilities with efficient management skills.	3.31	0.69	5	Strongly Agree
7. An entrepreneur is not afraid of taking risks but has confidence and determination to succeed.	3.35	0.74	4	Strongly Agree
8. An entrepreneur searches for opportunities and makes good use of them to promote business and income.	3.39	0.68	2	Strongly Agree
9. An entrepreneur should never be afraid of economic uncertainties and high probability of failure.	3.28	0.69	6	Strongly Agree
10. An entrepreneur is good at bringing together components of a business venture and considerate in working with the public.	3.17	0.70	7	Agree
11. An entrepreneur does not have the potential to be successful unless supported by government or individuals.	2.32	1.05	13	Disagree
12. An entrepreneur is not in control of anybody and so can work at his/her leisure.	2.89	0.86	9	Agree
13. An entrepreneur reaps a huge financial reward & prestige becomes self-reliant and independent as the business progresses.	2.86	0.82	10	Agree
Composite Mean Score	**3.06**			**Agree**

Table 4 shows the extent of awareness of respondents on the role of entrepreneurship in the economy. Students strongly agreed that entrepreneurship serves as an opportunity to show one's talent and do what one loves doing (WM=3.31), as a means of creating jobs and wealth for both young and old (WM=3.29), and as a link in the process of innovation, development and economic growth (WM=3.21).

Several studies in the past established the importance of entrepreneurship in the economy. It is used as a secure platform for employment which leads to economic growth (Blenker, Dreisler and Kjeldsen, 2006).

The Consortium of Entrepreneurship Education (2013) observes that entrepreneurship education prepares individuals, especially the youth, to become entrepreneurs who would contribute to economic development of the country.

Table 4. Extent of awareness on the role of entrepreneurship in the economy

Role of Entrepreneurship in the Economy	WM	SD	Rank	Interpretation
1. Entrepreneurship is a means of creating jobs and wealth for both young and old.	3.29	0.74	2	Strongly Agree
2. It serves as an opportunity for one to show one's talent and do what one loves doing.	3.31	0.70	1	Strongly Agree
3. It serves as an alternative to the meager income in paid employment.	3.13	0.65	5	Agree
4. It serves as a means of bridging the gap between science and the market place.	3.01	0.59	8	Agree
5. It serves as a means of interfacing with such entities as banks, NGOs and government.	3.10	0.61	7	Agree
6. It is a way of maximizing the usage of one's time for oneself.	3.10	0.63	6	Agree
7. It serves as a link in the process of innovation, development and economic growth.	3.21	0.65	3	Strongly Agree
8. It is a way of deriving personal satisfaction in business and overcoming poverty.	3.24	0.71	4	Agree
Composite Mean Score	**3.19**			**Agree**

As shown in Table 5, the top five problems associated with entrepreneurial awareness and skills are lack of self-confidence, thus, afraid of failures (WM=3.14), financial institutions' requirement of collateral before offering a loan to start a new business (WM=3.04), fear of competition and risks associated with conducting business (WM=3.02), difficulty of securing financial support necessary to start a business venture (WM=2.88), and students' preference of paid employment over entrepreneurial ventures (WM=2.87).

Kvedaraite (2013) stated that there are factors on reducing entrepreneurship skills and obstacles for starting a business. Unstable government policy in the area of finance and regulation as well as the lack of information on starting, setting up and developing a business remain major obstacles for establishing and developing a business and without eliminating them any other encouragement of entrepreneurship remains secondary. Besides, governmental institutions, non-governmental organizations and particularly educational institutions should pay more attention to the higher education institutions distribution of information on setting up a business among academic youth which can be provided through seminars, conferences, by organizing meetings, discussions with business people and sharing practical business experience and inspiring stories of successful businesses.

Table 5. Extent of agreement on the problems associated with entrepreneurial awareness and skills

Problems Associated with Entrepreneurial Awareness and Skills	WM	SD	Rank	Interpretation
1. There are inadequate qualified teachers with suitable professional experience.	2.83	0.84	6	Agree
2. ICT facilities and training are inadequate.	2.81	0.80	7	Agree
3. Students are more interested in paid employment and so do not want to develop entrepreneurial spirit and culture.	2.87	0.80	5	Agree
4. It is difficult to secure the financial support necessary to start a business venture.	2.88	0.79	4	Agree
5. Financial institutions normally require collateral before offering loan to start a new business.	3.04	0.67	2	Agree
6. The zeal to get rich quickly does not allow graduates to pass through the requirements of entrepreneurship.	2.73	0.87	8	Agree
7. Inadequate university programs do not prepare students for entrepreneurship.	2.62	0.85	9	Agree
8. Huge sums of money are required for further entrepreneurial training after graduation.	2.57	0.98	10	Agree
9. Many graduates are afraid of competition and taking risks in business.	3.02	0.83	3	Agree
10. Many lack self confidence and encouragements so are afraid of failure .	3.14	0.76	1	Agree
Composite Mean Score	**2.85**			**Agree**

Respondents were also asked about the strategies to enhance entrepreneurial awareness and skills among business administration students as shown in Table 6. Among the seven (7) strategies, recognizing changes in environment and identifying business opportunities ranks first (WM=3.53) followed by maintaining state-of–the art in the business through participation at seminars, workshops, journals & trade books (WM= 3.50) and availing training opportunities in the environment (WM=3.47). They also strongly agreed that financial institutions, non-government organizations, and the private sector should offer free entrepreneurial training to students (WM=3.44); that government should provide loans to graduates who want to become entrepreneurs (WM=3.38); and that students industrial work scheme should be revitalized to include entrepreneurship issues (WM=3.29). They likewise agreed that academic curriculum should also be restructured to accommodate entrepreneurship courses (WM=3.01).

Overall, there is a general consensus among business administration students that all these seven strategies are very important to enhance the entrepreneurial awareness and skills of individuals.

Table 6. Level of agreement on strategies to enhanceentrepreneurial awareness and skills

Strategies to Enhance Entrepreneurial Awareness and Skills	WM	SD	Rank	Interpretation
1. Restructuring the academic curriculum of profession to accommodate entrepreneurship courses.	3.01	0.78	7	Agree
2. Financial institutions, NGOs, and private sector organizations should offer free entrepreneurship training to students.	3.44	0.66	4	Strongly Agree
3. The students industrial work scheme should be revitalized to include entrepreneurship issues.	3.29	0.61	6	Strongly Agree
4. Government should provide loans to graduates who are worthy to be entrepreneurs.	3.38	0.68	5	Strongly Agree
5. Students must avail themselves to training opportunities in the environment.	3.47	0.67	3	Strongly Agree
6. Students must maintain state-of–the art in the business through participation at seminars , workshops, journals and trade books.	3.50	0.65	2	Strongly Agree
7. Students must recognize changes in their environment and be able to identify business opportunities.	3.53	0.61	1	Strongly Agree
Composite Mean Score	**3.38**			**Strongly Agree**

4. CONCLUSIONS AND RECOMMENDATIONS

We must take it in consideration that not all successful entrepreneurs have entrepreneurship or business degrees. They are individuals with inherent entrepreneurial skills which they honed to propel their respective businesses to success. Students must bear in mind that, if they have this skill, they should hone it for them to use it and succeed on their future business endeavors.

Majority of the CBM students have entrepreneurial inclination and awareness, without family business and belongs to families of middle income earners. They are fully aware of the benefits and the effects of entrepreneurship on their daily lives. Even if they don't have any existing family business, these students will likely start their own.

Most of the students agreed that they became aware of entrepreneurship through media and entrepreneurs must have clear, realistic and achievable goals and procedures. Students are also aware that entrepreneurship serves as an opportunity for one to show one's talent and do what one loves doing. However, many graduates are afraid of competition and taking risks in business. They are aware that every cent they are investing in starting a business, matters. Thus, students must recognize changes in their environment and be able to identify all the possible business opportunities, maintain state-of-the art in the business through participation at seminars, workshops, journals and trade books. Likewise, students must avail themselves to training opportunities in the industry.

The students may also engage in small scale business to develop their entrepreneurial awareness and skills. The management of University may provide more training, activities and seminars on entrepreneurial concept and principles intended for students of CBM. Moreover, a project or on-the-job training program such as establishing a small business within or outside the University prior to completion of the course should be set up by the school to cultivate the entrepreneurial skills of the students to become promising entrepreneurs.

Cognizance of scenarios such as this should enthuse other education institution to integrating curricular or co-curricular activities related to entrepreneurship in order to develop the inherent entrepreneurship skills of their students.

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FACTORS AFFECTING THE ENTREPRENEURIAL INTENTION OF TECHNICAL STUDENTS: CASE STUDY OF STUDENTS AT HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY

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ABSTRACT: *This paper aims at exploring and evaluating the main factors that affect the entrepreneurial intention of technical students in Vietnam. The Theory of Planned Behavior (TPB) developed by Ajzen (1991) was used as the basis for the research framework. A survey of 302 students in Hanoi University of Science and Technology shows that entrepreneurial intention is affected directly by attitude towards entrepreneurship and perceived feasibility, and indirectly by perceived self-efficacy and perceived feasibility. Besides, personal expectation and subjective norms do not show coherence with entrepreneurial intention.*

Keywords: *Entrepreneurial intention, attitude towards entrepreneurship, perceived feasibility, self-efficacy, technical students*

1. BACKGROUND

Entrepreneurship play an important role in innovation, economic growth and job creation for employees (Moica et al., 2012). For example, in America, the average income per capita has increased 700 times since the 19th century (Baumol, 2004), more than 90% of total asset and 34 million jobs have been created by startups during 1980s and 1990s (Timmons & Spinelli, 1999).

In Vietnam, new ventures particularly SMEs from the private sector account for nearly 50% of GDP and attract about 90% of new employees (VCCI, 2016). Consequently, entrepreneurship development is a good solution for job creation, and increasing the dynamics of the economy while reducing the unemployment rate.

Entrepreneurial activities are planned behaviors (Krueger et al., 2000; Hisrich et al., 2013). Entrepreneurial intention is the first period of entrepreneurship and affected by many external factors (Anderson & Jack, 2002). The intention shows the readiness of a person to behave so it is a direct determinant of a specific behavior (Ajzen, 2011). Studies of Armitage and Corner (2011), and Kibler et al. (2014) show that the intention may predict about 50% of propability of actual behavior. Thus, it is an effective way to improve the quantity and quality of entrepreneurs as "businessmen are made but not born" when understanding the factors that affect entrepreneurial intention (Boulton & Turner, 2005; Mellor et al., 2009). As a result, to promote entrepreneurship and the entrepreneurial culture, the starting point is to raise their entrepreneurial intention through the evaluation of factors affecting the intention (Schillo, 2016).

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Entrepreneurial intention has a significant role in the whole entrepreneurship journey of individuals and it indirectly promotes innovation, dynamics of the economy and job issue (Delmar et al., 2003). This is especially important for young people because they are the outstanding, knowledgeable and well-trained (Wilbard, 2009).

Studies of factors affecting entrepreneurial intention have many approaches in accordance with several ways of classification. Some studies focus on individual capacity such as technical skills, managerial ability, leadership, family tradition (Ang & Hong, 2000; Drennan et al., 2005; Alsos et al., 2011); characteristics such as desire for achievement, risk taking ability (Begly et al., 1997; Autio, 1997) and other approach is based on the theory of planned behavior (Krueger et al., 2000; Linan & Chen, 2009).

Moreover, various institutes and organizations all over the world have conducted surveys about the desire of the younger generation to engage in entrepreneurial activities. In 2011 a Flash Eurobarometer survey stated that, according to its research, 43% of young people from European countries were willing to open a new business (Flash Eurobarometer 2011). A couple of years later the University of Phoenix in the state of Arizona (USA) held a survey among young people under thirty years of age about their attitude to setting up their own business. It appeared that 63% of the respondents planned to or had already owned a startup company (Zetlin, 2013).

Previous researchers agree that entrepreneurship education is an effective method to supply students with necessary knowledge about entrepreneurship and affects their career choice (Mumtaz et al., 2012; Turker &Selcuk, 2009; Peterman & Kennedy, 2003; Türker và Selçuk, 2009). Phan Anh Tu and Tran Quoc Huy (2017) pointed out that the entrepreneurship program has positive influence on technical students' entrepreneurial intention in Can Tho.

Moreover, support from relationship is considered as the acceptance and support from family, friends and others for the business (Türker và Selçuk, 2009). Family and friends have great impact on youths' career choice because they may supply fund for startups and play the role of good examples (Nanda và Sorensen, 2009). Similarly, Altinay et al. (2012) in a research on students at the UK universities found that the family background has positive impact on entrepreneurial intention. Zapkau et al. (2015) also found that the model of parents positively influences the entrepreneurial intention.

Another factor that mentioned in previous studies is the perceived behavior control that also has impact on entrepreneurial intention. Perceived behavior control is the ease or difficulty in the individual's awareness about the entrepreneurship behavior (Maes et al., 2014). As explained by Maes et al. (2014), the internal control behavior is related to the ability of a person, eg, the confidence to do business, while the external control is much related to the situation. Mumtaz et al. (2012) also confirmed that the perceived behavior control (innovation and risk evaluation) has positive impact on entrepreneurial intention.

2. LITERATURE REVIEW AND HYPOTHESES

2.1 Entrepreneurial intention

Studies on entrepreneurial intention are often based on the Theory of Planned Behavior (TPB). According to this theory, the intention shows the readiness of an individual and becomes the determinants to perform a specific behavior (Ajzen 1991; 2011). Entrepreneurial intention is the commitment to start and own a new business (Krueger, 1993); or the confirmation of an individual about the intention to become the owner of a business and formulate the action plan at a certain point of time in the future (Thompson, 2009)

or even simply a motivation to connect action plan to establish a new business (Fayolle, 2013). In this study, the authors define entrepreneurial intention as the commitment to set up and own a new business.

2.2 Factors affecting entrepreneurial intention and hypotheses

Studies of factors affecting entrepreneurial intention have many approaches in accordance with several ways of classification. Some studies focus on individual capacity such as technical skills, managerial ability, leadership, family tradition (Ang & Hong, 2000; Drennan et al., 2005; Alsos et al., 2011); characteristics such as desire for achievement, risk taking ability (Begly et al., 1997; Autio, 1997) and other approach is based on the theory of planned behavior (Krueger et al., 2000; Linan & Chen, 2009).

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In this study, we consider the impact of these factors on entrepreneurial intention in accordane with Theory of Planned Behavior (TPB) as it is the most common theory about intention and its reliability has been proved through many previous studies in the world (Krueger et al., 2000; Linan & Chen, 2009; Ferreira et al., 2012). Factors that are assumed to affect students' entrepreneurial intention including (1) personal expectations; (2) attitude towards entrepreneurship; (3) perceived self-efficacy and (4) perceived behavior control.

Personal expectation

Personal expectation is the individuals' expectation of their ability to perform a specific action (Krueger et al., 2000). Thus, personal expectation is a psychological variable that shows the ability and desire of a

person of an important task or action. Expection of an individual on entrepreneurship is related to the confidence of the ability to develop a business plan, set up an enterprise or solve problems during startup process. Those persons who are confident about their ability to startup often have more positive attitude towards a task or intention to execute their plan. As a result, this study raises the hypothesis:

H1: Personal expectation positively influences students' attitude towards entrepreneurship

Attitude towards entrepreneurship

Attitude towards entrepreneurship can be considered as the positiveness or motivation to take part in entrrepreneurship whenever an opportunity arises (Fishbein & Ajzen, 1975; Krueger et al., 2000). The positive attitude towards entrepreneurship is also the desire to open a business rather than to seek for a job position in an organization (Tella & Issa, 2013). A person that have positive attitude towards entrepreneurship is more excited about doing a business and consider becoming an enterpreneur an important objective. In other words, positive attitude towards entrepreneurship is regarded as a motivator of entrepreneurship and strengthern the determination of startup decision (Autio et al., 2001; Linan & Chen, 2009). Hence, the following hypothesis is raised.

H2: *Attitude towards entrepreneurship positively influences students' entrepreneurial intention.*

Self-efficacy

Self-efficacy is one's sense of competence: a belief that we can do something specific (Bandura, 1977, 2001). Self-efficacy is a strong driver of goal-oriented behavior (Baum and Locke, 2004; Bandura, 1977, 2001). Desiring to do something, however, is not enough to lead to intentions. A belief that one can actually do it is also required. For instance, gender and ethnic differences in work preferences and performance can often be traced to differences in self-efficacy. Kourilsky and Walstad (1998) compared perceptions of knowledge with actual knowledge of entrepreneurial skills and showed that although the skill levels of boys and girls were comparable, girls were more likely to feel ill prepared.

Entrepreneurial self-efficacy is linked to certain behaviours, for example opportunity recognition and innovation associated with entrepreneurship (Chen et al., 1998). Lucas and Cooper (2005) have argued that self-efficacy, more than any other psychological construct, is linked to commitment to accomplish goals. In other word, self-efficacy can be defined as an invididual's confidence in successfully performing certain tasks such as identifying new business opportunities, creating new products, thinking creatively, and commercializing an idea or new development. Determination is an essential for would-be entrepreneurs who often take many risks and spend many years in the face of adversity. Thus, an individual that has positive self-efficacy will enventually has good perceived behavior control of entrepreneurship. As a result, this study proposes the hypothesis:

H3: *Self-efficacy positively influences students' perceived behavior control.*

Perceived feasibility

Perceived feasibility or perceived behavioural control (PBC) is defined as the individual's perception of the ease or difficulty of performing an action (Ajzen, 2002). In terms of entrepreneurship, PBC is considered as the perception of the success of becoming an entrepreneur. It is, therefore, a concept quite similar to self-efficacy (SE) (Bandura, 1997), and to perceived feasibility (Shapero & Sokol, 1982). All three concepts refer to the sense of capacity regarding the fulfillment of firm-creation behaviors. PBC would include not only the feeling of being able, but also the perception about controllability of the behavior. High PBC will

have impact on attitude towards startup (Devonish et al., 2010), motivation or intention of entrepreneurship so that it pushes the desire and determination of an individual to start their business (Krueger et al., 2000). Therefore, this study proposes the hypothesis:

H4: Perceived feasibility positively influences students' attitude towards entrepreneurship

H5: Perceived feasibility positively influences students' entrepreneurial intention

Subjective norms

Subjective norm (*SN*) measures the perceived social pressure to carry out—or not to carry out— entrepreneurial behaviors. In particular, it would refer to the perception that "reference people" would approve of the decision to become an entrepreneur, or not (Ajzen, 2001). Subjective norm is a cognitive variable that reflects the power of influential groups on an individual such as family, friends and colleagues. Regarding entrepreneurship, influential groups may become either hinders or motivators of an individual determination to startup. As Vietnamese people is heavily influenced by Confucian tradition, with the characteristics of collective culture, individuals often consider the opinions of others before acting (Nguyen et al., 2009). Therefore, the authors speculate that support from related people may foster the entrepreneurial intention. As a result, the following hypothesis is defined.

H6: Subjective norm positively influences students' entrepreneurial intention
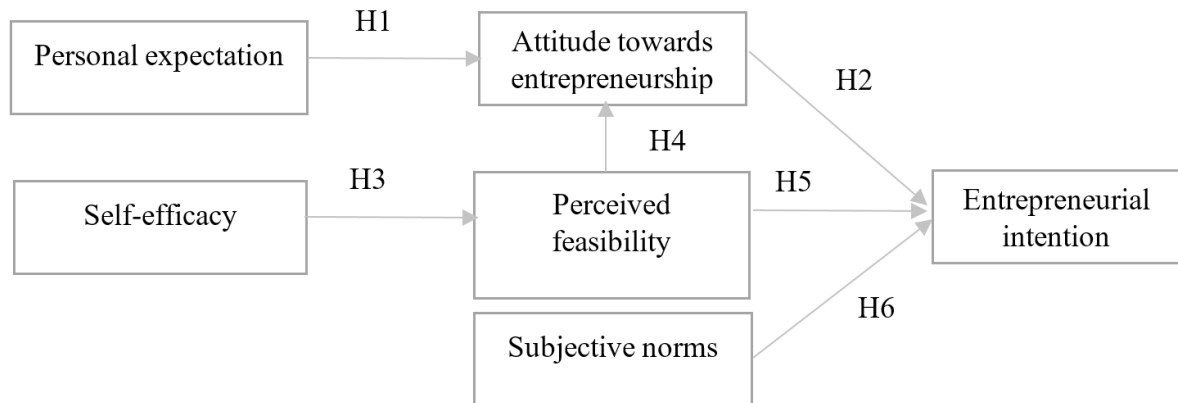
Figure 1: Research model

3. METHODOLOGY

3.1. Research design

This study uses structured questionnaire to survey technical students at Hanoi Universit of Sciences and Technology (HUST). The survey was conducted during April and May, 2017. The questionnaire items are adopted from previous studies such as Krueger et al., 2000; Autio et al., 2001; Linan & Chen, 2009. The pilot survey was done with 20 students at HUST and HCM University of Sciences and Technology to be checked for validity and adjustment of questionnaire items. After modification, an official questionnaire was designed as shown in Table 1. Liker-5-point scale was used with 1 means "totally disagree" and 5 means "total agree".

Table 1: Questionnaire Items

Code	Item	Source
Personal expectation		
EXP1	I know how to develop a startup project	
EXP2	I have prepared to set up an enterprise	
EXP3	If I try to set up an enterprise, it will be successful	Krueger et al. (2000)
EXP4	I think I know how to identify opportunities	
EXP5	I am able to solve arising probems	
Attitude towards entrepreneurship		
ATT1	I am interested in becoming an entrepreneur	
ATT2	If I have an opportunity and necessary resources, I would startup	
ATT3	I want to become an entrepreneur if I have to make a choice of my career	Krueger et al. (2000), Autio et al. (2001), Linan & Chen(2009)
ATT4	Becoming an entrepreneur would bring me great satisfaction	
ATT5	Becoming an entrepreneur would bring more advantages than disadvantages	
Subjective norms		
BEL1	My friend would support my startup idea	
BEL2	Family members would support my startup idea	Krueger et al. (2000), Linan & Chen (2009)
BEL3	My classmates would support my startup idea	
BEL4	People surrounding me thinks that it is admireable to become an entrepreneur	
Self-efficacy		
SEF1	Starting a business would be easy for me	
SEF2	Maintaining value of a business is not too difficult	
SEF3	I am able to control a startup	
SEF4	Startup would bring me more opportunities to develop	Krueger et al. (2000), Autio et al. (2001), Linan & Chen (2009)
SEF5	I know necessary aspects to begin a business	
SEF6	Only unexpected events would hinder me from starting up	
SEF7	Developing a business idea would be easy for me	
Perceived behaviorial control		

Code	Item	Source
FEA1	If I startup, my enterprise would sustain and develop	
FEA2	I think my startup would be highly successful	
FEA3	I think I have sufficient traits to become an entrepreneur	Krueger et al.
FEA4	Knowledge and experiences motivate me to become an entrepreneur	(2000)
FEA5	I have a network of relationship that support me when I startup	
FEA6	I can easily access supporting information for entrepreneurship	
Entrepreneurial intention		
INT1	I am ready to do everything to become an entrepreneur	
INT2	My objective is becoming an entrepreneur	Krueger et al.
INT3	I will try my best to start and manage my company	(2000), Linan &
INT4	I will surely start my own business in the near future (ie: right after graduating)	Chen (2009)
INT5	I have a big will about my startup	

3.2 Modeling and data collection

Survey respondents are technical students at HUST except for the first year students. Sample size is 300 following the rule of good sample by Comrey & Lee (1992) for the official survey. Two round of data collection was conducted: (1) pilot test with 156 valid questionnaires and (2) official survey with 302 valid respondents (Table 2). For the official survey, hierarchy sampling method was used with the defined percentage of student groups at HUST including (1) Information technology, Communication, Electricity and Automation; (2) Mechanics, Mechanics Design and Materials Science; (3) Physics, Chemistry, Biology and Environment and (4) Other majors (excluding economics and business administration). A printed questionnaire was delivered to students with support of lecturers at these following faculties: Electricity, Mechanics, Information Technology, Biotechnology and Food

Table 2: Sample Description

Criterion		Number of students (%)
Gender	Male	246(81.5%)
	Female	56(18.5%)
Grade	2nd year	83(27.5%)
	3rd year	178(58.9%)
	4th year	34(131.3%)
	5th year	7(2.3%)
Parents' job	Farming	150(50%)
	Officers	97(32.3%)
	Doing business	53(17.7%)
Part-time job	Often	35(11.7%)
	Occasional	149(49.7%)
	None	116(38.7%)

3.3 Data analysis

Data was analyzed using multi-factor data analysis method. With the pilot test (n = 156), the validity of the scales was evaluated based on the Cronbach Alpha, Inter-item total correlation, and exploratory factor analysis (EFA). The scale is valid when Cronbach alpha coefficient is over 0.6 and inter-item total correlation is over 0.3 (Hair et al., 2006; Nunally & Burstein, 1994). For EFA, the requirements are KMO coefficient is higher than 0.5, Barllet test is statiscally significant, total variance explained is higher than 50% and factor loading is over 0.5 (Hair et al., 2006). Secondly, confirmatory factor analysis (CFA) was conducted wih the official data set to test the convergence and distinctiveness of research concepts. Hypotheses wered tested through structural equation model (SEM) with the p-value of 5%. The standards for model fit include: Chi – square/df is smaller than 3, indicators such as CFI, IFI is greater than 0.9, RMSEA is smaller than 0.08 (Hair et al., 2006; Hooper et al., 2008; Kline, 2011). Factor loadings of CFA greater than 0.5 are accepted (Hair et al., 2006). Analysis was done with the support of two softwares SPSS 22 and AMOS 22.

4. RESEARCH FINDINGS

4.1 Pilot measurement scale test

The test of measurement scale with pilot survey (n = 156) shows that all research concepts meet the requirements of internal consistency and are unidirectional scales. All Cronbach alpha coefficients are greater than 0.6 and after removing items with small inter-item total correlation coefficients, the remaining items meet the requirement of 0.3. EFA shows that all KMO coefficients are greater than 0.5, Barlett test of sphericity is statiscally significant ((p-value < 0.05) and total variance explained (TVE) is greater than 50% and factor loadings are greater than 0.5 (Table 3).

Table 3: Measurement scale test of pilot survey

Variable	Cronbach Alpha	Inter-item total correlation	KMO	p-value	Factor loading	TVE(%)
Personal expectation	0.686	0.420	0.676	0.000	0.711	51.745
Attitude towards entrepreneurship	0.826	0.573	0.788	0.000	0.766	65.784
Subjective norms	0.688	0.453	0.660	0.000	0.758	61.653
Self-efficacy	0.760	0.449	0.668	0.000	0.672	51.942
Perceived feasibility	0.788	0.425	0.783	0.000	0.602	54.964
Entrepreneurial intention	0.895	0.671	0.884	0.000	0.784	70.455

4.2 Official measurement scale test

The official measurement scale test with CFA of the model shows that Chi-square/df = 2.524 is smaller than 3; CFI = 0.907 và IFI = 0.908 which is greater than 0.9; RMSEA = 0.071 which is smaller than 0.08 (Table 4). Thus, the model is confirmed to fit with the real data. The reliability of research concepts is over 0.6, almost extractions sum of square loadings is over 50% (except for those of "self-efficacy" factor and "perceived feasibility" factor, but the two variables are still in the accepted range according to Nguyen Dinh Tho & Nguyen Thi Mai Trang, 2009). It is concluded that all research concepts are reliable. After removing items with low factor loadings, the remaining ones have factor loadings higher than 0.5 so that the scales meet the requirement of convergence (Table 4). Square root of extractions loadings is higher than covariance, which means that the measurement scales meet the requirement of distinctiveness (Table 5).

Table 4: Measurement scale test

Variable	Mean (standard deviation)	Reliability	Extractions sum of square loadings (%)	Minimum factor loading
Personal expectation	2.293(0.891)	0.674	50.934	0.663
Attitude towards entrepreneurship	3.686(0.925)	0.834	55.913	0.682
Subjective norms	3.400(0.775)	0.757	50.957	0.694
Self-efficacy	2.626(0.824)	0.621	45.102	0.661
Perceived feasibility	2.995(0.731)	0.796	49.746	0.638
Entrepreneurial intention	3.221(0.895)	0.882	60.006	0.704

Table 5: Test of distinctiveness of measurement scale

	EXP	ATT	BEL	SEF	FEA	INT
Personal expectation (EXP)	0.714					
Attitude towards entrepreneurship(ATT)	0.236	0.748				
Subjective norms (BEL)	0.244	0.336	0.714			
Self-efficacy(SEF)	0.651	0.491	0.366	0.672		
Perceived feasibility (FEA)	0.555	0.605	0.376	0.605	0.705	
Entrepreneurial intention (INT)	0.476	0.735	0.281	0.627	0.699	0.775

4.3 SEM analysis and hypothesis test

SEM analysis shows that the mode fits the reality with some indicators as follow: Chi –square = 2.541 (smaller than 3), CFI = 0.903 and IFI = 0.904, both are greater than 0.9; RMSEA = 0.072 (smaller than 0.08) (Figure 2).
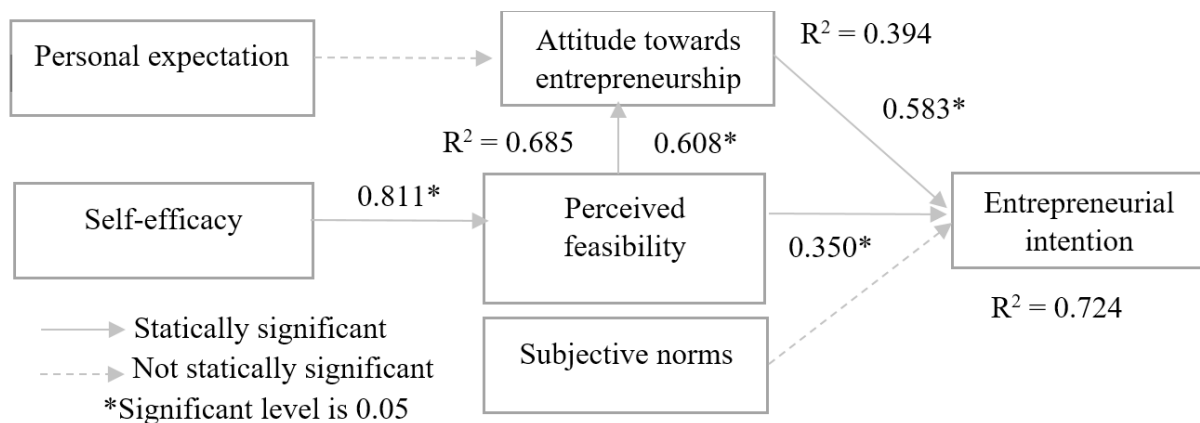
Chi-square/df = 2.541, CFI = 0.903, IFI = 0.904, RMSEA = 0.072

Figure 2: Results of SEM analysis (standardized)

The estimation results show that the entrepreneurial intention is affected by the attitude towards entrepreneurship (β = 0.583) and perceived feasibility (β = 0.350), subjective norms do not affect the entrepreneurial intention. Moreover, the attitude towards entrepreneurship is affected by perceived feasibility (β = 0.608) but is not influenced by personal expectation; while personal efficacy affects the perceived feasibility (β = 0.811). In other words, H2. H3, H4 and H5 are accepted, while H1 and H6 are rejected.

In addition to the direct impact by attitude and perceived feasibility, the entrepreneurial intention is also indirectly affected by other factors. The estimation from research data shows that the most influential factor is perceived feasibility ($\lambda = 0.706$), the next factor is attitude towards entrepreneurship ($\lambda = 0.585$) and the last factor is personal perceived capability ($\lambda = 0.573$) (Table 6).

Table 6: Results of direct, indirect and total affect

Variable	Impact	Personal perceived capability	Perceived feasibility	Attitude towards entrepreneurship
Perceived feasibility	Direct	0.811	0.000	0.000
	Indirect	0.000	0.000	0.000
	Total	0.811	0.000	0.000
Attitude towards entrepreneurship	Direct	0.000	0.000	0.000
	Indirect	0.493	0.000	0.000
	Total	0.493	0.608	0.000
Entrepreneurial intention	Direct	0.000	0.350	0.585
	Indirect	0.573	0.356	0.000
	Total	0.573	0.706	0.585

5. DISCUSSION AND IMPLICATIONS

Survey results show some characteristics of the sample as follow: the percentage of male students is four time higher than that of female students, 50 percent of the surveyed students come from farming families and more than 50 percent of them have part time jobs. The high percentage of male students reflect the reality that the technical majors are still the choice of male students rather than the female ones.

This study also shows the clear impact of attitude towards entrepreneurship and perceived feasibility on entrepreneurial intention. Particularly, perceived feasibility has both direct and indirect impact on entrepreneurial intention. This result is similar to previous studies of Krueger et al. (2000), Linan & Chen (2009). The research results also bring some important implications for universities to nurture, foster students' entrepreneurial intention. Universities may raise the perceived feasibility of entrepreneurship for students through a number of activities such as (i) providing courses and subjects related to business administration, entrepreneurship for technical students; (ii) building the network of alumni and funds supporting entrepreneurship; (iii) establishing information centers to support entrepreneurship and (iv) organizing startup and innovation contests in universities. The universities may also raise the positive attitude towards entrepreneurship through communication activities about the benefits of startup activities. It is also necessary to build up the ancedotes and successful startup stories of students to nurture and enhance their entrepreneurial intention.

Personal expectation and subjective norms are not proved to have either direct or indirect impact on entrepreneurial intention of students. This result should be explained in the specific research context. For the personal expectation, the items focus on some aspects such as developing startup project, establishing new enterprise which belong to the economics knowledge. Currently, HUST does not have courses about entrepreneurship for technical students. This fact may be the reason that surveyed students do not have clear perception of their expectation about entrepreneurship, then this factor does not foster positive attitude towards entrepreneurship. Subjective norms are not shown in this study that they affect students'

entrepreneurial intention. It is explained that students are quite independent in making decision so that they are not heavily affected by external factors. According Bagozzi (1992), those independent and highly determined individuals have the tendency to decrease the impact of external ideas on their intention or decision. Thus, this study finding can be accepted because the majority of HUST students are male who are often more determined and independent than female ones (Hofstede, 1984).

Although this research achieved its objectives, there are still some limitations. Firstly, the survey focuses on only one technical university so that the research findings are limited to the surveyed sample. Secondly, in this study, the authors do not focus personal traits that may have impact on entrepreneurial intention. It is suggested that further studies may expand the survey area and include the personal traits in the research model.

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VENTURE CAPITAL AND ENTREPRENEURIAL FIRMS: A REVIEW OF RECENT ACADEMIC LITERATURE AND SUGGESTION FOR FUTURE STUDIES IN VIETNAM

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ABSTRACT: *The objective of this study is to conduct a comprehensive review of recent literature on venture capital and its effects on entrepreneurial firms from a corporate finance perspective. Previous literature emphasizes the role of venture capital of entrepreneurs, financiers, governors, and information intermediaries. Moreover, the recent literature makes great efforts to explain vital factors influencing the survival and success of venture capital on entrepreneurs. Some factors worth mentioning are the venture capital's financing stages, the syndication of various kinds of venture capitalists, the intervention of various types of financiers such as banks and government involvement as venture capitalists and public decision makers. This study not only reviews the very scant academic literature on venture capital in Vietnam but also identifies previous research gaps and provides recommendations for future studies.*

Keywords: *venture capital; entrepreneurial firms; corporate finance; agency problem; syndication.*

1. MAIN TEXT

1.1. Introduction

Venture capital (VC) is defined as "the independent, professionally managed, dedicated pools of capital that focus on equity or equity- linked investments in privately held, high growth companies." (Gompers and Lerner, 2001). Venture capital has increasingly emerged as a key financial intermediary, providing capital for entrepreneurial ventures that have numerous obstacles to accessing financing from other capital providers, like banks or financial institutions. This is due to the fact that entrepreneurial ventures, especially those in the seed or early stage, are normally those with high growth opportunities but correspondingly high risk, few tangible assets, and operating in rapidly changing markets. Since the inception in 1946 of a true venture capital firm for startups born from technology development in World War II by MIT President Karl Compton, the global venture capital industry brokers 13,900 deals of 158 billion USD in 2017 (National Venture Capital Association, 2018). According to the Topica Founder Institute, Vietnam was given 92 investment deals for entrepreneurship, innovation, and creation with a total investment amount of 291 million USD in 2017. This is double the number of deals in 2016 with a 50% increase in total deal size. The emergence of venture capital and the ambitious "startup nation" plan of the Vietnamese government will better succeed by considering the valuable lessons from the success of other nations, Vietnam's own previous experiences in operating venture capital and careful consideration of all future ventures. The first objective of this study is to conduct a comprehensive review of recent literature on venture capital and its effects on entrepreneurial ventures in the context of corporate finance. The previous studies emphasize the

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role of venture capital of entrepreneurs, financiers, governors, and financial intermediaries. Moreover, the recent literature makes great efforts to explain vital factors influencing the survival and success of venture capital on entrepreneurs. Some factors worth mentioning are the venture capital's financing stages, the syndication of various kinds of venture capitalists, the intervention of various types of financiers such as banks and government involvement as venture capitalists and public decision makers. This study not only reviews the very scant academic literature on venture capital in Vietnam but also identifies previous research gaps and provides recommendations for future studies.

The remainder of our paper is organized as follows. Section 1.2 reviews the recent literature to discuss the roles of venture capital in entrepreneurial ventures' performance. Section 1.3 presents the determinants of venture capital's success on entrepreneurs. Section 1.4 summarizes the recent literature on venture capital in Vietnam and provides suggestions for future studies.

1.2. Roles of venture capital on entrepreneurial firms' performance

Figure 1, adapted from National Venture Capital Association (2018), provides an overview of where venture capital plays on the development of entrepreneurial ventures. While the stage of idea generation and product development, which are suitable only for high-risk takers - angel investors, the development and growth of a startup are highly attractive to venture capitalists who prefer sponsoring for operational growth and expansion. In these stages, the previous literature highlights the three main roles that venture capital play for entrepreneurs, including (i) financial intermediary; (ii) governance and (iii) quality signal and information intermediary (Dutta and Folta, 2016).

Fig. 1. *Entrepreneurs' development and investment stages*
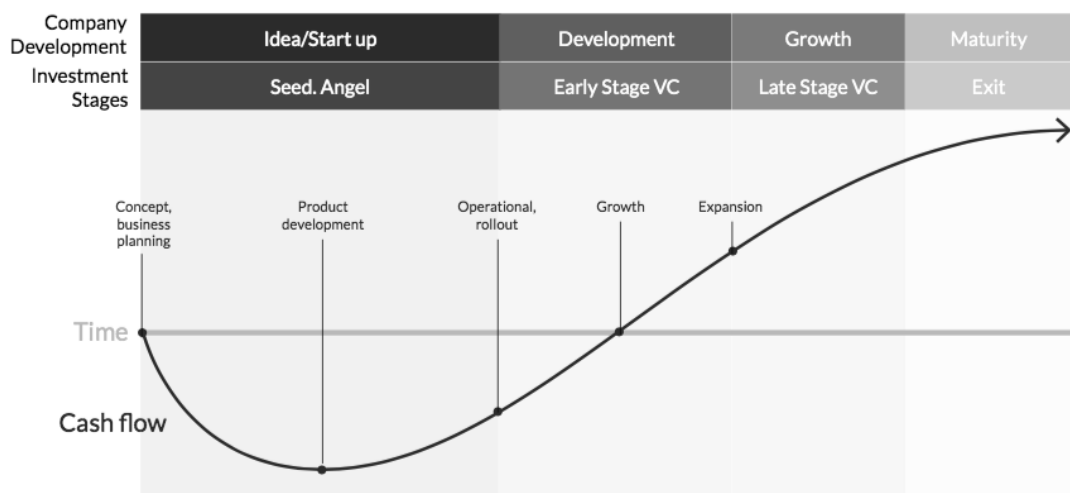
1.2.1. Financial intermediary

Entrepreneurial firms face difficulties in financing projects through debts and equity since these firms suffer high uncertainties and high information asymmetries. These characteristics allow for overinvestment by managers without the consent of creditors and equity investors. Gompers and Lerner (2001) identified the high volatile investment strategies as an example of the overinvestment problem in young biotechnology firms. These kinds of firms have a high proportion of intangible assets that are difficult to assess and often invest in recognized scientific research, which builds personal reputation for entrepreneurs but at the expense of investors.

In these circumstances, venture capital functions as a specialized financial intermediary that not only provides financial resources but also alleviates the information gaps through screening and monitoring of entrepreneurs. Gompers and Lerner (2001) stated that the pre-investment screening could help venture capitalists to gain private information of entrepreneurs, and thereby solve the information asymmetries. Bertoni and Martí (2013) justified the dominant role of venture capitalists by studying Spanish low and medium technology firms utilizing venture capital investments from 1995 to 2004. The sample witnessed high dependency on internally generated cash flow for previous investment before the first venture capital round as evidence of information asymmetries. However, after collaborating with venture capitalists, the investment-cash flow sensitivity dramatically decreased.

1.2.2. Governance role

Previous literature focused on different financial contract theories to deal with various types of conflicts arising from contractual parties, including the principal- agent theory, the control theory (the incomplete contract theory), the "stealing" theory and the hold-up theory (Harris and Raviv, 1979; Dewatripont and Tirole, 1994; Hart and Moore, 1998). Based on these theories, Kaplan and Stromberg (2003) studied 200 venture capital investments in 118 portfolio companies and found that venture capitalists in a governance role had the authority to separately allocate rights to entrepreneurs such as cash flow, voting, board, liquidation and other control rights. The rationale for this allocation rests in the entrepreneurial firm performance. The better firm performance, the more control rights allocated to entrepreneurs. By doing this, venture capital can govern, circumvent the agency conflicts among contractual parties, and create strong motivation for entrepreneurs to operate at the best efforts to enhance firm performance and protect stakeholders.

Venture capital also provides coaching and monitoring for operating activities of entrepreneurial firms. Lerner (1995) conducted a study of 271 biotechnology firms that indicated that an average of 1.75 venture capitalists were added to replace and reshape the top management team. Chemmanur et al. 2011 listed the coaching and monitoring functions of venture capital, including investigating and professionalizing management team, and setting the compensation schemes as incentives for managers. Using the Longitudinal Research Database of the U.S, they explored that VC-backed firms'[1] overall productivity (efficiency) is improved when compared to non-VC-backed firms. Relative to monitoring function, venture capital can help professionalize entrepreneurs by assisting in strategic business planning, product market support, human resources and internal organization. Hellmann and Puri (2002) conducted a study on 170 young technology firms in Silicon Valley and confirmed the involvement of venture capitalists in entrepreneurial firms' corporate governance through replacing existing CEOs with outsiders, employing marketing and sales team and adopting stock option plans. Additionally, venture capitalists that possess strong business flexibility can participate in various business functions, understand business threats and opportunities of entrepreneurs, and consult them to make a right decision such as the timing and the mode of commercialization such as IPO and acquisition.

1.2.3. Quality signal and information intermediary

Venture capital can help entrepreneurs to participate in its extended network of investors, suppliers, and customers. Hsu (2006) identified four major constraints that hinder the abilities of entrepreneurs to expand boundaries for commercialization. These constraints consisted of high search costs in finding cooperation partners, fear of expropriation, unrecognized quality, and insufficient development. Hsu (2006)

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[1]   VC-backed firms: Venture capital-backed firms

analyzed 696 startups in the US and justified that venture capital could mitigate these four hurdles by its network, its role as information intermediary and quality endorsement. For example, since startups can be seen as poor quality by partners, venture capital can play an important role in legitimizing the existence of startups. Megginson and Weiss (1991) found that 320 VC-backed firms from 1983 to 1987 exhibited lower underpricing and lower underwriter spreads compared to non-VC-backed firms matched by industry and offering size. More importantly, involvement in the capital venture network helps startups to reduce the search cost and enhance an opportunity to find cooperation partners. Additionally, the ability of venture capital to professionalize startups may work well in dealing with the issue of insufficient development and attracting more cooperation partners (Hellmann and Puri, 2002). The study of 701 startups in the U.S. by Hsu (2006) confirmed that VC-backed startups engaged in cooperative commercialization strategies resulting in post-funding R&D alliances, achieving an IPO or a reputable IPO underwriter.

1.3. Determinants of venture capital's success on entrepreneurial firm performance

1.3.1. Venture capital syndication

Syndication is one of the highlight features of venture capital financing when at least two venture capitalists cooperate in financing a given entrepreneurial firm, especially when the capital needed is quite modest compared to that of each separate venture capitalist's contribution. There has been a continuing debate on which is more prominent in explaining motives for venture capital, the selection or the value-added hypothesis. The selection hypothesis supports the idea that two or more venture capitalists participating in choosing projects improves the effectiveness of the screening process when one partner can learn from the others' evaluation (Lerner, 1994). The value-added hypothesis, on the other hand, is justified by a study of Brander et al. (2002) who conducted research on the removal of 584 Canadian venture capitalists from startups. The study showed that on average, the syndicated venture investments had higher rates of return than those in standalone investments. These rates are the results of venture capitalists' likelihood to engage in managerial activities of an entrepreneur to enhance investment performance, thus, supporting the value-added hypothesis. Likewise, Tian (2011a) argued that syndicate-backed entrepreneurial firms can enhance both product and financial market value through support from various venture capitalists. Regarding the product market value, syndicated venture capitalists have a broad range of skills, industry expertise, information advantages, and networks. Therefore, entrepreneurs can benefit from one venture capitalist's network to employ staff, maintain relationships with suppliers and customers while taking another venture capitalist's advantages of fundraising and obtaining sufficient financial resources. Consequently, venture capital syndicates can intensify innovation and operating performance of entrepreneurial firms. According to Tian (2011a), venture capital syndicates can bridge the information gap by guaranteeing and conveying favorable information about entrepreneurs to the public. Hence, syndicate-backed entrepreneurs can achieve higher exit outcome via lower underpricing and higher market stock return.

1.3.2. Venture capital stage financing

Venture capitalists can allocate the capital under many financing rounds as a mechanism to intervene in entrepreneurial firm performance. Existing literature illustrates three main motives for venture capital staging, monitoring, preventing hold-up problem and learning opportunities. The underlying view behind these three motives is the ability to mitigate the agency problem. By setting targets for each financing round, venture capitalists can monitor entrepreneurs following these targets, reduce investment amount in any stage or even abandon those firms, which do not fulfill the stage targets (Kaplan and Stromberg, 2003: Tian, 2011b). This not only prevents entrepreneurs from overinvesting capital, originally generated

from agency conflicts between managers and investors, but also avoids entrepreneurs from leaving firms for better careers as seen in the hold-up problem. Additionally, what venture capitalists learn from the investees through each stage of capital infusion will influence the level of commitment to entrepreneurs. Tian (2011b) studied 27,460 entrepreneurial firms in the US from 1980 to 2016 and found evidence that supports the monitoring hypothesis through the causes and consequences of venture capital staging. Accordingly, venture capitalists that are located far away from entrepreneurial firms experience higher numbers of financing stages, smaller amounts of capital invested as well as shorter duration between each round. This is aligned with the monitoring hypothesis, caused by increased geographic distance. Venture capitalists of this nature need to keep investees under stricter discipline. Subsequently, according to Tian (2011b) the number of venture capital stages also positively affects an entrepreneurial firm's performance regarding the probability to go public, operating performance, and survival in the post-IPO period.

1.3.3. Governmental or independent or bank-affiliated venture capital

Previous literature on governmental venture capital (GVC, hereafter) argues that GVC entrepreneurial firms perform worse than those of independent venture capital (IVC). GVC is determined by regulators; therefore, venture capitalists may have to deal with more political pressure than IVC. GVC pursues politically related and non-financial goals such as social welfare maximization whose benefits are not substantial enough to offset costs generated. According to Cumming et al. (2017), the limitations of GVC compared with IVC are covenants, decision-making process or compensation plans, which are highly dependent on regulators and may be constant across managers, funds, operation, and performance. These issues may even increase the possibility for agency conflict between political forces in _GVC and managers of VC-backed firms regarding appropriate manager compensation. Cumming et al. (2017) also suggest the solution for the problem of GVC is IVC-GVC syndicated partnerships when independent venture capitalists can join in and mitigate the agency problem called by political pressure or inefficient compensation terms. In exchange, GVC can give entrepreneurial firms more opportunities to access government contacts that widen a firm's network to government-related suppliers or customers and circumvent the political risks such as regulatory hurdles in business plan approvals.

Another type of venture capital worth mentioning is an affiliated VC firm. Different from an independent VC in which a close-end fund is established and provides capital from investors (normally institutional investors called limited partners), the affiliated VC firms refer to those, which are subsidies of larger firms, parent banks or insurance companies. While the independent VC seeks investment for corresponding investment return, the purpose of affiliated VC is to also fulfill long-term strategic interests of an affiliated company. Therefore, affiliated VC tends to focus more on finding potential entrepreneurs who are complementary to the parent firms' activities than on raising capital, which can be easily accessed from a large pool of affiliates (Hellmann et al., 2007). Andrieu and Groh (2012) explore how the affiliation of VC influences entrepreneurial firms compared to those financed by independent VC. The authors indicated that independent VC provides better support for entrepreneurs regarding business and operation strategies and monitoring and management, while bank-affiliated VC is suitable for entrepreneurs who are seeking funds for an expansion stage. This is because of a bank-affiliated VC's advantage of available capital and the ability to discard any moral hazard raised from outside investors.

1.3.4. Public policy and institutional factors

The study of Lerner (2009)- one of the most comprehensive studies on public policy, venture capital, and entrepreneurships tries to explain why, what, and how public efforts are implemented to boost the entrepreneurships and venture capital. The main purpose for public policy focused on entrepreneurships

and venture capital are to encourage investments that benefit both individuals and the society as a whole and to provide entrepreneurs with legitimacy (stamp of approval) to overcome capital constraints (Lerner 2009). _While knowledge spillovers hinder venture capital and entrepreneurs from investing in innovation due to fewer benefits compared to society. Information asymmetries also create obstacles for raising capital from external providers like banks. Hence, the government improves entrepreneurial climate and venture capital market attractiveness in order to enhance investment and overcome financial constraints.

Regarding entrepreneurial climate, the first focus of public policy is improving the legal system to boost entrepreneurial activities, such as well-defined legal frameworks and enforcement on complex contracts between venture capital and entrepreneurial firms. An example for such rules in the US is the allocation of control of entrepreneurial firms depending on how the investment performs and correspondingly, the issuance of convertible securities for investors. Lerner (2009) estimated that those venture capital funds active in the US legal system can experience 19% higher return than other typical funds. The second focus is how public policy creates cutting-edge technologies by commercializing technologies invented by universities or academic-based institutions. The final and more common focus is the tax policy for capital gain tax. Decreasing capital gain tax, increasing the difference between tax rates on capital gains and ordinary income, or offering special tax rates for investments in entrepreneurial firms are all underlying policies that boost entrepreneurs' demand on capital, which in turn increases venture fundraising. Lerner (2009) gives outstanding examples of how the tax policy motivates entrepreneurial activities. In the US, venture capital operating under limited partnerships can exclude 50 percent of any capital gains from small businesses such as entrepreneurs, which means that the marginal tax rate is 14 percent compared with 28 percent in normal tax rate. Similarly, in the UK, the tax policy allows a decrease from 40 % to 10% of the effective tax rate for disposal of assets for those firms operating for two years or less, which boosts entrepreneurial activities (Lerner, 2009).

For the venture capital market, the public policy aims at increasing the attractiveness of this market by allowing true limited partnerships. Such limited partnerships attempt to limit the level of risks for investors, improve the local market aligned with IPO opportunities and utilize overseas labor force via pools of expatriates who can serve as angle investors, mentors, venture capitalists or consultants for policy markers (Lerner, 2009).

For institutional factors, Cumming and Johan (2013) identified various factors influencing the development of the venture capital market. For example, the legal origin which follows the common law tradition as in La Porta et al. (1997) usually provides better protection for private properties and offer more flexibility to new developments and governance; therefore, that legal origin is more suitable for venture capital development compared with those in civil law. Other levels of institutional quality according to La Porta et al. (1997), such as the rule of law, the efficiency of legal environments or the level of corruption, risk of expropriation or contract modification offer a better environment for venture capital. For example, higher legal quality offers well-defined contracts that are easily enforced faster implemented corporate governance in venture capital (Cumming and Johan, 2013). Likewise, other studies, such as Bruton et al. (2009), explore how institutional differences influence the development of entrepreneurial ventures. The authors explored the strong impacts of the institutions with concentrated economic power on how venture capital chooses funded firms, how difficult it is for venture capital to monitor entrepreneurs compared with those in more diverse ownership structures, and how strategic sales of funds become the dominant exit strategy of venture capital.

1.4. Research on the relationship between venture capital and entrepreneurs in Vietnam and suggestion for future studies

1.4.1. Previous literature in Vietnam

For the development of venture capital, Klingler (2014) studied the venture capital industry in Vietnam and discovered that it is underdeveloped with a total of only 150 million USD from four venture capitalists in 2014, including IDG Ventures Vietnam, DFJ Vina Ventures, Dragon Capital, and Mekong Capital. The venture capital policy focuses much more on credit-based financing than regulation, tax, and policies for equity financing. According to Klingler (2014), Vietnam has not adopted Limited Partnerships for venture capital management, and the appearance of venture capital fund in Vietnam is often negotiated under one-off deals with the government rather than industry-wide public offerings. For example, the establishment of IDG Ventures Vietnam is a single agreement between the Ministry of Science and Technology and IDG venture capitalist in which IDG license is approved in exchange for the support to promote Hoa Lac Hi-Tech Park. IDG, the first true venture capital established in 2004 with 100 million USD under management embraces the first wave of startups in Vietnam. After that, there are some outstanding venture capital funds, which contribute to the next wave of startups, such as Cyberagent Ventures, Vina Capital, 500 Startups Vietnam (Dao, 2016).

There is very scant research on the link between venture capital and entrepreneurs in Vietnam. Regarding the determinants of venture capital's success on entrepreneurial firms, Scheela and Van Dinh (2004), one of those few empirical studies on five venture capital firms in Vietnam, found that the venture capitalists focus more on monitoring entrepreneurial firms in Vietnam compared with those in the US due to the insufficient institutions. More importantly, the connection with government officials is proved to have a statistically significant and unique impact on how venture capitalists add value to entrepreneurial firms. Likewise, Dao (2016) argues that the venture capital investment environment and the startup ecosystem in Vietnam are lagging behind Singapore and Malaysia which is attributed to an incomplete legal framework, bureaucracy, and an inefficient financial market for an effective exit strategy of venture funds.

Despite the emergence of venture capital and entrepreneurial ecosystem, the scarce studies on the relationship between venture capital and entrepreneurs provoke potential future research in Vietnam.

1.4.2. Suggestion for future studies

First, with the surge of more than 3000 Vietnamese entrepreneurial firms according to the Echelon Magazine, the research on the role of venture capital in entrepreneurial firms in Vietnam should focus on conducting quantitative models to statistically examine what kinds of roles and subsequent value that venture capital may add to entrepreneurial firms. Among those roles of capital provider, governance, and quality signal, which one is more dominant in supporting entrepreneurs? More importantly, endogenous tests need to be conducted to decide whether venture capital indeed creates value-added performance or if this is just the consequence of the screening ability of venture capitalist to find superior entrepreneurs before investments.

Second, with the increasing appearance and database of more than 40 venture capital funds in Vietnam, the next step is to explore what determines the success of venture capital on entrepreneurs. This can be drawn from the way venture capital funds designs contract terms, stages of capital infusion, the syndication of venture capitalists or funding sources from either individuals, governments or banks. Especially, with the establishment of the project "Supporting the startup ecosystem until 2025", the Vietnamese government

commits to set up a national fund and use a considerable proportion of public budget to invest in entrepreneurial ventures, innovation, and creative activities. Future research should study how effectively the Vietnamese government influences startups through dual role as financier and governor. Additionally, whether government intervention can circumvent capital and managerial constraints or be detrimental to venture capital and startups to fulfill political ambition is always a debatable topic for further research.

Last, there is indeed no venture capital established in Vietnam, all are established overseas and only have representative offices in Vietnam due to incomplete legal framework and legal obstacles. With the commitment of the Vietnamese government to promote a startup nation for Vietnam, new public policies will be launched. For example, the decree on venture capital and the decree on investments in entrepreneurs and innovation will be published by the Ministry of Planning and Investment. This creates a well-defined legal framework for any new establishments of venture capital in Vietnam. Further studies can enhance understanding of the implications of public policies in the success of venture capital. Others can take the disclosure of these policies as external political events to investigate the causal effects of venture capital on entrepreneurial firms.

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INNOVATIVE STARTUP INVESTMENT FUNDS

Tran Thi Thu Huong*

ABSTRACT: *In order to promote national innovative startups, it is necessary to encourage individual and institution to invest in this field, in which innovative startup investment funds play very important role. The problem is that how to establish, manage and use these funds to ensure its effectiveness. Moreover, whether governments should invest the state budget in innovative startup firms at the beginning, then move gradually to non-govermental funds. In Vietnam, startup and innovative startup investment fund have been new concepts. This paper has discussed about problems related to innovative startup investment funds such as establishment, management, using mechanisms in Viet Nam based on current regulations and suggest several solutions to develop this type of fund*

Keywords: *Innovative startup investment fund, innovative startup firms, finance sources.*

1. INTRODUCTION

There are many definitions of investment. In an economic sense, an investment is the purchase of goods that are not consumed today but are used in the future to create wealth. In finance, an investment is a monetary asset purchased with the idea that the asset will provide income in the future or will later be sold at a higher price for a profit.

In board meaning, investment is the sacrificeof current resources to implement activities with the aim of achieving higher results than the beginning capital. The resources could be money, natural resources, labor, and intelligence while the results could be the increase in financial assets, physical assets, intellectual property and other resources.

In narrow meaning, investment includes activities that use current resources to gain higher profits for the economy and society in the future over invested resources.

Any business activity needsinvested capital, including innovative startup – a highly risky business. What are financial sources and mechanism for effective innovative startup business? This problem should be considered and solved to promote innovative startup activities. In the context of the market economy and the 4.0 revolution, regulations and policies for innovativestartup and innovative startup invesment funds should be set up to ensure investment willingness of all investors.

In Viet Nam, Decree 38/2018/NĐ-CP regulates that investment in small and medium sized innovative startup enterprises refers to financing that investors provide to do business activities via capital contribution to establishment of startups, or purchase of shares or stakes of startups which are not public companies. It is clear that Viet Nam just had regulations of investment in small and medium innovative startup enterprises. As a result,

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if innovative startup firms are not small and medium, it could be difficult to manage and foster investment.

Furthermore, "innovative startup" term should be understood clearly before setting any rules to develop this business model. According to Clause 2, article 3 in Law on provision of assistance for small and medium –sized enterprises (2017), small and medium sized innovative startup enterprise is an SME that is established to implement its business ideas based on the exploitation of intellectual property, technology and new business models and is able to grow quickly. Article 17 in this law also determine conditions that small and medium sized innovative startup enterprises receive the assistance as the following:

• The startup has been put into operation for up to 5 years from the day on which its first enterprise registration certificate is issued

• The startup has not initiated public offering of its securities (in case of a joint-stock company)

Moreover, Decision 844/QĐ-TTg on approval for assistance policies on national innovative startup ecosystem to 2025 point out the beneficiaries include individuals or groups having startup projects or startups that may be potential for rapid growth by utilizing propriety assets, technology and new business initiatives; or startups operating for not exceeding 5 years form date on which the first enterprise registration certificated is issued.

It is a problem that what new idea is and how to implement new idea by exploiting propriety assets, technology (intellectual property rights problems). How is new business model? How are projectsor startups that may be potential for rapid growth? So, it is nescessary to make as many details as possible in definition of innovative startup in order to distinguish from other types of startup and business activities.

Nowaday, many countries have joined new free trade agreements, leading to new development spaces, required each country to choose and change. It creates opportunity for the development of innovative startup investment funds.

2. INNOVATIVE STARTUP INVESTMENT FUNDS IN VIET NAM

With the aim of encouranging individual and institution to invest in innovative startups and innovative startup investment funds, the Government needs to create suitable environment for investment, including legal environment. In Viet Nam, there are many regulations on funds, howeverlack of regulations on innovative startup investment funds.

Based on the Law on provision of assistance for small and medium – sized enterprises (2017), investors in creative startups shall include creative startup investment funds and domestic and foreign organizations and individuals doing business via contribution of capital to establish startups, purchase of shares or stakes of startups. A creative investment fund which is created from capital contribution of private investors aims to invest in startups according to the following principles:

• The amount of investment in a small and medium sized creative startup shall not exceed 50% of charter capital of the post-investment startup

• The private investor who contributes capital to the fund shall be financially capable and take the responsibility for his/her stakes.

In addition, according to Decree 38/2018/NĐ-CP,innovative startup investment fund means a fund which is established from investments made by private investors to invest in startups. This fund does not have legal status and is established by capital contributed by not more than 30 investors according

to the fund's Charter. An innovative startup investment fund is not entitled to make investments in other innovative startup investment funds.

An innovative startup investment fund shall be managed under at least one of the following models:

• General meeting of investors, the fund management company;

• General meeting of investors, the fund's Board of representatives or Director, the fund management company;

• General meeting of investors, the fund's Board of representatives and Directors, the fund management company.

The fund's investors may either establish or hire a company to take charge of managing the innovative startup investment fund. The fund management company shall carry out procedures for establishment of this fund and apply for registration of its additional business sector, which is management of venture capital fund, in accordance with the law regulations on company registration when taking charge of managing the innovative startup investment fund. The management of this fund prescribed herein shall be done according to the fund's charter and agreements or contracts signed with the fund (if any), and not be governed by regulations of the Law in securities.

It is a problem because these regulations could limit the activity of innovative startup investment funds.In fact, investment funds usually exsit in 2 forms of contracts and firms. Corporate investment funds are legal entity. The Board of directors is elected by the shareholders, who are investors of fund, acts as the fund management agency, selects fund management company and supervises the investment activities of the fund management company. In this type, fund management companies are consultants in analysing investment opportunities and managing portfolios. In Viet Nam, this type of fund is not existed because Viet Nam has stipulated investment funds don't have legal entity. Another type of fund is contractual investment fund. It is an investment fund without a legal entity status and investor is a person who contributes capital to the fund and entrusts the invesment to the fund management company. According to the current regulations in Viet Nam, the innovative startup investment funds would be established and operate under this form.

It is suggested that in Viet Nam, there should be regulations and mechanisms for the diversifications of the organization and operation of funds for investment in creative startups. So it is possible to encourage individuals and institutions to contribute capital to this highly risky investment fund because there are more suitable choices for different kinds of investors. Furthermore, it would be easier for innovative startup investment funds to raise capital of qualified and expert investors if these funds exist in form of corporates. So creative startup firms could receive better consultant and administrationfrom owners of the invesment, supporting to the successful startup business.

In case of applying only contractual investment funds, some regulations in Decree 38/2018/NĐ-CP should be reconsidered.

•Firstly, the management of innovative startup investment fund shall be done according to the fund's charter and agreements or contracts signed with the fund (if any). A problemis that creative startup investment funds are not legal entity. It means these funds are not independent of fund's investors. Consequently, these funds could not a part of contracts.

•Secondly, innovation startup invesment fund is the fund which is established from investments made by private investors to do creative startup. Could this regulation limit the participation of other types of investors? It is suggested that the definition of private investors should be made clearly and the Government

should consider the regulation of limited investors. Besides, it is necessary to stipulatethe finance sources being used to contribute to innovative startup investment funds due to its highly risky feature. For example, the state budget should not be used to invest in these funds.

3. PROBLEM OF USING LOCAL GOVERNMENT BUDGETSFOR SMALL AND MEDIUM SIZED INNOVATIVE STARTUP ENTERPRISES

The Law on provision of assistance for small and medium – sized enterprises (2017) and the Decree 38/2018/NĐ-CP provides guidelines for using of local government budgets to make investments in startups as well as innovative startup investment funds. Based on the reality of local government budget, each People's Committee of the province shall send the People's council of the province a request for the decision on assigning state-owned finance organizations of the province, including the local financial agency is organized and operates in the form of an extra-budgetary fund or in the form of an enterprise,to invest in startups according to the following principles:

•The eligible innovative startup investment funds shall be selected to invest in creative startups;

•Investments from the local budget shall not exceed 30% of total capital raised from eligible innovative startup investment funds selected by the startups;

•The investments shall be transferred to private investors within 5 years from the day on which the stakes is contributed. The transfer of invesments shall comply with regulations of law on management and use of the state capital invested in business operation activities at premises of enterprises.

The local financial agency shall select innovative startup investment funds to jointly make investments. Aninnovative startup investment fund to be selected must: (1) make a commitment with the local financial agency to jointly make investments in small and medium creative startups, (2) have at least 01 year of experience in investing in startups; (3) be financially capable of making investments and (4) satisfy other requirements (if any). The local financial agency shall annually evaluate, amend and publish the list of selected innovative startup investment funds on its website and the website of Provincial Pepople's Committee. Within 5 years form the investment date, the local financial agency may carry out procedures for transfer of its shares or stakes in the invested startup to a private investor. Innovative startup investment funds that jointly make investments in a startup and existing shareholders of the invested startups shall be given priority to such transfer of invested capital.

However, it is recommended that the Vietnamese government should not utilize the state budget to invest directly in creative startup firms via state-owned finance organizations. The state budget should be used only to support and create better environment and conditions for creative startups, along with suitable tax incentive. The reasons are as the following:

•All state budget expenditures don't have direct refund feature. As a result, investing state budget directly in small and medium creative startup firms may lead to the inequality among investors of creative startups.

•Because investing in creative startups is risky, it is difficult to impute the blame to somebody if the state budget is used to invest in unsuccessful creative startups.

•The local governments investing in creative startup firms need a state-owned finance organizations of the province. However, what a state-owned finance organization is has not been shown clearly.

•The local financial agency shall annually evaluate, amend and publish the list of selected innovative startup investment funds on its website and the website of Provincial Pepople's Committee. But what are criteria to evaluate and choose? If the specific criteria could not be set up, there would be unequal among

creative startup investment funds.

In the market economy, international integration and the 4.0 revolution context, in order to promote creative startups for sustainable development, it is nescessary to support small and medium sized startup enterprises by the state government, but based on the market economy rule, such as consulting intellectual property (exploitation and development), support for applying technology transfer, support for creating criteria to measure and evaluate, support for testing new products and new business model, support for educating and providing information, support of infrastructure....Clearly, the state budget should be used to support innovative startup firms, instead of investing capital directly in firms. Direct investment could be executed by other investors, including creative startup investment funds.

CONCLUSION

Innovative startup investment funds provide essential financial source for creative startups. With investment specialists, it is easy for these funds to collect money from investors, including nonprofessional investors. When suitable mechanism for the development of creative startup investment funds is stipulated, it is possible for all investors putting their money in creative startups. The reason is that investors could invest in these funds without too much money and could diversify portfolio to reduce risks. Moreover, investors' rights and benefits could be protected under legal system.

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HOW TO FINANCE STARTUP BUSINESSES IN VIETNAM

Ta Thi Bich Thuy* - Trinh Van Tu**

ABSTRACT: *There are numerous financing sources available for startup businesses. The options and routes will vary from business to business, however in this paper, the author want to figure out some general financing methods available for companies looking to raise money. Moreover, I also lay out the difficulties and challenges to finance startups. From that, I bring out some solutions in order to make startups easier to access the finance sources.*

The main funding options include:

- Personal savings or from family/ friends;

- Bank loans;

- Venture capital- Hedge funds;

- Attracting an angel investor;

- Crowd- funding.

The difficulties and challenges of startups' financing consist of:

- Startup businesses' own problems;

- The situation of Vietnam's financial development;

- The problems of the financial system's external environment

The solutions of providing finance for new business contain:

- Diversifying Channels of Financing;

- Development of startup business's Credit Risk Databases, Credit Bureaus, and startup business Credit Rating;

- Startup businesses' Credit Rating.

Keywords: *startup businesses, new business, raise money, financing difficulty, financing solutions*

1. INTRODUCTION

Startup companies are newly founded companies or entrepreneurial ventures that are in the phase of development and market research. They are usually, but not necessarily, associated with high-tech projects because their product is mostly software which can be easily produced and reproduced. Additionally, technology-oriented projects, by their very nature, have the greatest potential for growth. An interesting fact shown by the research is that technology-oriented startups are typically located in major urban centres. The

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reason is attributed to the need for a market that exceeds the local level. However, there are more and more startup companies in traditional industries and business sectors. At the international level, there is more and more research associated with the importance and ways of financing entrepreneurial ventures (formal and informal), especially in the period of intense globalization.

Investors are looking for startups that will be very successful. But that test is not as simple as it sounds. In startup businesses, as in a lot of domains, the distribution of outcomes follows a power law, but in startup businesses the curve is startlingly sleep. There are a handful of angels who'd be interested in a startup company with a high probability of being moderately successful. But angel investors like big successful too. Therefore, there are many difficulties for young businesses in calling money from external investors.

The goal of this research is to answer three key questions:

(1) What are the alternative financing methods for startup business in Vietnam?

(2) What are the financing difficulties for Vietnamese startup business facing with?

(3) What are the financing solutions for Vietnamese startup business when raising money?

This study will make some contributions to the literature because the study will augment prior researches. Moreover, while we are of the view that Vietnam is on the right path to improve corporate governance, institutional capability, and build up key infrastructure that facilitates trade and investment, the development of startup companies will be very gradual in the recent years. In the development of startup companies, one of the most crucial steps is to raise money from the potential investors. This study will draw the substantial way to finance startup business under the circumstance of Vietnam. Additionally, this research will go deeper on the problems of financing difficulties of Vietnamese startup companies. From that, this paper will show some financing solutions for Vietnamese startup business when raising money.

2. LITERATURE REVIEW

One of the most important steps in starting an entrepreneurial venture is to ensure an adequate financing source. Analyzing the mobilization of financial resources, Kotha and George (2012) showed that entrepreneurs with previous experience in startups are able to raise more funds (from both formal and informal sources) compared to entrepreneurs without any experience. Startup projects and startup companies are most interesting to those investors who can significantly accelerate the development of the project or product through their investments as well as contribute to strong business relationships which investors tend to have and which are essential for the expansion of startup products. In his research, Atherton (2012) demonstrated that multiple factors influenced the decision of a startup founder on the financing source (formal or informal). At the same time, it is possible to observe very high disparity between the highly capitalized and undercapitalized startups. Finding investment funds to launch or expand a startup is one of the biggest obstacles faced by many entrepreneurs (Berger, Cowan, Frame, 2011). In their paper, researchers Paul, Whittam and Wyper (2007) proved that startup founders first turn to internal financing sources (their own funds), and afterwards they use external financing sources. Sometimes it is good to try to found startup companies independently, without third party investment, which is called bootstrapping (″to pull oneself up by one's bootstraps″). In reality, this is a very difficult task, but it is one of the foundations of entrepreneurship (Lopac, 2007) and represents a creative financing strategy (Lahm, Little, 2005). Bootstrapping (Worrell, 2002) implies that the entrepreneur has certain income at the beginning, which is only possible if the startup does not require a big investment and if no financial investment has to be covered by third parties. The advantage of this approach

is that entrepreneurs have full control of their company (lack of co-owners), while on the other hand, the drawback is that the entrepreneur can be in some kind of isolation if he/she is young and less experienced and there is no help from experienced partners and business contacts (Lopac, 2007). Many authors point out that bootstrapping is a method of transforming human capital into financial capital, which involves a certain level of investment from external sources (Lahm, Little, 2005). Freear, Sohl and Wetzel (1995) identified four types of bootstrapping. These are: 1) bootstrapping product development, 2) bootstrapping business development, 3) bootstrapping to minimize the need for (outside) capital financing, 4) bootstrapping to minimize the need for capital. A survey carried out on 214 startup companies showed that bootstrapping has a positive impact on increasing the added value for the company (Vanacker, Manigart, Meuleman, Sels, 2010). Recent studies show that the bootstrapping and lean startups are complementary approaches. This is confirmed by the fact that both approaches use techniques that seek to eliminate all surpluses through maximization of existing resources before investing more funds from external sources (Maurya, 2012). In addition to bootstrapping, there are other various sources of financing startup projects which are divided into traditional and new methods of launching startup companies.

3. METHODOLOGY

The main goal of this paper is to figure out the financing problems for startup business, including the main ways to raise money, the financing difficulties and challenges and the financing solutions for startup businesses. Apart from the Introduction, literature review, this research consists of three main parts. As the first part of this paper, the considerable funding options will be made, such as, personal savings or from family/friends, bank loans, venture capital- Hedge funds, attracting an angel investor and crowd- funding. Subsequently, the difficulties and challenges of startups' financing under the circumstance of Vietnam will be presented, followed by the solutions of providing finance for new business.

It is highly likely that the organizing system of dialectical materialism and historical materialism in social science research are two vastly remarkable methodologies which are applied in this research. Additionally, the methodology of statistical analysis is also a substantial system. The gathering of information will primarily be focused on sources, which are publicly available such as the annual reports and the homepage of some prestige websites: http://tapchitaichinh.vn, http://viz.start.vn, http://startups.co, http://angel.co, http://khoinghieptre.vn, http://vietnamfinance.vn, different external articles, stock analyses and statistics. Theoretical articles and additional information concerning the financing field will be retrieved through the national library of Vietnam. Further, the applied theory and approaches are taken from material used at lectures at Banking Academy of Vietnam.

Moreover, the method of statistics and the methods of synthesis, analysis and comparison are employed.

4. ANALYSIS

4.1. The main funding options:

In recent years, along with the development of startups companies, startups are playing an important role in the development of the developing countries like Vietnam, and become a significant part of propelling economic and social development. According to the General Statistics Office of Vietnam, in the first 5 months of 2018, there were 52,322 registered enterprises in the whole country with a total registered capital of VND516.9 trillion, increase 3.5% the number of enterprises and 6.4% increase in registered capital over the same period of 2017.

4.1.1. Personal savings or from family/ friends

A common method of providing finance for startups is calling for money from your personal savings in order to fund the setup of the company. Family and friends often bring additional financial support in the early stages of your company, when getting external funding, such as, from bank, funds, etc… can be particular difficult for a young business because of their lack of experiences.

4.1.2. Bank loans

An additional option for financing new businesses is bank loans. There are two main categories of loans are secured and unsecured loans. Secured loans use the company assets are security, such as, a car, real estate and property based on the amount borrowed, which can be repossessed should company be unable to repay bank loans. This way brings more security for the lender and therefore the interest rates are often lower than other methods.

However, unluckily, a lot of businesses can't access the bank loans because they do not have the necessary assets in order to make a security to obtain this kind of loan.

On the other hand, unsecured loans do not require a form of security but require a personal guarantee based on credit rating. But, the startups' owner often lacks of experiences and has no famous brand-name, this is difficult for them to gain high trust of bankers. Additionally, the interest rates that the banks require are often higher than secured loans. Therefore, even this method is really interesting because of no need for assets to make a security, this way can be hard for new businesses to gain money from banks.

With these loan categories, you can acquire term loans where you borrow a fixed amount of money at a certain interest rate over an agreed time period. Short-term loans are similar but with a much shorter time period and often higher interest rate.

4.1.3. Venture capital- Hedge funds

You can pitch your business to the venture capital firms or the hedge funds to gain financial support in exchange for equity in your new business. This method brings a lot of benefits of potential gaining investors who can provide advice and expertise for your new business.

However, one of the pitfalls of gaining venture capital is the competitive nature of the industry, which can make it difficult to convince firms to financing your company. The venture capitals are often interested in fast- growing startups which seem to be stable and lower risk than less established new businesses.

Examples of venture capital in Vietnam include….Dragon Capital, Mekong Capital, IDG Venture, Vina Capital Foundation (VCF), CyberAgent Ventures (CAV), DFJ VinaCapital, Kusto Vietnam, Prosperous Vietnam Investment (PVNI)**, FPT Ventures, Golden Gate Venture, etc…**

4.1.4. Attracting an angel investor

Angel investors are often known as high-net worth individuals who want to invest their personal money and make their own decision about investment opportunities. Angel investors often provide less finance than a venture capital firm but have the potential to bank riskier undertakings. Also like venture capitals, angels can bring many aids of potential gaining investors who can provide advices and expertise for your new business. In general, this type of financing is considered as a good place for new businesses to think about when they need to call for money from outsides.

In Vietnam, we have a Vietnam Angel Investors Network named iAngel. IAngel aims to creating a powerful community of angel investors with various business backgrounds, selected data of investment-ready startups to grow up startups and contribute the development of the Vietnamese startups ecosystem.

Vietnamese IAngel community has the commitment for development of 9 organizations in Vietnam, including: Capella Vietnam JSC, Hanoi Young Business Association (Hanoi BA), Innovation Hub JSC, Startup Vietnam Foundation (SVF), Songhan Incubator, Angels 4 us, BK holdings JSC, Viet Management Consulting Group (VMCG), National Startup Consulting and Investment (NSCI). Particularly, iAngel Network is supported by the top 3 top donors of startups and entrepreneurship in Vietnam: Vietnam-Finland Innovation Partnership Program phase 2 (IPP2), Mekong Business Initiatives (MBI) and Swiss EP.

4.1.5. Crowd- funding

There are various forms of crowd-funding with the most relevant for funding startup businesses including: peer-to-peer lending, peer-to-business lending, reward-based and equity crowd-funding.

- Peer-to-peer lending involves investors lending money to an individual for a fixed interest rate.

- Peer-to-business lending is similar to peer-to-peer lending but with loans for businesses, instead of individuals, via investors, companies and government institutions.

- Reward-based crowd-funding allows new businesses to receive funds in exchange for giving investors a reward, such as, a sample of new businesses' products or an event.

- Equity crowd-funding is similar to reward-based crowd-funding but instead of providing capital for rewards, startups offer shares (equity) in their business in exchange for investment.

Deciding which crowd-funding model is right for startups is dependent on business's stage and how much company needs to raise up.

In Vietnam, people have some website for startups to call for money from this method: betado.com (IG9.vn), comicola.com, firststep.vn, fundingvn.com, fundstart.vn, etc…

4.2. The difficulties and challenges of startups financing

Accelerating the development of new businesses has been widely recognized by Vietnamese society. Consequentially, people begin to pay more attention to financing difficulties, which restrict the development of startups. In order to resolve the problem, the Vietnamese government and some financial institutions have made great efforts in reducing the pressure faced by startups. However, the problem and hurdles still exist. Getting funds from banks is the first choice for many new businesses. Very few startups chose other financing channels, including borrowing from their friends and usurious loans. In addition, banks are short of incentives to help startups, because the new businesses' financing scales are not large enough.

The financing difficulty of new businesses is a worldwide issue. The adverse selections problem and moral hazard caused by asymmetric information usually happen to formal financial institutions, because new businesses cannot provide complete financial information and effective mortgages. Moreover, during the process of economic and political reform, Vietnamese startups are restricted by several factors, including the government intervention, weak legal system, and the incompleteness of financial system. Facing the difficulty of receiving formal financing, new businesses have to pay attention to the informal financial market. However, it not only has increased startups' financial cost, which will have a negative effect on the development of new businesses, but also will raise the potential risk of the whole financial system. Therefore, this paper has a significant meaning in exploring the causes of financing difficulties of Vietnamese startups.

4.2.1. Startup businesses' own problems

Firstly, the scale of startup business limits their borrowing capacity in the financial market. Generally, the production scale and owning capital of startup businesses are relatively small.

Thus, startup businesses cannot get enough funds due to lacking of effective mortgages. In addition, most of startup businesses are still influenced by the traditional family-own management mode. Some startup businesses are short of necessary financial management, information openness and high-level credit, which cause banks to have a huge cost of supervising startup businesses. Besides, during the process of expanding, startup businesses often face problems such as lacking of management experience, and uncertainty of technology and market. Therefore, startup businesses usually have characteristics of high birth rates and high mortality, and the loans offered by banks will face high risk.

Comparatively, large enterprises have obvious advantages in several aspects, including financial information, credit rating, and accessible mortgages. Hence, banks will have a relatively low cost for searching the fund receivers' information and supervising large enterprises. In other words, banks will face a relatively low risk if they choose to provide large firms with funds. In order to lower the risk of offering funds, banks will choose to reduce the amount of funds startup businesses request. The risk is raised from asymmetric information. Due to the existence of asymmetric information, adverse selection will appear in the financial market. Once the adverse selection appears, in order to eliminate negative effect, banks will refuse to determine interest rates according to the level of risk. Rather, banks will establish lending conditions according to the information they have for enterprises. It is clear that under the formal financial system arrangement, the relationship between banks and enterprises changes into the situation that banks will prefer to provide large firms with funds and refuse to offer loans to startup businesses. Quitting from the startup businesses credit market becomes a rational choice for banks, because in this way banks are able to avoid risk and achieve profit maximization.

4.2.2. The situation of Vietnam's financial development

Financial development could improve the efficiency of financial system, reduce significantly the level of asymmetric information that exists between banks and startup businesses, help financial institutions process credit evaluation, and identify potential investment opportunities. However, the laggard financial development causes the probability of returning loans to become lower and lower, while the risk of providing enterprises with capital becomes larger and larger. Hence, the credit constraints phenomenon is obvious in the startup businesses credit market.

a. The reform of Vietnamese financial institutions still has the characteristics of financial restraint. It is confined to strengthen internal management and pays less attention to the institutional transformation. Nowadays, Vietnamese financial reform mainly focuses on the extension, such as establishing new branches, introducing new financial instruments and opening up new markets. However, facing with more serious problems that may impact the existing institutional framework and financial order, such as the admittance and development of small and medium-sized private financial institutions, the government is unhelpful, and avoids giving out specific plan on this area. Although there are some new financial arrangements already released, there are no meaningful and substantial changes happened in the content of these arrangement. At present, the monopoly situation among state-owned banks still exists. The control of interest rate and the business pattern of financial institutions have not changed radically.

First of all, the four major state-owned banks have comparative advantages on the share percentage of deposit and lending market. Small and medium-sized commercial banks, which can provide startup businesses with financial service, only make up a small portion. The financial system, which is dominated by

major state-owned banks, has the responsibility of managing the national macro-economy. The ownership discrimination and credit preference problem still exist, and banks have preference of providing large enterprises and projects with financial aids. Meanwhile, due to the inherent shortages, startup businesses lack of viable financial channels even though they have plenty of investment opportunities.

Secondly, Vietnamese government has controlled the setting of loan interest rates bottom limit and deposit interest rate cap limit for a long time, which can maintain necessary loan-to-deposit spreads, help limit price malignant competition among banks, give reasonable protection to banks' profits, and leave more time to improve financial industry competitiveness and the efficiency of overall economy and finance. However, due to the control of interest rates, banks make considerable profits because of the large interest rate spreads between loan interest rate and deposit interest rate. Hence, banks will be satisfied with their situation and pay less attention to improve their own competitiveness.

b. The government attaches great importance to improve financial intermediaries and pays less attention to financial market. And the government is prudent to develop capital market. Hence, the multi-level capital market cannot be established. The direct consequence of this type of industrial structure is that Vietnamese financial service functions and risk management function are both weak. Meanwhile, social financing structure becomes single and relies more on bank loans. Consequently, enterprises have to raise funds mainly by indirect financing channels.

At present, Vietnamese capital market is still unenlightened, financial transaction is simple and hard to satisfy needs of different scale enterprises. Additionally, it is pretty hard for startup businesses to get the right of issuing public stocks and enterprise bonds. Though Vietnam has experience of western developed countries for reference and established startup businesses' board market that provide startup businesses with financial service, especially for startup businesses' financing, the market's listing requirements are too rigorous for startup businesses to enter the market. Hence, for most startup businesses, they are unable to enter the market, because they cannot meet the requirements for operation scale, information transparency and operating capability. From the enterprise bond market, we can see that startup businesses are hard to get opportunities to issue enterprise bonds, because issuing enterprise bonds is strictly controlled by the government. Lacking of multi-level capital market causes startup businesses to rely on indirect financing channels such as bank loans.

4.2.3. The problems of the financial system's external environment

For a long time, Vietnam's economic marketization reform is mainly controlled by the Vietnamese government. After implementing the tax reform, the local government's ability of controlling resources shows an increasing trend. Local government officials not only pay attention to the increase of fiscal revenue, but also focus on the GDP growth to get promotion. In order to get enough fiscal revenue and get advantages in political promotion, government officials only care about the short-term economic growth during their tenure. Hence, large enterprises and projects become preferences of the local government. The local government often chooses to offer land as mortgages, and provide enterprises with implicit guarantees to control the allocation of financial resources and support their preferences, which makes startup businesses face a more difficult financing situation.

Besides, the local government will put a large number of resources in economic construction fields under the drive of fiscal revenue and performance examination, but put fewer resources in credit construction and legal environment, which help maintain a healthy environment for economic development. Therefore, it is no doubt that startup businesses face a difficult situation in financing.

4.3. The solutions of providing finance for new business

4.3.1 Diversifying Channels of Financing

In this section I want to figure out three different methods for startups' financing: the development by governments of credit guarantee schemes, specialized banks for startups, and community-based financing schemes, e.g. hometown investment trust funds for financing risky startup businesses.

a. Development of Credit Guarantee Schemes by Governments

Owing to the significance of startups to Vietnamese economies, it is important to find ways to provide them with stable finance. In order to remedy the undersupply of credit to startups, various government and donor initiatives have emerged in both developed and developing and emerging economies, including the so-called credit guarantee scheme. The public guarantee scheme is a tool aimed at reducing the gap between supply and demand in startups' finance. Credit guarantee schemes have been used for decades in many countries and in various forms as a way to increase the flow of funds into targeted sectors and groups. The purpose of the creation of such a scheme is to contribute to the flow of funding into sectors that have difficulty raising funds, including the startup businesses sector. A credit guarantee scheme makes lending more attractive by absorbing or sharing the risks associated with lending to the targeted sector. Such schemes can also increase the amount of loan funds available to an enterprise beyond its own collateral limits, because the guarantee is a form of loan collateral. However, guarantee funds have a cost, which is paid through the fees charged and/or subsidized by the government or by a third-party institution. If the government covers 100% of the startups' default costs and absorbs the full risk, then lending institutions will not monitor and analyse the healthiness of the borrowers, because their risk is covered by the government. Thus it will increase the non-performing loans in the banking sector and reduce the productivity of the public reserves. Hence, a partial credit guarantee scheme may be the optimal case scenario. A credit guarantee scheme consists of at least three parties: a borrower, a lender, and a guarantor. The borrower is often a startup business, seeking debt capital. This borrower typically approaches a private financial institution (bank) for a business loan. For reasons of asymmetry of information, the loan request will frequently be turned down by the private lender. This is where the guarantor comes into the picture. The guarantor (Credit Guarantee Corporation), usually a government or trade association, seeks to facilitate access to debt capital by providing lenders with the comfort of a guarantee for a substantial portion of the debt.

b. Specialized Banks for startup business Financing

That is a good idea of thinking about establishing a specialized private bank for startup businesses' financing. This type of banks is deposit-taking cooperative banks that specialize in financing startups within a region. Just like city banks and regional banks, banks for startups are protected by deposit insurance and subject to capital adequacy requirements and other banking regulations and supervisions. Unlike city banks or regional banks, however, banks for startups provide loans mainly to new businesses.

c. Development of Hometown Investment Trust Funds for risky startup businesses

Given that Vietnamese financial systems are dominated by banks, the creation of community based funds (or hometown investment trust funds) to promote lending to startup companies and riskier borrower, would help to maintain the soundness of the banking sector, as banks would not be exposed to the risks that lending to such companies inevitably poses. Selling those community trust funds through branch offices of regional banks, post offices, credit associations, and large banks would increase funding sources for startup companies and riskier borrowers.

Such trust funds would not be guaranteed by a deposit insurance corporation and the associated risks would be borne by investors. The terms of a trust fund would have to be fully explained to investors, such as where their funds would be invested and what the risks associated with the investment would be, in order to strengthen potential investors' confidence and help expand the trust fund market.

A hometown investment trust fund has three main advantages. First, it contributes to financial market stability by lowering information asymmetry. Individual households and firms have direct access to information about the borrowing firms, mainly startups. That they lend to. Second, it is a stable source of risk capital. The fund is project driven. Firms and households decide to invest by getting to know the borrowers and their projects. In this way, the fund distributes risk, but not so that it renders risk intractable, which has been the problem with the "originate and distribute" model. Third, it contributes to economic recovery by connecting firms and households with startups that are worthy of their support. It also creates employment opportunities at the startups as well as for the pool of retirees from financial institutions who can help assess the projects.

The main differences between the hometown investment trust funds and conventional crowd-funding or venture capital is the "warm feeling" that is behind the hometown investment trust funds, because investors sympathize with the company/project owners and their efforts and are not solely seeking profit, while in crowd-funding and venture capital the investors are solely seeking financial profit.

4.3.2. Development of startup business's Credit Risk Databases and Credit Bureaus

Given the importance of startups to many dimensions of Vietnamese economic activity, further efforts are needed to offer them access to finance. Their financial and nonfinancial accounts are often difficult to assess, but the Credit Risk Database shows how startups can be rated based on financial and nonfinancial data. The Credit Risk Database includes a huge amount of data that can be used to rate Startup businesses through statistical analysis.

The National Credit Bureau is well-known among debtors, businessmen, and startups can be established as the organization that collects and processes the credit information of the clients of financial institutions. However, not many people know exactly what the responsibilities and duties of the National Credit Bureau are. Some people believe that the credit bureau can place people on a blacklist, or that it sells credit information to telesales businesses, and most people believe that the credit bureau is responsible for credit rejections.

4.3.3. Startup businesses' Credit Rating

Credit ratings are opinions expressed in terms of ordinal measures reflecting the current financial creditworthiness of issuers such as governments, firms, and financial institutions. These ratings may be regarded as a comprehensive evaluation of an issuer's ability to meet their financial obligations in full and on time. Hence, they play a crucial role by providing participants in financial markets with useful information for financial planning. To conduct rating assessments of large corporates, agencies resort to a broad range of financial and nonfinancial pieces of information, including domain experts' expectations. Rating agencies usually provide general guidelines on their rating decision-making process, but detailed descriptions of the rating criteria and the determinants of banks' ratings are generally not provided.

5. CONCLUSION

Startup businesses play a significant role in Vietnamese economies as they are responsible for very high shares of employment and output in all Vietnam. However, in the bank dominated financial systems in Vietnam,

Startup businesses have difficulty accessing cheap finance. Banks are cautious about lending to Startup businesses even though such enterprises account for a large share of economic activity. Startup companies, in particular, are finding it increasingly difficult to borrow money from banks and the strict Basel III capital requirements have made the situation more difficult. Riskier Startup businesses also face difficulty in borrowing money from banks. It is difficult for banks to evaluate Startup businesses since they often do not have solid accounting systems and their credit risk is not obvious for lending institutions. Many Startup businesses in Vietnam borrow money by paying high rates of interest or offering costly collateral, which hinders their growth.

Many banks prefer to allocate their resources to large enterprises rather than Startup businesses. The reason for this is that for large enterprises the financial statements are clearer. Startup businesses are mainly riskier from the point of view of lenders as they do not have clear accounting information. This paper highlighted Startup businesses' difficulty in accessing finance, and, with a view to easing the financing of Startup businesses, provides three methods for diversifying channels of finance. These three methods are the development of sustainable credit guarantee schemes by governments, specialized banks for Startup businesses, and community-based financing schemes, i.e. hometown investment trust funds for financing risky Startup businesses.

One of the major requirements for making Startup businesses' credit risk transparent for lending institutions and for credit guarantee corporations is having a nationwide credit risk database. If such systems could be established in Vietnam to accumulate and analyzes credit risk data, and to measure each Startup businesses credit risk accurately, Startup businesses would not only be able to raise funds from the banking sector, they could also gain access to the debt market by securitizing their claims. The establishment of a Credit Risk Database could be a medium-term infrastructure target in Vietnam.

In the short run it is possible to implement various methods for measuring the credit risk and assessing the credit rating of Startup businesses. These methods could be used by lending institutions, credit guarantee corporations, or independent local rating agencies, using data regarding Startup businesses.

Finally, it is important for the developing countries, particularly in Vietnam, startup businesses' represent the main parts of their economies to diversify channels of financing of Startup businesses. The developing countries also need to accumulate the Startup businesses data in a nationwide database for categorizing Startup businesses based on their credit worthiness. Those who are ranked higher get higher credit guarantees from the government at lower costs, so that they can be successful. They will have a significant role in job creation and in production. In addition, those that are risky should avoid borrowing from banks, because if they use bank loans it will cause nonperforming loans. For promoting startups and riskier Startup businesses, community-based lending such as hometown investment trust funds, which are explained in this paper, is a suitable solution.

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DEVELOPING ANGEL INVESTORS' SYNDICATES AND NETWORKS FOR THE ENRICHMENT OF THE STARTUP ECOSYSTEM IN VIETNAM

Nguyen Thi Van Anh*

ABSTRACT: *In recent years, a lot of efforts have been made by both private and public sectors to build up an appropriate ecosystem for startups in Vietnam. They mainly give direct supports to startups and the incubators where startups are incubated. Most have forgotten another element in the startup ecosystem, angel investors, who are considered the starters of the startup capital lifecycle. Angel investors are very important for startups as they provide not only capital resources but also skills, expertise, and important contacts. However, one of the characteristics of angel investors is that they like to remain anonymous and are more difficult to reach than normal investors. To solve this problem, many countries successfully established angel investor syndicates and networks to facilitate the process of matching entrepreneurs and angel investors. With the current deficient state of angel investors both in terms of quantity and quality, there is urgent for the Government to build, develop, and maintain effective networks and syndicates of angel investors for the enrichment of the startup ecosystem in Vietnam.*

Keywords: *angel investment; syndicate; network; financial investments; startup; entrepreneurship; capital lifecycle*

1. INTRODUCTION

The term "angel investor" was first used in the art sector during the end of the 19th century. Directors, actors, screenplay writers depended on rich investors to finance production of new musicals and plays, their projects, or careers (Veland, 2012). Gradually, angel investors became known as a financial source for risky, but promising ideas and projects. Since then, many companies such as Apple Computer, Amazon.com, Google, and Facebook received supports from to angel investors in terms of finance, expertise, and experience.

Academics have come up with several definitions for angel investor such as definition from Fiti et al., (1999), angel investors are individuals that have available financial means and are ready to invest in *entrepreneurship ideas*. Mason and Harrison (Mason and Harrison, 2008) define angel investor as "an individual, acting alone or in a formal or informal syndicate, who invests their own money directly in an *unquoted business* in which there is *no family connection* and who, after making the investment, *takes an active involvement in the business*, for example, as an advisor or member of the board of directors". From these definitions, *angel investors can be understood as individuals who possess wealth and industry experience and are willing to invest them in early-stage firms/ startups in order to help the young entrepreneurs and receive profit simultaneously*. Angel investors have some distinct characteristics that set them apart from other investors. These characteristics include wealth possession, funds for investment coming from their personal assets, diversified areas of expertise, rich of business experience, and especially, willingness to take risk.

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Angel investors are becoming more and more important in financing startups, especially during early stages of development. In developed countries like the United States (US), Canada, or European countries, the growth of investments from angel investors can be seen both in terms of quantity and quality. According to Veland (2012), there are 300.000 - 350.000 active angel investors in the US, who invest USD 30 billion per year in around 50.000 projects. In the United Kingdom (UK), there are 20.000 - 40.000 angel investors who invest 0.5 - 1 billion pounds per year in 3.000 - 6.000 companies. Along with the increase in quantity and quality of angel investment, angel investors are becoming more and more important for the startups' capital lifecycle.

What's more, not only money, angel investors also bring in their expertise and know-how, and due to this reason, angel investors are more and more "interesting" for entrepreneurs in comparison to other sources of capital. Angel investors with their experience, relationships, and network of contacts in the business are gold mines for startups for the commercialization and survival of their business ideas.

According to Preston (2004), companies in their development pass through several stages such as:

- *Seed stage:* the entrepreneur has an idea or concept for potential profitable business, which needs to be developed and proven. In this stage, financing sources can be used mainly come from savings of founders, family, and friends (also called 3F Money);

- *Startup stage*: the idea has been already developed up to the level which allows commercialization. This stage lasts for less than a year. In this phase, angel investment can be used as financing sources;

- *Early stage*: in this stage, production and distribution of a specific product or service takes place. This stage lasts up to five years, and business can still be unprofitable. Usually, formal venture capital can be used as financing sources;

- *Later stage*: In this stage, the enterprise is already mature and profitable, and it continues broadening. With high growth, it can become publicly famous. Initial public offering is an ideal opportunity to generate additional funds.

In the US, 55% to 72% of angel investors invest in startup stage enterprises. Similarly, in the UK, 50% to 65% of angel investors invest in these types of enterprises. The reason angel investors prefer startups is because with these companies, angel investors can have an important and active role before they are opt out from the market. Some others prefer startup enterprises because they represent a real challenge for them or simply, it is their personal interest.

However, the process for startups to meet suitable investors is not simple as angel investors tend to remain anonymous or within close circles. To help startups and early-stage enterprises to tackle this problem, many countries have set up angel investors' syndicates and networks to bring investors and startups together, sharing risks, and increasing the success deal rates.

2. OVERVIEW OF ANGEL INVESTORS' SYNDICATES AND NETWORKS

Angel investors' syndicates are associations of angels, who combine their capital, experience and knowledge in order to share risk and invest in better and bigger deals. The first ever syndicate, Band of Angels, was established in Silicon Valley (US) in 1995. Since then, there have been many angels' syndicates establishing in the US, Europe, and other countries. Angels' syndicates were found as investors found advantages of working together as this brings greater flow of investment opportunities (deals), better decision, ability to make more and larger investments, and sharing risks.

Angels' syndicates can be managed by either a professional manager or by members themselves. Each method of management has its pros and cons needed to be considered. If using a professional manager, the manager will manage all aspects of the syndicate, such as looking for interesting deals, analyzing and evaluating them, and recommend the syndicate to invest on potential deals. Manager can be paid through salary, enjoying part of the profits of a successful deal, or a combination of these. Syndicates managed by their members elect the most prominent members to manage the syndicate. In most cases, these members manage the syndicate without any compensation. These members are bound to find interesting deals, to evaluate them, and to present them to the other syndicate's members to invest in (Veland, 2012).

Some syndicates organize meetings once a month, while some have meetings every week. They are more in the form of a joint dinner at which syndicates' members discuss specific investment opportunities, their characteristics, and so on. At these meetings, 1-3 entrepreneurs could be invited to attend. They will present their business plans, under which angel investors would decide whether to invest in their enterprises.

Angel investors, besides forming syndicates to raise their relevance and efficiency establish their own networks as well. *Angel networks are organizations whose main goal is to connect owners of small and medium enterprises and angel investors, or they are organizations which facilitate the process of connecting entrepreneurs and angel investors*.

Veland (2012) has concluded two approaches for establishing networks of business angels, namely top-down approach and bottom-up approach. Top-down approach is used when public authorities initiate the establishment of the network. In cases where the private sector initiates the establishment of a network, that approach is known as bottom-up approach. Such is the case with the Danish biotech network. Angel investors of existing regional networks identified a lack of investment opportunities in bio-technology sector, and therefore developed a new network with his specific activities and own management team (Gullander and Napier, 2003).

3. THE NEED TO DEVELOP ANGEL INVESTORS' SYNDICATES AND NETWORKS IN VIETNAM

According to the National database on business registration and the Ministry of Planning and Investment in 2016, there were 110.100 newly registered startups in Vietnam, by the first half of 2017, there were 72.953 new companies registered and this figure is increasing rapidly. However, not many startups were successful in turning their ideas into real products with only 28 startups did otherwise. Failure of startups in Vietnam is mainly caused by the *lack of practical experiences* in running business and *difficulty in accessing capital sources*, particularly the early stages of business. A lot of efforts have been made by both private and public sectors to build up an appropriate ecosystem for startups in Vietnam. However, they mainly give direct supports to startups or/and the incubators where startups are incubated. Most have forgotten another element in the startup ecosystem, angel investors, who are considered the starters of the startup capital lifecycle.

Angel investment environment in Vietnam is in early stage of development with few numbers of investors, lack of awareness of angel investing, close-circled activities, and limited areas of interest. Though the investment market in Vietnam is gradually formed and catching up to the general trend in the world with successful deals recently like Vatgia, VMG Media, the Kafe, with investment of tens or even hundreds of million dollars. However, *there is not an angel investor community in Vietnam*. Not to mention the angel's activities are close-circled and not popular in ecosystem.

There are currently two investor networks in Vietnam who have been paying attention to angel investment. However, their areas of interest are limited and the activities are few. HATCH! Private investor network - HATCH! ANGEL - an initiative of HATCH! PROGRAM, Vietnam's first entrepreneurship

community operating since 2013 with mission to create a platform for angel investors to share knowledge and experiences in investment, and to facilitate the investment relations with startups but the activities just stay at few meetings between investors and startups a year. VAIC (Vietnam Angel Investors Circle) is a Delaware-based LLC with the vision of nourishing, empowering, and inspiring a new generation of Vietnamese entrepreneurs. VAIC seeks to provide seeds and angel capital to budding entrepreneurs to take their businesses off the ground via the Manipadhum LP investment fund in exchange for equity. However, their members are lessened when some of them do not see the investment success.

In terms of characteristics, angel investors in Vietnam have some problems which hinder their involvement in the process.

- *Lack of awareness that angel investing is an active process:* Investors in Vietnam tends to be passive in the investing process as general, and the angel process to be specific, while the best practice is to be active. They are not used to participating in deal screening, undertaking due diligence, and direct mentoring with investees.

- *Low risk tolerance:* Angel investing is high-risk as startup is only at the idea or startup stage, but risk tolerance is low among angels in many countries, including Vietnam. Investors tend to be scared of the risk might come.

- *Close-circles activities:* Some source their potential businesses from startup incubators that they have close connections. Others, for example, IDG Venture Vietnam mainly depends on personal channels to search for potential startups. If a startup wants to find an angel investor, they will have to actively seek and grasp opportunities. The number of successful transactions, therefore, is very few.

- *Not wanting to be visible:* Angels are typically private about their investments, and can seem "invisible" to entrepreneurs. This hinders the match making process when entrepreneurs do not know how to connect with investors that could be interested in his or her company.

- *Limited areas of interests:* Angel investors in Vietnam are mainly interested in businesses related to Information Technology (IT), because these businesses do not require much capital in their early stages, while the potential of business value is enormous in case of success. For businesses in other areas or important technologies such as bio-technology or pharmaceuticals, attracting the attention angle investors is a huge challenge; because the initial investment is quite high (for workshops, laboratories, equipment) and the potential profit is not attractive enough to investors, which is another obstacle in develop a comprehensive startup ecosystem.

- *Lack of knowledge about startup nature and the portfolio effect in investment to startups:* It is studied that out of every 10 startups funded, only 2 successes at 10x returns or better, 5 reasonable returns at 2x to 5x and 3 write-off and total loses of invested money (Seedfund magazine, 2017). Therefore, if the angel investors do not diversify their investment portfolio, the chance that investment will fail is very high and they will not be confident to do more investment. Consequently, the startups still cannot access these funds and fail in their business.

This slow development of angel investor environment in Vietnam is from several reasons such as undeveloped market of capital (stock exchange), small number of domestic and foreign investors, bigger risk for investment, untrained and inexperienced management, corruption, inefficient regulative, unfavorable tax treatment for this kind of investment, and bureaucratic-administrative obstacles (EBRD, 2006). In other word, the future development of angel investment in Vietnam needs more improvements in terms of

economic, legal, and social. These solutions require timely and overall actions, during which investors and enterprises could have lost their opportunities to meet and success.

In an environment like this, it is essential to establish a community of angel investors equipped with knowledge and skills related to startups investment and have periodical meetings/ matching with startups, contributing to develop the startups ecosystem in Vietnam. The community can be built via the establishment of angel investors' syndicates or networks either by the initiation of the Government or the investors themselves.

With the current state of Vietnam startup ecosystem, it is better for the Government to take the initiative to help with the establishment of angel investors' syndicates and networks in Vietnam. Thus, the startup ecosystem can be enhanced as the interaction and connection among elements are better, increase both funding capacity and investment capability of the community, and the foundation of the startups capital cycle – angel investment is certainly stronger.

4. THE GOVERNMENT'S ROLE IN DEVELOPING ANGEL INVESTORS' SYNDICATES AND NETWORKS

The Government has been playing a key and leading role in the development of the startup ecosystem in Vietnam. The establishment of various startup incubators with the political direction for "Startup Nation" is a clear evident for the commitment of the Government for the private economy. With the current deficient state of angel investors in Vietnam, it is believed that the public authorities should take the initiative to enrich the angel investment environment by bringing in angel investors' syndicates and networks.

To do this, one can look at some examples of successful syndicates and networks set up by public authorities from other countries in the world. Europe (EU) has many national associations, notable ones such as the European Business Angel Network (EBAN) and Business Angels Europe (BAE). The Danish government has initiated a National network (DMBA), and after that DMBA helped the building of several regional networks. In Spain, there is a special program to support the creation and development of angel networks operating since 2010.

Developing and maintaining effective angel syndicates or networks are challenging in any environment. It will only get harder in a country with capital flow of small quantity and quality and low investor protection like Vietnam. Looking at successful examples from the above countries, some measures could be taken as first steps for the Vietnamese authorities to develop angel investment environment.

The authorities first need to promote the role and meaning of angel investors in Vietnam. Then, the development of the stock exchanges in the direction of more relax towards new successful companies needs more attention. And finally, the authorities could boost angel investment by means such as tax and other incentives.

First, in order to promote the role and meaning of angel investors in Vietnam, *the authorities should first raise awareness of current investors, academic, business, and public of angel investment*: In Vietnam, angel investment is not widely known, not to mention appreciate. It is necessary to increase the parties' awareness about the subject via holding seminars, workshops, consulting, publishing of scientific and professional papers, where the advantages and disadvantages of this way of financing will be explained.

Second, the authorities should exercise more liberal conditions for new successful companies in the stock exchanges – investors would be more secured to invest in new businesses if they see a "way-out" for their angel shares and the stock exchange is a great place to start. The stock exchanges could exercise more liberal conditions for quoting for successful new companies. When the startups have reached the *early* and

later stage of development, being able to list in the stock exchanges could help angel investors "exit" if needed or raise more funds for the companies. Moreover, the stock exchanges should offer a special service which would collect the purchasing and selling prices of shares from different dealers and represent them to the potential investors. Later, investors would close their transaction through computers, without being linked to brokers. NASDAQ, Reuters, Telerate, and Bloomberg work based on these principles.

Third, the authorities could offer tax incentives and other incentives to encourage angel investment: Tax incentives for first few years of investing would be helpful to encourage angel investment. This could be considered as the Government is sharing the risks with angel investors when investing in new small businesses. However, a clear definition of angel investment by the Government is needed together with a system of angel investment assessment to authorize this activity. The UK angel market has been uniquely supported by a major tax relief scheme (EIS and SEIS). The EIS scheme has been in operation for a good twenty years showing the extent and depth of government support for business angels. The SEIS scheme has been established more recently to substantially kick start angel investing in seed companies. While tax incentives for active angels seem to be the best solution, other nations have established different methods to stimulate the angel scene. Germany has established a grant for business angel investments in 2013. The INVEST Zuschuss für Wagniskapital provides a 20% tax - free subsidy on the investment in a young, innovative company. Similar actions could be done in Vietnam with the authorities acting as the leader calling for grant from major corporations and investors for this type of grant.

5. CONCLUSION

The ecosystem in Vietnam has been developing towards technical supports to startups and startup incubators, rather towards a key element in the startup capital lifecycle which are angel investors. Angel investors are becoming more and more important as financial, skills, knowledge, and network resources for new companies. However, the angel investment environment in Vietnam is still in early development as the angel investors are lacking of angel investing knowledge and experience, limited areas of interest, low risk tolerance, and limited network of contacts. These problems could be limited via the establishment of angel investors' syndicates and networks. And to do that, the Government in Vietnam needs to play a central role in the direction of the syndicates and networks' development toward a better angel investment environment, and a better startup ecosystem as a whole.

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THE ROLE OF INNOVATION IN STRATEGIC DEVELOPMENT OF SUSTAINABLE TOURISM IN INDONESIA

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Abstract: *This study aims to assess the current situation regarding the sustainable aspect of the Indonesia tourism market and also to identify innovative products which can be regarded as sustainable. One of the main objectives is to examine to what extent such products can influence the market and also to be an important tool for the tourism specialists to develop proper strategies. A secondary statistical data was used regarding the touristic activity in Romania and the tourism contribution to the national GDP. Ecotourism plays an important role for the economic development of some destinations, as in the case of the two destinations that are labeled as Ecotourism Destinations and in the case of another eight which will follow the same pattern. As a result, there are proposed strategic objectives with correspondent measures for creating an appropriate marketing and development plan and for obtaining a better promotion strategy. This study has revealed a series of innovative products and pattern to develop a sustainable destination and site by applying certain rules.*

Key words: *Innovation, sustainable tourism, strategic development, tourism*

INTRODUCTION

Currently, Indonesia sustainable tourism destinations are increasingly affected by the new strategic challenges posed by innovative technologies and often related to tourist consumer behavior and environmental pressures (Assaker and Halak, 2013). In order to address these challenges, destinations first have to analyze the global trends and then respond proactively, strongly emphasizing that innovation is extremely important, even indispensable to evolution. Recently, the objective of sustainable tourism that supposed to be achieved should be clear and explicit (Buhalis, 2000; Hunter and Green, 1995).

Though, there is no standardized way to reach such a goal. In spite of that there must be developed a strategy and an action plan for sustainable tourism of useful measures to ensure effective and coordinated steps on the road for achieving the goal. This is also one of the best provided approaches that include the involvement of all major interest groups and have an interest in establishing sustainable local development rule. It is simply defined as a tool of development and conservation (Hunter and Shaw, 2007).

On the other hand, the sustainable development involved as an alibi, an ideal community maintained voluntarily by the political and economic actors, preoccupied by justifying and proving their economic logic, but also by preserving and keeping the economic powers already acquired. We believe that solving the problem, adapting the social, economic and ecologic systems to this fact of the globalization: the sustainable development would be enough. We should draw the attention towards the fact that the transformation/the

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change/the improvement in tourism need another strategy than the continuous improvement, because the success from the past sometimes can be a great obstacle (Buhalis, 2000; Hunter and Green, 1995).

Yet, are the investors necessary, is a new strategy needed, or are the people prepared for a change, especially for the acceptance of the new era of the sustainable things in tourism Indonesia? Or should we wait for the interventions of the government? These are more than normal questions which any person who feels useless when sees that the things do not run well at all in the tourism field asks one, although we have tourism potential. This article tries, briefly, to underline the various favorable elements which the Indonesia tourism can use in its favor.

TOURISM AND SUSTAINABLE TOURISM, A BINOMIAL RELATION

Tourism represents an important domain in the revival and modernization of any economy because businesses are rather small sized and capital needs reduced imprinting investments a fast rhythm. Investments in tourism also imply investments in those sectors the activity of which are strongly correlated with tourism hence the double impact of tourism: stimulating the investments specific to tourism as well as the national ones. At world level, investments in tourism represent 11 % of the total investible efforts in the year of 2016. Tourism is considered a mean of lessening the inflation phenomenon as it ensures a more balanced money flow. Inflation aspects in tourism are to be found mainly in the areas where touristic development is in progress as there is a greater tourist demand which brings along an increased seasonal fluctuation of prices, a discrepancy between the purchasing power of the residents and that of the tourists as prices go up especially for food, accommodation for tourists, investors or external employees (Mazilu, 2010 and Mazilu 2012).

The most direct way to reduce the adverse impacts of tourism related travel is to increase opportunities for people to engage in appealing tourism activities in their own cities, regions or countries. In various cities of the world, this local tourism concept is known as "green tourism." Green tourism in contrast to "eco-tourism," which relies on travel to distant locations seeks to provide recreational attractions and hospitality facilities to local people within their local regions, thereby reducing tourism-related travel (Mitlin, 1992) .

While green tourism proved has the positive economic effect of stimulating local economic activity, it reduces the flow of foreign currency to developing nations and any resulting economic benefits that may occur to developing towns and cities from these revenue flows (Murdoch, 1993 ; Potter 2001). Already for a long time, the tourism industry has started to develop the concepts of sustainable tourism and ecotourism, with the purpose of guaranteeing the minimization of the negative impacts of tourism, while maximizing its economic positive advantages, because 2017 is a unique opportunity for us to promote the contribution of tourism to achieving the future we want – and also to determine, together, the exact role we will have tourism play in the sustainable development agenda, to and beyond 2030, a unique opportunity to ensure that tourism is a pillar in achieving the 17 Sustainable Development Goals (SDGs).

The key aspect is making the tourist aware that the trip might contribute to some negative impacts on the destination, inviting him/ her to care about their minimization. Tourists should accordingly be invited to choose those destinations, products and services, which give some kind of guarantee about this minimization. This is the spirit of sustainable tourism and ecotourism. The promotion of a unitary idea about Indonesia's sustainable tourism image is necessary, as well as it should be completed with secondary images according to fields, strategies and planning which have to be consistent with the unitary image. A branding program should be based on an integrated policy through which to communicate and execute in a coordinated and repeated manner motivating themes that differentiate Indonesia from other countries (Drucker, 1993; Hunter and Green 1995).

An umbrella mark (a ecotourism nation mark) is necessary, which can be used as a reference by all the other secondary marks developed in various fields and/or areas. The product, corporation, city, ecotourism

destination or region, district marks must be an integrand part of the national brand/mark. The number of tourists travelling to spend their free time elsewhere than in their country of residence has exceeded 1.2 billion, which means that one in six people on the planet travel for tourist purposes. The world economy at the moment undergoes two revolutions, one in the field of IT, and the other in the field of tourism. Tourism is a factor of economic growth, creates and maintains jobs (Mazilu, 2013; Mazilu et al. 2017).

Tourism is a factor of social transformation; it facilitates an unprecedented closeness in history between cultures and civilizations, people travelling to more and more distant places from their own location, meeting other people, other food, other music, and other habits. The direct spontaneous and always peaceful cultural exchanges occur during the process.

INDONESIA SUSTAINABLE TOURISM

With strict reference to Indonesia tourism and its promotion in the world, Ministry of Tourism stated at the World Tourism Organisation, that a memorable event for Indonesia, where I had the honor of being invited as an expert in tourism: "You cannot promote your mountains, lakes, rivers and beautiful beaches or the tasty food anymore. All the countries in the world can boast that. You need to find something unique, Indonesia's soul. That means a brand, "Tourists look for challenges and for unique things". "Believe in your country, because if you do not believe in it, no one will do it!" Ministry added that this should be taken into account because visitors will feel good in a place as long as the hosts will also feel good. This article, based on tourism geography specific methods, gives a real diagnosis to the phenomenon of tourism increase, which, specific to Indonesia, depends on accessing two levers, one related to transport - direct flights - and one related to administration - visa granting improvement. This requires electronic visas, outsourced visa centres, transparency and speed of public service, including various forms of ticketing to support tourists in and to Indonesia (Ministry of Tourism, 2016).

At least two-thirds of the activities offered to guests must be related to nature, more than half of the accommodation places must be small, with only few rooms and built of traditional materials, and the menu must offer local products, preferably bio products. The need of such studies regarding the sustainable development of touristic destinations must be a priority for each state, because it is very important to assess the current status of each destination and after this audit, certain plans and strategies must be developed. The main objective of a destination is to create some sustainable products in order to increase the tourism flows taking into account the preservation of the natural resources and the capitalization of the main touristic assets. (Timothy and Teye, 2009; Soteriades, 2012)

LITERATURE REVIEW

Durability in tourism

The literature includes a wide range of concerns about sustainability of tourism and sustainable development in general. In other words, concerns about sustainable tourism have become "fashionable", often alienating from its key concept, demonstrating in many cases major differences that the principles and policies of "sustainable" tourism do not necessarily contribute to sustainable development. In the literature on sustainable development, a special attention has recently been given to the description of different perceptions of sustainable development, while the attempts to advance the understanding of the concept generally involve discussing alternative views (Wall, 1993; Wheeller, 1993).

Sustainable tourism

It is worth mentioning the recent diversification of the approaches related to sustainable tourism in the field of sustainability, tourism having a privileged relationship with sustainable development and many

important physical and geographic units for Indonesia's tourist image. The Factors with Majors Incidence in the Development of Sustainable Tourism (Soteriades, 2012).

New products in sustainable tourism

Linked the sources of new products for sustained competitive advantage, given in most literature important are the differentiation, the quality (chain and value system), the cost reduction, the niche marketing, the performance and the advanced technology, the type of management, the culture and the style of the organization. Because of the specific tourist product or products (which, in turn, are composed of a multitude of services) that constitute or identify with the destination, and the existence of two types of constituent resources, basic - natural and anthropogenic (reason for which the company will work with the resources of comparative advantages and resources of competitive advantage), relevant to the destination management are the differentiation and its quality, others are somewhat included (cost reduction, culture, type of management and organization style) or determined by the two: niche marketing, performance and advanced technology (Wheeler, 1993; Wilbanks, 1994).

In the optimal evolution of a tourist destination, such as Indonesia, we need to take into account the four mutually interdependent elements: demonstrate sustainable destination management practices, maximize the benefits of the environment and minimize negative impacts and maximize benefits to communities, visitors and heritage, and minimize negative impacts.

Drucker (1993), the father of modern management, said that a business has only two essential functions: marketing and innovation. Marketing and innovation get results. All others are costs. At the initiative of the Ministry, the National Tourism Research and Development Institute has developed the "National Strategy for Ecotourism Development in Indonesia" in two phases:

a. Phase I - Ecotourism Experience at National and International Level in September 2012 and

b. Phase II - Strategic Ecotourism Development Plan in Indonesia in November 2012.

The two documents, available on the ministry's website, provide relevant information on ecotourism and its importance to the tourism industry and environmental protection, the two components of ecotourism. The overall objective of the Strategic Ecotourism Development Plan is to create the conditions for the development of ecotourism in the protected areas and in the neighboring areas, aiming to achieve a competitive ecotourism product at national and international level. The new objectives for tourism sustainability in Indonesia framework for the development of economic, social and environmental policies based, not only, on the partnership for growth and jobs and the sustainable development strategy provides an adequate background for achieving objectives on the sustainability of the local tourism and challenges to be addressed to objectives of this "agenda": economic prosperity, social equity and cohesion, protection of the natural environment and culture (Hunter and Shaw, 2007; Beerli and Martín, 2004).

After all, these objectives should also guide not only for overseas tourism stakeholders in their policies and actions affecting the impact of outbound tourism and in supporting tourism as a tool for sustainable development in host countries, including tourists and Indonesia sustainable tourism (Wheeler, 1993).

Materials and Methods

Tourism represents an important element within the political and economic context of a destination. It was important to explore current debates, critical reflections and pertinent queries regarding sustainable

tourism in Indonesia. The analysis and synthesis method was used in order to evaluate the current trends at the level that can be adopted by Indonesia. There was also elaborated a Strategic Marketing plan of Indonesia destination regarding the sustainability expanded to a consumer behaviour in tourism.

The quantitative analysis was performed in the case of secondary statistical data analysis obtained from the National Institute of Statistics in Indonesia. The data presented the situation of the tourism activity in Indonesia and also the tourism contribution to GDP. The present work offers new perspectives on a global approach to new products offered on the ecotourism market, with the emphasis on the durability of Indonesia's destination. The planning and implementation of these new products and appropriate strategies imply a conceptual framework that includes new approaches that are abundantly present in this article, contributing "to the fullest" to improving efficiency and effectiveness in sustainable tourism, this research being done collectively (through the involvement of master students) by querying different sources of information such as national strategies, specialized books, international and global reports, the various tourism and ecotourism authorities (Beerli and Martín, 2004; Soteriades, 2012).

RESULTS

Current situation of the Indonesia tourism

Tourism is a vital tool for political and economic change, this article aims to explore and critically examine current debates, critical reflections of contemporary ideas, controversies and pertinent queries relating the new products and strategies in sustainable Indonesia Ecotourism, to the rapidly expanding discipline of consumer behaviour in hospitality and tourism. The destination/site plan should include a marketing strategy (Kotler and Armstong 2015; Porter, 2001). A Marketing Plan sets the framework and direction for all marketing activities for a destination covering:

- Market research
- Product development
- Brand development and management
- Advertising and promotion
- Cooperative marketing opportunities
- Product distribution and sales.

Figure 1. Thinking Frame
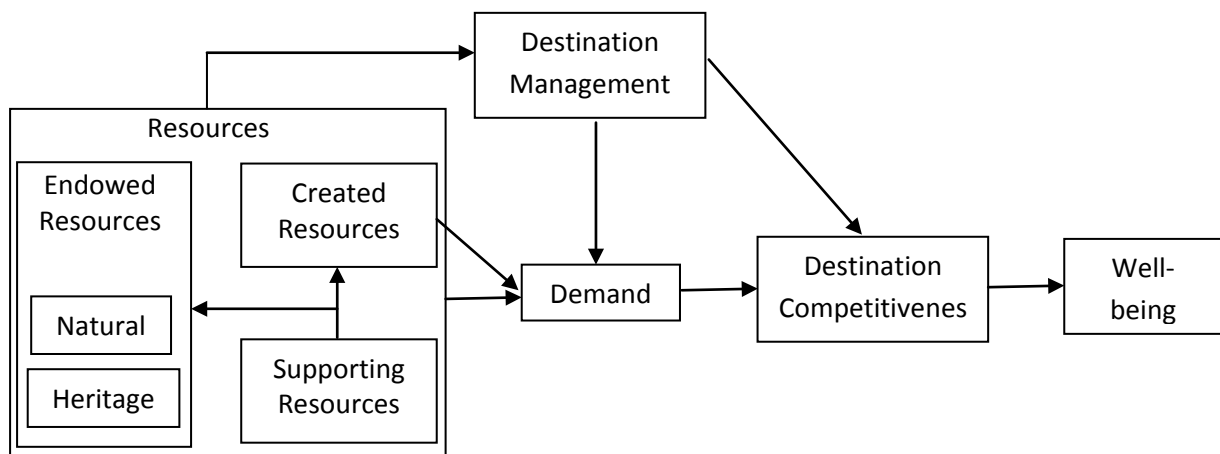
The tourism sector in Indonesia does not currently benefit from the real reflection of the actual sector indicators achieved in the total national economy, the lack of relevant, real, current information and

correlated to tourism, making it difficult to carry out conclusive analyzes of the stage and evolution of the tourism services market, of supply and demand, of seasonality and of other determinants of the development of this sector. This is also underlined in the study by the World Tourism Organization specialists in 2016, who stated that the way of collecting and interpreting tourism statistics is incomplete and undervalued, with profound implications that have led to the diminution of the strategic importance which tourism has in the sustainable development of Indonesia (Baloglu, McCleary, 1999; Beerli and Martín, 2004).

Another weak point is the use of promotion as the only "marketing" activity, the context imposing on all destinations, regardless of their type or size, the development of their strategic planning processes, as well as the management of tourist products, starting with the analysis of the needs and wishes of the consumers of tourist services, to the review of the adaptation of existing products until the integrated approach of destination management, by achieving the appropriate mix of products-markets.

STRATEGIC OBJECTIVES FOR DEVELOPING SUSTAINABLE TOURISM IN INDONESIA

In order to develop sustainable tourism in a destination, namely in Indonesia, a certain plan must be implemented with activities and measures as following:

General objective:

To boost tourism activity in Indonesia, having as a direct effect an exalting balance of tourism receipts, together with the increase in tourism revenues in the Gross Domestic Product and as a secondary effect the increase of the number of jobs in tourism.

Strategic objective 1: Developing sustainable tourism as an export economy by increasing the reputation of tourism destination Indonesia and positioning (on the target and emerging markets) as a high quality tourist destination by 2020 (the 2020 Marketing Vision of the National Tourism Authority).

Measure 1 Strengthening the elements of differentiation of tourism destination Indonesia and their promotion on the international tourism market:

• Permanent realization of market researches and studies for the most accurate knowledge of the dimensions of the tourist market (dynamics, structure) and of the tendencies in the behavior of the consumer of tourist services;

• Streamlining promotional actions through integrated communication on target and emerging markets, for all seven tourism forms and for all micro-destinations of Indonesia, depending on the marketing objective established at that stage and using state-of-the-art technologies for all the communication tools.

Measure 2 Development of tourism in areas where the density of tourist attractions is lower by highlighting the identity forms of tourism.

Strategic objective 2: Improvement of the destination management system by the awareness of the role and importance of the destination by stakeholders in the public and private environments.

Measure 1 Adaptation of the concept and criteria for setting up the Destination Management Organization (D.M.O.) - a form of integrated tourism management and promotion.

Measure 2 Elaborate strategies and establish action lines together with the industry organizations and the private environment to meet the objectives of the National Tourism Authority's 2020 Marketing Vision. Another set of objectives underline the necessity of creating a viable product in order to develop in a sustainable manner the destination and the community within it.

Strategic objective 3: The planned development of the seven key forms of tourism, which are tools for the realization of a portfolio of dynamic and modern products, adapted to the current market demands, for the sustainable development of the respective communities (the National Tourism Authority's 2020 Marketing Vision)

Measures 1

• Developing product offer by increasing the attractiveness of rural tourism, nature and adventure tourism, cultural tourism, health and wellness tourism, city-break tourism, seaside tourism, business tourism.

• Developing Ecotourism in Indonesia:

Promoting the beach and mountainous area in Indonesia; Creation of a non-machine vehicle route; and Identification and support of the establishment of extensive authentic clusters for sustainable tourism products, such as thematic excursions (e.g. architecture, gastronomy, land use, mixed: cultural and technical heritage, etc.), agri-tourism, hiking, cycling, skiing.

• Promoting the quality of tourist services/products:

• Developing a quality management system;

Strategic objective 4:

Improving the training and professional specialization of employees in the tourism and hospitality sector.

Measures 1:

Supporting the organization of dual system education: involvement of professional and employers' associations in tourism, in the implementation of the specialized curriculum, as well as the practice of students within this system.

Measures 2: Training the human resource of execution: "The development of tourism schools by creating a Hospitality Training Institution Network with institutionalized vocational training programs located in tourist development areas (the new hospitality training institutes could be set up by transforming former hotels that are not functional anymore for various reasons, and they must be equipped with appropriate training facilities). Each Hospitality Training Institute will be able to establish partnerships with similar hotel schools in the country and abroad to facilitate the development of curricula, teacher training and the exchange of experience and resources".

Measures 3: Prepare the human resource management at medium and higher level - Developing a legal framework that will allow the creation of partnerships for the realization of twinning programs with universities and specialized organizations from the country and abroad.

Measures 4: Redoing the system for granting certificates by the National Tourism Authority: setting up joint commissions, consisting of representatives of the National Authority for Tourism, in partnership with specialized organizations and the private sector, to organize examinations for the recognition/assessment of the acquired competences in order to obtain the tourism certificate, the tourist guide attestation, etc.

Strategic objective 5:

Improve the way of tourism receipts are tracked and assess the indirect contribution of tourism to GDP.

Measures 1: Legislation and implementation of GEO on the Integrated Tourism Information System (ISTI): one of the components of S.I.T. Is the Integrated Tourism Information System (I.S.T.I.), which aims to provide a clear evidence of the receipts of this economic sector, which may justify taking immediate action to tax the activities in this area. After adoption, the new draft law will impose at national level on economic operators who are managers of the establishments of tourists' reception with functions of accommodation, the obligation to transmit the data on the tourist flows in units and the related statistical indicators.

Measures 2: The expansion of the Tourism Satellite Account, representing the standardized statistical instrument at international level: in accordance with the WTO Task Force on National Tourism Statistics in Indonesia in 2015. Budget for 2017 - 2020: Marketing, Promotion and Representation: 250 billion

rupiahs per year, investments 22.5 billion annually, territorial Development: 80 billion rupiahs annually, RESPONSIBLE: Central and local public authorities/institutions.

Conclusions

This research emphasis that we cannot perform, we cannot become competitive at Asia countries level and not only, in the background of a changing tourist market, adapting to the market requirements and tourists' motivations, without taking into account the following:

- Without a good tourist product, you cannot exist as a business.

- Without proper sale, you cannot survive.

- Without efficient distribution, money cannot find you.

- With no smart marketing, you cannot hope for success.

- Without "client-care", you cannot make real profit.

Tourists do not buy products; they acquire solutions for their experiences. To understand the consumers and to solve their problems better than they can do it themselves or their competitors can make it, this is the real challenge of marketing a company. The major conclusions and desires of this study are also underlined by other studies are the following:

- An ecotourism specific infrastructure should be developed within and near protected areas of local, national and international interest;

- Achieving over the next ten years of at least ten nationally and internationally recognized ecotourism destinations;

- Increasing the amount of revenues generated by local communities in ecotourism by at least 7% annually over the next 10 years;

- Over 10 years, 2% of the revenues generated from tourism at the ecotourism destinations should be used for nature preservation; increasing the duration stay to at least 5-7 days for foreign eco-tourists and at least 3-4 days for domestic eco-tourists.

The aim and purpose of this article is to provide an overview of good practices and strategies for development, implementation and sustainability, including tourism investments at national level, taking into account and consistent with the heritage and the potential of sustainable tourist destinations in Indonesia.

The implications of this study involve also the rising of public perception towards the sustainable touristic resources of Indonesia that can be better capitalized only by having a destination management organization where all the important actors (tourists, residences, public authorities) can meet and discuss their main objectives and outcomes. Developing sustainable products and ecotourism destinations can bring many benefits on short term (economic growth, infrastructure development, increased tourism flows) and on long term (preservation of touristic resources, sustainable approach of environment and tourism, changing old mentalities and habits, understanding tourists' behavioral patterns etc.

The limitation of the study implies few quantitative analyses on sustainable tourism for the main ecotourism, Marketing and Management of Sustainable Tourism due to the incoherence of the national tourism strategies, the "rolling change" of the ministers in tourism, the legislative and, especially, the fiscal support of tourism, the multiplication of investments in tourism, etc. being worth mentioning and welcoming the new initiative of the current minister of Tourism for the Tourism Investment Master Plan (the Ministry of Tourism, in partnership with the General Secretariat of the Government and the Tourism Committee of the Organization for Economic Cooperation and Development (OECD), organized on May 15, 2017, the workshop "Investment Master plan in tourism", event attended by more than 120 representatives of local authorities and development associations in the field of tourism.

The two documents, available on the ministry's website, provide relevant information on ecotourism and its importance to the tourism industry and environmental protection, the two components of ecotourism. The overall objective of the Strategic Ecotourism Development Plan is to create the conditions for the development of ecotourism in the protected areas and in the neighboring areas, aiming to achieve a competitive ecotourism product at national and international level.

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JAPAN'S INNOVATION POLICY AND HIGH QUALITY HUMAN RESOURCE DEVELOPMENT

Nguyen Hoang Tien* - Dinh Ba Hung Anh**

ABSTRACT

In the era of international economic integration and industrial revolution 4.0 taking place at a rapid pace with government's innovation policies not only in the field of science and technology. The deployment of high-quality human resources will be a springboard and platform for the national economy to continue to grow. The countries in Asia have succeeded and developed faster than Western countries that have better advantage and started from higher development level. Among Asian countries, Japan is a typical one with government and state agencies always attaching great importance to the development of innovative policies for the economy and enterprises with public investment per capita (or calculated by percentage of total GDP) on human resources always higher than any other country in the world, while the focus is extremely put on training high quality human resources needed for the cause of national innovative performance. This could also be a lesson learned for Vietnam that wants to develop high quality human resources and implement a policy similar to Japan. This article will analyze and point out appropriate solutions for Vietnam on this path.

Keywords: *Inovation policy; high quality human resource; Japan; Vietnam.*

1. STATE'S INNOVATION POLICY

Absolute and relative increases in national GDP occur through intensive scientific research and strong development of the highly skilled human resources in the economy as well as in enterprises, which increase intellectual capital, promote capabilities for the development of innovations and adaptations to new technologies and their application through the creation of innovative technologies of production. Such technologies increase labor efficiency and expand enterprise production capacities. This, in turn, facilitates innovation development within existing spheres of the economy and the refinement of existing products and technologies. The creation of innovations occurs through scientific and educational development in the economy; through the financing of scientific research at corporate and state levels for the development of new products and technologies that satisfy consumer needs more efficiently; and through the creation of new economic sectors. As a result, scientific revolutions occur, and technological modes change one another (Irina 2016).

Basic characteristics, essential peculiarities, and generalized features of innovation development processes have been analyzed at macro level to determine the role of it (innovation) in the provision of national economic growth and country competitiveness in the global economy through its creation and application into national production and through its stimulation in business activities by means of state

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policies. Innovations play a key role in the provisioning of national economic growth. Scientific researchers have focused on global aspects of innovation development related to overcoming disproportionate economic growth in various countries through innovation and related to global economic growth not only through quantitative GDP growth but also through qualitative expression of the application of innovations.

Issues of state policy in terms of rules and regulations of the innovational activity of enterprises are particularly important in this context. In order to provide the necessary support and stimulation of the innovational activity of enterprises and simultaneously avoid unnecessary expenditures of state budgets, it is essential to determine the peculiarities of state policy on innovational activities of enterprises in modern economy. In global economy, the importance of state policy on innovational activity of enterprises grows, as there is a close connection between a country's global competitiveness and the effectiveness of state policy on innovational activity in that country (Yuri et al, 2016). Many authors have determined the most promising directions of innovational initiatives, the most important factors and conditions supporting the development and implementation of innovations of enterprises in various countries around the world, and the national peculiarities of innovational activity. Innovational activity can improve internal business processes and modify existing ones, or it can lead to the development and manufacture of innovative products. Innovations ensure the development of enterprises and support their competitiveness. In the global economy, the need for state policy on innovational activity of enterprises is especially high. State policy on innovational activity of enterprises in the global economy include the growing role of the innovational sectors in the economies, the acceleration of the rates at which innovations are developed, the exports of innovations, the dependence of the whole economy on sectors of innovations, and the domination of indirect impact of state policy on innovational activity of enterprises. For the purpose of improving the influence of state policy on innovational activity of enterprises in the global economy, the formation of innovative bases that connect institutions, innovators, investors, and businessmen; the development of international connections in sectors of innovations and infrastructural provisions for creation and implementation of innovations into enterprises should be in place.

2.   HIGH QUALITY HUMAN RESOURCE ISSUE

For businesses, to develop innovation based strategy, they need high quality human resource and adequate talent management strategy. High quality human resource or highly educated human resource or talents are individuals who can make a difference to organizational through immediate contribution or by demonstrating their highest potential. *Talent management* is a process of identifying, recruiting, retaining and developing talented people. It is related with more comprehensive and integrated activities to secure the flow of talent (major resource) in an organization, bearing in mind that talent is a major corporate resource. Talent management starts with the business strategy and what it signifies in terms of the talented people required by the organization. Ultimately, its aim is to develop and maintain a pool of talented, high skilled people. Its elements are described below (Nguyen Hoang Tien, 2017, pp. 143-144):

▪ Attraction and retention policy – these policies describe the approach to ensuring that the organization both gets and keeps the talent it needs. Attraction policies lead to programs for external resourcing. Retention policies are designed to ensure that people remain as committed members of the organization. The outcome of these policies is a talent flow that creates and maintains the talent pool.

▪ Talent audit – identifies those with potential and provides the basis for career planning and development; ensuring that talented people have the sequence of experience supplemented by coaching and learning programs that will fit them to carry out more demanding roles in the future. Talent audits can

also be used to indicate the possible danger of talented people leaving (risk analysis) and what action may need to be taken to retain them.

▪ Talent relationship management – the process of building effective relationships with people in their roles. It is concerned generally with creating a great place to work, but in particular it is about treating individual employees fairly, recognizing their value, giving them a voice and providing opportunities for growth. The aim is to achieve talent engagement, ensuring that people are committed to their work and the organization. It is better to build an existing relationship rather than try to create a new one when someone leaves.

▪ Performance management – a means of building relationships with people, identifying talent and potential, planning learning and development activities and making the most of the talent possessed by the organization. Line managers can be asked to carry out separate risk analyzes for any key staff to assess the likelihood of their leaving. Properly carried out, performance management is a means of increasing the engagement and motivation of people by providing positive feedback and recognition.

▪ Learning and development – essential components in the process of talent management ensuring that people acquire and enhance the skills and competencies they need. Policies should be formulated by reference to employee success profiles, which are described in terms of competencies and define the qualities that need to be developed. Employee success profiles can be incorporated in role profiles.

▪ Career management – consists of the processes of career planning and management succession. Career planning shapes the progression of individuals within an organization in accordance with assessments of organizational needs, defined employee success profiles, and the performance, potential and preferences of individual members of the enterprise. Destination jobs are identified for high-potentials, which are attainable only if the employee continues to perform, impress and demonstrate growth potential. Management succession planning takes place to ensure that, as far as possible, the organization has the managers it requires to meet future business needs.

A *talent management strategy* mentioned above consists of a view on how the processes of talent management should mesh together with an overall objective, to acquire and nurture talent wherever it is and wherever it is needed by using a number of interdependent policies and practices. A talent management strategy involves (Nguyen Hoang Tien, 2017, pp. 144-145):

▪ Defining who the talent management program should cover; what is talent in terms of competencies and potential; future talent requirements;

▪ Developing organization as an Employer of choice (a great place to work) and ensure that good-quality people are recruited who are likely to thrive in the organization and stay with it for a reasonable length of time;

▪ Providing opportunities for career development and growth with jobs full of autonomy, interest and challenge through designing jobs and developing roles that give people opportunities to apply and grow their skills; good working environment with work processes and facilities enabling rewarding jobs and roles to be designed and developed;

▪ Balancing between working and life by providing scope for achieving a reasonable balance between working in the organization and life outside work;

▪ Talent audit, that is to identify those with potential and those who might leave the organization and management succession planning procedures through identifying the talent available to meet future requirements and indicate what management development activities are required.

The development and implementation of talent management strategy requires high-quality management and leadership from the top and from senior managers and the human resource function. The approaches required involve emphasizing growth from within, regarding talent development as a key element of the business strategy, being clear about the competencies and qualities that matter, maintaining well-defined career paths, taking management development, coaching and mentoring very seriously, and demanding high performance.

3. INNOVATION POLICY AND BUSINESS HIGH QUALITY HUMAN RESOURCE DEVELOPMENT

Entrepreneurial intent (EI) is the first act in the entrepreneurial process. It could be defined as a self-acknowledged conviction by individuals that they intend to set up a new business venture and consciously plan to do so at some point in the future. EI summarizes the willingness of a person to create his own enterprise. EI is a rapidly evolving area of research within the field of entrepreneurship. The increasing interest in exploring the factors that build one's EI is due to the crucial role that innovation based entrepreneurial activities nowadays play in fostering economic and social development. In today's competitive world, entrepreneurship is one of the main concerns of various organizations including universities around the world. Entrepreneurship depends mutually on business' innovation activities and state's innovation policy. Entrepreneurship can be educated (taught) to increase the prevalence rate of entrepreneurs and, thereby, stimulate economic growth, job creation, sources of innovation and productivity. Due to this fact many countries decided to invest in an entrepreneurship-friendly institutional infrastructure in general and entrepreneurship education in particular (Okreglicka et al, 2017). The role of university education in strengthening students' innovation based entrepreneurial intentions is undeniable. Well educated entrepreneurs are talents, high quality human resource that many corporations seek after. Providing necessary knowledge and pro-innovative skills; shaping entrepreneurial and creative attitudes among students stimulate their entrepreneurial behaviors and, consequently, result in many startups launched by graduates and even students. Innovation based entrepreneurship occupies an increasingly important place since it is the main source of wealth creation and fight against unemployment typical for the 4th Industrial Revolution. Entrepreneurship education to create high level innovative human resource contributes greatly to the development of entrepreneurial intention. However, the content and context of entrepreneurship education vary between universities, countries and regions with different rates and types of employment, modes of new business creation. Authorities, such as ministry of higher education and related governmental organs, should focus on entrepreneurial education by diversifying programs and courses to create and manage talented (innovative and creative) entrepreneurial human resources who are desperately needed by the economy seeking opportunities for strong and sustainable growth. Actually, one of the strategic objectives of universities includes creation of innovation based entrepreneurial intention and development of skills and competencies in the field of innovative entrepreneurship. Teaching and learning methods should also be revised to enhance student participation and commitment to the idea of innovation based entrepreneurial intention (Khalifa, 2016).

4. JAPANESE GOVERNMENT TO DEVELOP NATIONAL HIGH QUALITY HUMAN RESOURCE

The national human resource development (NHRD) plan in Japan started when the government accepted a budget request for implementing national primary guide and education reform-related acts including the Newly Developed Education Plan and the Human Resource Strategy Vision facing strong general demand for highly qualified human resource in a new context of economic development of XXI century, the era of Industrial Revolution 4.0. NHRD plan is conducted primarily as a tool of education reform toward entrepreneurship and innovation and emphasizes strong cooperation between institutions

(including universities), businesses and related parties. Another characteristic is that Japan's Educational Reform plan is intended to be uniquely Japanese, rather than following Western methods, patterns and styles. This Educational Reform plan is the foundation for NHRD policy in Japan. It includes projects to encourage and orient young people to study STEM (science, technology, engineering and math) beside entrepreneurial spirit and intention training, plans to improve quality of universities' teaching and research, programs of student and staff exchange in advanced fields, activities for on-the-job career advancement. The Human Resources Strategy Vision mentioned above has six goals [Shin et al., 2009]:

(1) Improve study and research skills;

(2) Improve soft skills and human relations in addition to technical expertise;

(3) Bring up the best brains and versatile abilities;

(4) Advance the education system to respond to the needs of the national economy in the era of Industrial Revolution 4.0;

(5) Stimulate and promote accomplishment in above mentioned areas;

(6) Foster Japanese people to take advantage and better function in the era of Industrial Revolution 4.0.

To promote these reform plans, the Diet enacted six educational reform laws and also secured budgetary support for these plans. The key contents of these legislations are as follows [Shin et al., 2009]:

(1) Consolidation and incorporation of national universities (and abolition or conversion of short-period colleges) toward innovative universities;

(2) National universities have autonomous decisions over their staff unions;

(3) Strong control and influence of national universities' management board over staff, financial, curriculum and research issues;

(4) Advanced placement system for students with superior scores in high schools, colleges, and graduate schools;

(5) Approval of experiential activities such as volunteering, social, research and startup activities as educational activities;

(6) Establishment of the Students Innovative Activities' fund.

Japan has not created a comprehensive monitoring and evaluation system for NHRD policy; instead, each ministry is authorized to evaluate the effectiveness of its own policy implementation. In particular, Japan makes it clear that policy objectives and policy priorities and performance outcome should be specified to help its citizens understand the NHRD plan and to facilitate monitoring systems by citizens and further encourage executive agencies to use measurable expressions.

In Japan, the government organization was downsized and divided into: the Ministry of Education, Culture, Sports, Science, and Technology and the Ministry of Health, Labor, and Welfare. This has reportedly resulted in the fragmentation of the HRD system. However, Japan is still endeavoring to make the system a success, and it has tied NHRD plans to financial and economic restructuring. The country is also trying to ensure transparency in its educational and administrative system through deregulation and decentralization of management and information sharing. Furthermore, it is implementing career and work capacity development

system to ensure employment security and employment expansion that should accompany changes in the new industrial structure typical for Industrial Revolution 4.0, examples of which include streamlining the blue-collar employment, expanding the startup career opportunities, development of labor market analysis and counseling services, the advancement of talented individuals, and the nurturing of highly skilled laborers

5. CONCLUSION AND EXPERIENCE FOR VIETNAMESE GOVERNMENT

As mentioned above in both theoretical analysis and practical experiences of Japanese policy toward entrepreneurship and innovation development in parallel with forming talented human resource for the needs of economy and entreprises, the education system is at the core of state innovation policy. It (education system) must be changed and reformed ro respond to the needs of new phase of national economic development, the era of innovational economy and Industrial Revolution 4.0. National Human Resource Development (NHRD) strategy, plan and program are responsible for shaping new generation of individual talents that are innovation oriented and enterprenerial both in spirit and intention to help kick off the economy and entreprises into a new height of development track.

What lesson Vietnamese government should learn from results of theoretical analysis and practices of Japan's experiences? Hereafter some general solutions that suit the current conditions and context of Vietnamese socio-economic development and government's strategic orientation toward Industrial Revolution 4.0:

Tie the success of innovation development policy in terms of economic growth and its sustainability to the sector of tertiary education. The national higher education system is starting from a very low level of development so it need a leverage to breakthrough development. Model of innovative university (promoting and even financing creative minds, independent thinkers and doers, enterprenerial spirits); autonomy and decentralization to independently function organizationally, financially, academically and strategically in competitive market should be in place to attract high quality input (potential investors, highly qualified academic staff, education managers, top high school graduates, etc.) and to produce high quality output (better education and training services suiting trends in labor market and latest technology development, top individual talented alumni nationally, regionally and globally, etc.)

Interrelate and incorporate talent management strategy into NHRD system to guarantee that NHRD system is to produce best quality, highly talented human resource, the smartest minds that best serve the interest of national economy being in transition due to the context of innovational trends and Industrial revolution 4.0. Examples are: talent audit, talent hunting, talent promotion, talent development, talent performance assessment and talent's full autonomy guaranteed.

To get always into the right track of national innovative development, more international collaboration (with higher innovationally developed nations such as Japan, Korea, United States) should be in place between universities (elements of NHRD system), universities and businesses for students, academic staff, business and technology expert exchange for the benefits of all involved and related parties, but primarily for the purpose of development and adaptation of curricula and teaching methods to the changing context of Industrial revolution 4.0, to extend the scope of education activities to embrace different spheres, including technology progress and social innovation, business startup and entrepreneurship.

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STRENGTHENING THE ROLE OF ECONOMIC UNIVERSITIES TO BOOST UP INNOVATIVE STARTUP

Nguyen Quang Sang* - Nguyen Linh Phuong**

ABSTRACT: *Undoubtedly, it is manufacturing, through the Industry 4.0 concept, that is moving to the next phase of digitalization Industry 4.0 by innovative technologies such as Internet of Things, Cloud technology, Augmented and Virtual Reality, and so on. Moreover, it will certainly play an important role in manufacturing education, stimulating advanced life-long training of the skilled workforce. As regards of advanced education which is so called Education 4.0, and networked ecosystems, it will enhance various skills in reality and build competences for the new era of manufacturing. In fact, due to the progress of technology with a wide range of innovation such as smart boards, advanced projectors, etc, they are helpful in making education become easier and more convenient for both lecturers and learners. Towards that, this study will illustrate what methods should be utilized to upgrade the role of universities in escalating innovative startup and bring more sustainable development for different societies.*

Key words: innovatie, startups, role of economic universities

1. INTRODUCTION

In the trend of globalization, it is the fact that trade liberalization and the fourth wave of industrial revolution have dramatic effects on all aspects of socio-economic life. Furthermore, the role of technology and innovation has become increasingly important to promote productivity growth, quality growth and economic competitiveness.

In 2016, the number of newly established enterprises in Vietnam increased by more than 110,000 enterprises and the size of capital increased by 48%. In 2017 there are more than 105,000 newly established enterprises, of which 97% generate revenue and pay taxes. Apparently, this is a good indicator of economic prosperity as the number of businesses enhances, which creates more employment opportunities and new products, services for the society.

In addition, in 2017, Vietnam upgraded 15 levels in the global competitive index, and14 levels in the global innovation index. This is the result of reforms in research funding, university autonomy, and commercialization of research results, including technology transfer centers.

However, the current system of scientific research and innovation of Vietnam generally focuses only on creating new knowledge through research projects in schools and institutes with little effort in putting knowledges into social life, production and businesses. Moreover, instead of educating students to become risk takers to experiment with new and innovative ideas and become job creators, not just job seekers; many

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universities believe that their main mission is only to train students so that when they graduate they will be able to get jobs. As a result, this research paper aims at suggesting some methods to enhance the role of universities in boosting up innovative startup.

2. Methodology

In the scrutiny's practical part, qualitative research method is used in thisresearch. Hence, as regards of data collection, the author decided to utilize secondary data for this study. Apparently Secondary data also called second hand data include material and information collected by personal or a group of person. (Wang 2008, 35). Secondary data could be everything from annual reports, promotional material, documentation, magazines, newspapers, internet resources, etc. The secondary data which was mentioned in this research was selected from literature related to business, startups, completed thesis works, lectures and various internet sources such as Google books, articles, websites, and so on, providing important references to support the content.

3. Role of universities, especially Economics Universities in promoting innovative startups

Undoubtedly, the environment and community of a university are not only conductive to creation and discovery but also the drivers of innovation. It is considered one of the critical tools to enhance innovation in various companies and institutions. In other words, it is regarded as seeds for future innovations. Moreover, it can not be denied that universities are places where discovery, invention and learning happen without constraints. In other words, universities, often situated at the center of innovative clusters, are believed to be important drivers of local economic growth. Indeed, it is unconstrained by the ticking clock to show value to the next round of venture capital funding, unconstrained by the need to create something that can quickly be sold to, or used by, millions of people.

Tom Clynes, a science journalist, recently wrote in the New York Times "*We don't have enough of the desperately needed inventions — nuclear fusion energy or cancer cures — that emerge when credentialed scientists tinker away for years on expensive machines that have nothing to do with Snapchat. Of course, this sort of tinkering most often happens in…academic institutions*." Moreover, Vu Tuan Anh, Head of the Hoasen Group Community Initiative, said, "*As long as lecturers and researchers of universities in Vietnam are not yet involved in the commercialization of their scientific research products, our ecosystem of startups will not be really sustainable and create high value for society.* "

There is no doubt that new graduates are considered to be an abundant source of human resources for startups. Each year our country has about 400,000 graduates. However, 225,500 students are not able to find a job while there are about 1,500 startup businesses in Vietnam. It is the fact that the human resource has not met the expectations and requirements for potential development from those organizations.

For example, at FPT University, learners often determine their goal or destination as owners of businesses, which brings precious values to society. Moreover, they know what they need to learn for training, and accumulate those knowledge during the whole 4 years in university. Therefore, according to the latest survey of FPT University, 98% of FPT University students have jobs after graduation, 19% of students work in foreign countries, in developed countries and up to 5% starts up. "*In fact, successful starters are always learning, willing to learn and work around the clock. They are great thinkers, dream big but save every small result*, "said Le Truong Tung - Chairman of the Board of FPT University.

Nguyen Viet Hung, who was just a second-year student, started his career over a year ago. He built a graphic design training system with a turnover of over 200 million dong which attracts hundreds of

students every month. Hung pursued the model of education by passion for painting, and designing from his childhood. The model was greatly influenced from the environment of FPT University where Hung is studying. Among the hundreds of thousands of other graphic design classes, Hung creates added value to his product according to its good price, the principle curriculum that emphasizes the application, and aims at customers who are mainly students.

Apparently, it is Industry 4.0 era that is gradually finding its way of application on the current manufacturing systems, while more and more studies are paying attention to possible future integrations. Furthermore, the progressive enrichment of the university identity as generating opportunities for innovative forms of entrepreneurship - a phenomenon called entrepreneurial university - has adjusted the socio-economic role of universities in many urban/metro area (Etzkowitz, 2004). In fact, the creation of spin-off firms is considered a helpful method to build up a central tool for the commercialization of the knowledge/ technologies therein generated and, therefore, sustaining innovative activities.

4. EXPERIENCES FROM STARTUP CASES IN THE WORLD

4.1. United States

In the United States, between the 1970s and the mid-2000s, there were 500,000 to 600,000 new opened businesses each year and the emergence of powerful corporations made the US economy boom. What made this development of America?

Initially, there are many factors that make America flourish. Nonetheless, the American entrepreneurial spirit and the important role of the university are regarded as two of the determining factors. Policy-makers in the United States contend that universities play an important role in developing the regional economy and promoting entrepreneurship. For instance, the Massachusetts Institute of Technology Valley is an indispensable factor in promoting industry in Boston and Stanford University in the Silicon Valley.

On the subject of Curriculum: US universities have developed a series of startup courses. The courses are divided into three categories: (1) an introductory course on business planning; (2) courses that are closely related to stages of the business life cycle; (3) business functions courses that cover management issues (eg entrepreneurial characteristics, innovation management, team building), finance, accounting and tax, law and marketing.

Thirdly, American universities often provide two types of extracurricular activities to bring in more in-depth exploration opportunities, such as student clubs and demonstration series to increase access to startups; various activities to upgrade practical experiences such as business planning contests and internship to encourage further development of entrepreneurial skills

 As regards of lecturers: Universities in the United States employ full-time lecturers for startup training curriculums although there is a high proportion of teaching assistants who teach entrepreneurship, even in some prevalent business schools in the US.

- In respect to funding: In the United States, education and training receive financial support from outside sources such as successful entrepreneurs and foundations, as well as from the government. In reality, many universities have established startup centers which are mostly provided by successful entrepreneurs who have graduated from those institutions.

In terms of the connection between universities and industry, the cooperation with industry area is often considered the strength of American universities. In reality, the collaboration between industry and universities manifests itself in many forms. According to the National Science Foundation (NSF), there are four areas of university-industry cooperation: research, research collaboration, knowledge transfer and technology transfer.

Moreover, increase in the number of startup institutions has deepened the principle knowledges of startups. Masters and other postgraduate programs have gone in two directions: On the one hand, postgraduate programs now tend to offer course groups related to the field of entrepreneurship; On the other hand, due to the availability of specific startup program, students are now able to graduate with a startup degree.

Universities in USA also connect a lifestyle and startup culture directly with some startup training programs such as the McGuire Startup Program, the Training Entrepreneurship Training Program for Business Entrepreneurs, and so on. Especially, Growing America through Entrepreneurship Project was approved with an annual budget worthing 200000 USD, and Women's Training Women for Success Program.

There is no doubt that an indispensable element for enhancing the competitiveness and motivation for education in the United States is the evaluation and ranking of university-based startups launched by Success Magazine in 1995. The appraisal is based on some criterias including faculty qualifications, the variety and depth of the entrepreneurial startup program, academic standards together with student scores, and resources' quality.

4.2. Founder Institute

Taking the focus on the business startup ecosystem, Founder Institute builds a model that follows three major stages of innovation. Accordingly, universities play an important role in all three key stages: Formation of ideas; product development and growth.

In the first stage, universities- lecturers particularly and facilitators which acts as inspirational persons, should provide information, introduce examples of success, suppot team development by promoting inter-disciplinary collaboration among students.

When businesses have products, services, universities need to provide principle knowledge of business such as law, tax, accounting, etc, and even some supports that are related to workplaces for startup founders. For the third stage when ecosystems have many well-established startups, universities should play a pioneering role in providing business talents, human resources with high quality of logial thinking, useful skills and experiences for sustainable growth. As a result, universities will not only be able to equip students with skills, knowledge and experiences to be ready to do startup when having a truly renovative direction but also execute their role perfectly in providing human resources with high quality for society.

If the university role model in the economy emphasizes the internal force of universities to innovate, the approach to the university's role in the startup ecosystem suggests that the effect when bringing products and services from universities to the outside and commercialization. While the first approach pointed out that in order to better deliver their products to outside, universities need to foster innovation and cooperate with the private sector, the second approach insists on the role of universities in inspiring, supporting the evaluation of ideas and building team development. Both approaches exemplify the key roles of universities in innovation and doing startup: (1) entrepreneurial spirit and inspiration; providing human resources with high quality (2) Cooperate with businessé and capture market demand.

4.3 Germany

Taking example of Germany, in an analysis of why, at the centre of Europe, it is considered one of the most innovative countries. Hence, what does Germany learn from Silicon Valley? One of the answers was: "At Stanford, no economics professor does not take part in the economic field. They can start a self-startup or join as advisors." Reflecting on Vietnam, the loose connection between universities and the

market is making lectuerers - the important bridge between universities and businesses - lack of practical connections. In fact, only few of them are involved simultaneously in both teaching and doing business or startup consultancy. The majority of other lecturers just have general business knowledge. As a consequence, it is difficult for universities and those teachers to provide good orientation for students on practical issues related to business field. Due to the lack of interaction with markets and practical businesses, the inspirations of lecturers to students for starting a career and supporting the connection of various resources so that interesting business ideas of students can grow further, is not highly appraised.

Additionally, improvement of curriculums is slow, which push universities and lecturers into the situation of not having" a common language with business market". For example, streamlined startups which were trained in many universities worldwide are now scattered into a number of universities in Vietnam from initial efforts of the Viet Nam-Finland Innovation Partnership (IPP).

4.4. Thailand

It can not be denied that Thailand government plays an important role in setting up national research universities to increase research output in some key areas of national competitiveness. The Board of Education has selected top nine prestiguosly research universities to improve research capabilities, encourage research production including Chulalongkorn University, Thammasat University, Mahidol University, etc.

In addition, the Ministry of Information and Communication Technology (ICT) has set up a Digital Economy Fund to support startups, specifically in the field of technology. The Ministry also has contacted with other universities such as Sripatum King Monkut, Lat Krabang Institute of Technology ... to set up "Digital Nursery" for promoting such industries as tourism, robotics, health and creative industries. Furthermore, the purposes of this action are to research startups and commercialize products. Apparently, technological startups are expected to create a new wave for Thailand's digital economy.

In recent years, Thailand has achieved some successes when Thailand government together with Education Ministry's Education Commission have launched policies on innovation and establishment of business incubators in universities (UBIs - University Business Incubators). This action's goal is to encourage the widespread use of research as well as intellectual property rights. UBIs are developed under the linkage between universities and industry to improve the commercialization process. What is more? Thailand is planning to set up "Startup Zone" in Bangkok, Chiang Mai and other provinces across the country.

Most recently, the Thai government has also spent 2.5 billion Baths on a budget of $ 190 billion this fiscal year (the fiscal system is government-financed, usually planned and implemented full in one year) to help 27 universities expand their research projects for commercial purposes. This activity is part of the effort to accelarate the "Thailand 4.0" policy, which focuses on promoting the creation and development of advanced industries that move the economy away from the middle income trap. This will certainlt stimulate universities to cooperate instead of competing with each other like previous days.
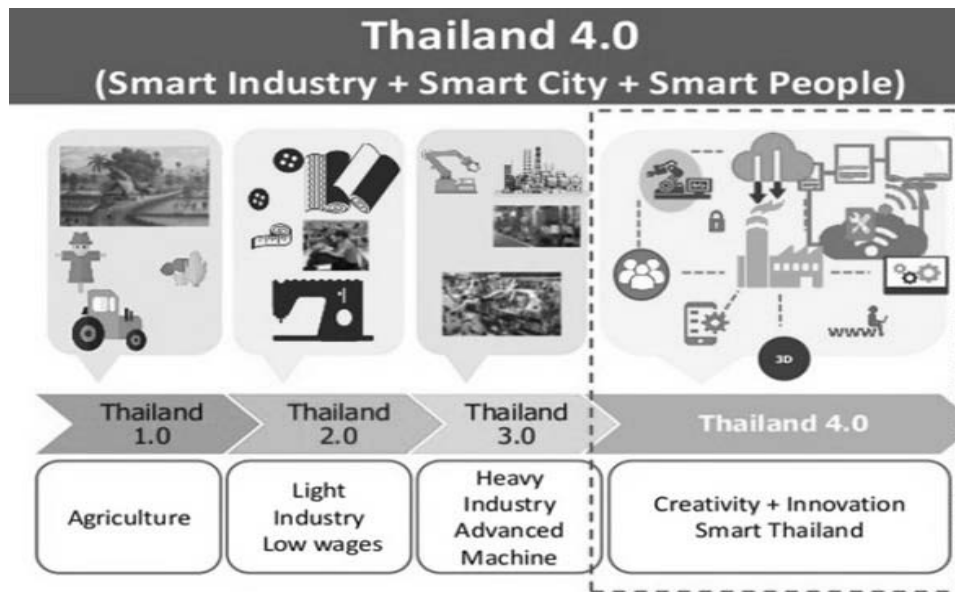
Figure 1: Thailand 4.0 model

5. RECOMMENDATIONS

In order for students to get jobs after graduation, the training should not only aim at jobs that available in society. When the market does not develop rapidly, jobs are limited, while graduates are added to the labor market, which leads to over-supply. As a result, the future training process of universities should focus on training students to do startup which not only creates jobs for themselves but also creates more jobs for others. Absolutely, this is one of the fundamental differences between higher education and vocational education. Vocational education aims at training human resources to meet specific job positions, while higher education pay attention to train people who are capable of starting a new business. At that time, a graduate student will not only occupy other people's jobs but also create more new jobs. From this fact, it is suggested that Vietnamese government should redirect the approach to college education to handle unemployment problem scrutinizingly for students after graduation.

With the aim of tackling the above problems, scientific research activities in the training process must be strengthened. For a long time, training purpise has not focused mainly on startup. Hence, the role of doing scientific research of students has not been noticed. Now it must change since taking part in doing scientific research will build up for student the creativity, creative thinking skill, the ability to discover new things, active behavior in the intellectual activities. All of those characteristics will certainly lead to the high chance of creating jobs for themselves.

Another solution is that training does not only meet the demand of domestic labor market but also has to aim at foreign labor market. The problem is how to make students adapt to the integrated working environment. The key to opening the door to this integration is foreign language skills that Vietnamese students are inherently weak. As a result of lacking foreign language capability, the student will often feel unconfident and have the shortage of competition ability in the labor market.

Adhering to the seven characteristics of university-oriented innovation, Vietnamese universities are suggested to pay attention to the following contents with the core of model 543:

- First and foremost, training should be directed towards new skills, new occupations, new exit standards and new approaches. Training certainly supports the development of individual talents. However, in reverse, it must promote the collective entrepreneurial capacity. Therefore, the spirit of the University of Education 4.0

must be reflected in the structure of the training profession; structure of each training program; each syllabus; each lecture and method of training arrangement. That is the "5 in 1" training model.

- Principle researches and academic reseraches must be priority to innovation and product development. Accordingly, we need to organize more focused research programs on core technologies of Industrialization 4.0, including creative industries and cultural industries.

- Setting up eco-entrepreneurship ecosystem, including the "4 in 1" knowledge transfer model, from ideas to creative research; innovation, invention, intellectual property and knowledge transfer and / or startup. In particular, business incubators, spin-off companies, social enterprises should be implemented in a uniform manner.

- Building a smart university is both a method and a goal of 4.0 university. It not only supports university management and develops a smart learning environment but also provides fundamentals for training and research in digital and information science. In addition, it can help to develop startup model, digital business and model of national digital connectivity data.

- Running the university autonomy in a good manner together with government agencies and enterprises (3 in 1 model), well integrating policy sources (from Government, universites and investment resources of businesses).

- Internationalization of higher education is also driven to promote innovation. Previously, the degree of internationalization of a university was only appraised by international exchanges for faculty and students, the degree of internationalization of scientific staff and students. To accelerate innovative rennovation and globalization, international cooperations in research and training should aim at common products, common intellectual property values and even the common market.

- Harmonizing the goal of capitalizing on knowledge assets, increasing economic value of the universitíe with creating synergies for businesses and the community. In reality, innovation-oriented universities do not pursue economic goals. In fact, the objective of economic development is integrated with the goal of developing scientific knowledge, which aims to create a more practical and effective resonance value of universities for society. Developing completed, direct-to-consumer, and direct commercially-available products, and contributing to added-values of campus-wide deployments are not only a trend, but also a stepping stone for greater value autonomy universities. However, universities also have responsibility to serve communitíes- first and foremost the local communities, the region where universities operate, through various activities including the provision of human resources, cooperation of knowledge transfer, increase in community and local income.

Additionally, universities and the private sector are advised to collaborate more closely to promote innovation based on the strengths of both sides, bringing universities closer to the problems of companies, improving the output quality of universities' research products. Undoubtedly, when mentioning collaborative effort, it is impossible not to mention the difficulties of universities' modern management mechanism. For example, while many universities in the United Kingdom set up companies (wholly or partly owned) to invest in research, trial production, exploitation of intellectual property rights and get benefits from commercializing research results, the development of companies inside universities in Vietnam has stopped at the pilot level. Indeed, it is difficult for companies to order and collaborate without a favorable mechanism for promoting this cooperation.

6. CONCLUSION

To sum up, it can be asserted that university which is a crucial subject for executing entrepreneurship and innovation will uphold its strengths and realize its mission effectively at the macro level. In reality, managers should identify the issue of innovation and policy innovation in universities as a vital factor for the development of a socially innovative and proactively creative society. After this recognition, universities themselves will actively enhance the internal force through the determination to change. Indeed, the creative thinking should be put into the core task. Furthermore, universities should define the output expectations explicitly through a strong and effective cooperation strategy with the private sector in business market.

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INDUSTRIAL REVOLUTION 4.0 – OPPORTUNITIES AND CHALLENGES

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ABSTRACT: *The Industrial Revolution 4.0 has been going on since the 1960s of the past century, but its current impact on our society shows that its scale, scope and complexity is unprecedented compared to any previous Industrial Revolution. On a global scale, it not only creates new developmental trends but also poses challenges and opportunities unprecedented in many areas.*

Keywords: *Industrial Revolution 4.0, opportunities, challenges, accounting, auditing*

1. INDUSTRIAL REVOLUTION 4.0 CHARACTERISTICS

Before the concept of industrial revolution 4.0 emerged, our world has undergone three industrial revolutions, marking development milestones and making fundamental changes in production and society. The first Industrial Revolution - Mechanization (since 1784) occurred when steam engine was invented, which directly affected a number of industries such as textiles, mechanical manufacturing, and transportation. The second I.R - Electrification (from 1870) happened when electric motors were invented, making contribution to increase people's life standards as well as productivity several times higher compared to what steam engines had brought about. The third I.R was Automation (since 1969), which appeared when transistors, electronics were invented, and when people around the world were connected through communication. In addition, satellites, planes, computers, telephones, the Internet ... also emerged as the fruits from this revolution. The fourth I.R (I.R 4.0) began to appear in 2000 as the Digitalization revolution and the connection of real and virtual systems. The distinguishing feature of I.R 4.0 is that values created on cyberspace are increasing in proportion, eroding the distance between the real world and the virtual world through advanced technologies and non-stop innovation. I.R 4.0 is based on digital technology and it integrates all smart technologies to optimize production processes and methods with technologies that are and will have major impacts such as 3D printing, biology, new materials, automation, robots, etc,.

The first feature of I.R 4.0, built on the foundation of the third I.R, is the integration of technologies, which blurs the boundaries between the physical, digital and biological fields. The I.R 4.0 facilitates the creation of intelligent plants in which virtual space physics systems monitor the physical processes, creating a virtual copy of the physical world. With the development of the Internet of Things, these virtual physics systems interact with each other and with people in real time, serving people through Internet services. Current technology has enabled billions of people to connect to the Internet anytime, anywhere through mobile devices, allowing for unlimited processing, storage and access to knowledge. These capabilities will be multiplied by innovative technologies in other areas, particularly due to the computing power and the availability of large amounts of data. Meanwhile, digital manufacturing technologies are interacting with the biological world. With ability of digital manufacturing technologies to interact with the biological world, designers and architects combinecomputer design, additive manufacturing, material engineering,

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and synthetic biology for pioneering systems that involve the interaction of microorganisms, the human body, human consumption, and even human living buildings.

Secondly, I.R 4.0 can open a new era of investment, productivity and increased living standards. Successful application in the field of robotic science, the Internet, large data, mobile phones and 3D printing technology will boost global productivity just like the way personal computers and the Internet has done to our world in the late 1990s. For investors, this I.R 4.0 will open opportunities for huge profits, similar to what the previous CMCN brought.

Thirdly, the I.R 4.0 is not merely a prolongation of the third I.R, but there is a big difference in its speed, scope and extent. The pace of breakthroughs is unprecedented in history. Compared to previous industrial revolutions, this I.R 4.0 is growing at a multiplier rather than an additive level. Moreover, it is transforming a large number of the industry in every country in terms of breadth and depth in all production, management and administration systems. Any business can participate in the revolution whose speed and scale of development are amazing. Let's compare Detroit in 1990 (a major hub of traditional industries) to Silicon Valley in 2014. In 1990, the three largest companies in Detroit own adequate capital of $36 billion and revenue of $250 billion and had 1.2 million employees. In 2014, the three largest companies in Silicon Valley owned a significantly higher equity capital ($1.09 trillion) and generated similar revenues to ones in Detroit (about $247 billion), but the number of employees is 10 times smaller (137,000 employees).

It is a fact that a unit of material wealth created today can require fewer laborers than 10 or 15 years ago because the marginal cost of digital-based businesses is approximately zero. Additionally, in the digital age, many new businesses offer "information goods" with almost no storage cost, transportation cost and replication cost. Some companies with breakthrough technology seem to require less capital to grow. For example, some companies (such as Instagram or WhatsApp) do not need a lot of capital to start up, which shows a change in the role of capital and scale of operation in the Fourth Industrial Revolution.

Fourthly, thanks to the I.R 4.0, new sources/forms of energy and technologies used to exploit them are found. There are some technologies aimed at using existing resourceseffectively such as embedded technology and derivative technology. Based on outstanding achievements in the fields of natural sciences such as mathematics, physics, chemistry, social sciences and humanities and the fields of science and technology such as information technology, materials technology, biotechnology, agricultural technology and medicine, humanbeings have made many innovations to serve their interests. The nature of the I.R 4.0 is optimal utilization of such resources in an interactive relationship.

Fifthly, the I.R 4.0 led to changes in the concept of innovation of technology and production equipment. At present, the added value of manufacturing industry depends primarily on turning raw materials into finished products involving soft-wares or control systems. However, in the future, based on customer demand through the Internet system, the manufacturer will only update the software and selling other hardware is unnecessary. Moreover, not only the product but also the equipment in the production is updated to add new features without replacing any parts.

2. OPPORTUNITIES

Firstly, the I.R 4.0 as well as the Internet helps accounting- auditing work is not limited by geographic distance. An accountant –an auditor in Vietnam can do accounting and auditing work in any country in the world, if hemeets the requirements to do that.

In contrast, any accountant - auditor in any country that is allowed to practice in Vietnam can carry out the accounting and auditing work of Vietnamese enterprise or organization. This creates both opportunities and challenges for those practicing accounting – auditing in Vietnam. It is necessary to improve their

abilities so that they can meet the requirements of international practice, improve their position and expand their scope of practice.

Secondly, large data gives people access to an infinite source of knowledge, which helps them learn anything they need to know. But there is a disadvantage that information may be informal. That means we need to be cautious when accessing toand using information.

With artificial intelligence, economists predict that many industries will be at risk of disappearing due to automation. Artificial Intelligence can replace manual works of accounting - auditing such as collecting, processing, calculating data but the stages such as analysing, finding the cause of solutions to each situation or even extraordinary situations involve human beings. Artificial Intelligence is not a replacement for human, but it is changing working condition of an accountant–an auditor.

3. CHALLENGES

Firstly, information and data leakage through the Internet connection is an important issue that management agencies and businesses should pay attention to. Audit information and results may be leaked from sending emails to the audited entities or outside organizations and individuals and exchanged via shared network. Bad opponents can take advantage of unofficial audit information and results to carry out destructive or pervasive purposes, which can adversely affect the image of audit enterprises. Whereas, the quality of IT infrastructure in the accounting and auditing industry generally does not meet the requirements and needs better preparation, especially on network security issues.

Secondly, in the FourthI.R, competition is between not only companies providing traditional accounting and auditing services but also between non-traditional firms and technology firms. There have been some warnings that once blockchain technology is widely used in the financial sector, there is a danger of shrinking traditional auditing services. In fact, at present, technology companies in the world such as Google and Alibaba also provide financial consulting services and tax consulting.

4. SUGGESTIONS

In order to take advantage of chances and overcome the challenges of the Fourth I.R, in the coming time, the accounting and auditing sector should focus on the following issues:

As for management agency

- The Fourth Industrial Revolution requiresregulatory agencies to prepare their IT infrastructure better to keep pace with the development of technology. Officials, civil servants, accountants and auditors must also improve theirapplied IT skills in time to meet the requirements of their job. In the field of auditing, auditing activities in general and the State Audit of Vietnam in particular perform the function of checking, assessing and certifying the reliability level of economic and financial information processed and provided by accountants. Therefore, changes in procedures of handling and synthesizing information as well as making the financial statement in the context of the Industrial Revolution 4.0 also require the State Audit to innovate fundamentally the audit process as well as the application of audit methods.

In addition, it is necessary to study and apply methods of auditing effectively and appropriately, including basic methods and technical methods, in the context of the impact of the I.R 4.0, especially methods of collecting, evaluating audit evidence, technical analysis methods in the context of accounting using electronic documents, blockchain technology, cloud computing,...

- Training courses should be organized so that auditors can catch up and adapt to IT applications timely with modern auditing tools and meet the increasing demands of their work. They need to be trained so as to have thorough knowledge of the new auditing cycle and programs set up on the basis of digital technology,

use auditing softwares proficiently, understand the process and synthesis of accounting information as well as the preparation and presentation financial statements in accordance with financial reporting standards in the context of digital technology.

- Focus on developing IT human resources with sufficient quantity and quality to meet the requirements of the management and use of IT systems and IT audit work. Raise the expertise of IT staffs to ensure the capability of managing, operating and developing the IT system of the State Audit.

- Ensure the safety in the management of network security. The Industrial Revolution 4.0 has pushed up the level of information sharing and created a huge need for cybersecurity. The accounting and auditing authorities should pay attention to building a data center; upgrade security system with high level security and multi-layer, ensure the expansion of operation range is stable, safe and long-term efficient...

- It is necessary to continue promoting international cooperation, researching and applying international accounting and auditing standards which are being used by many countries in the world, thereby learning and exchanging experiences in coping with the Industrial Revolution 4.0.

As for audit companies

- In the near future, auditing and accounting companieswill face many challenges in enhancing the confidence of public, businesses and investors in the quality of auditing services, the maintenance and improvement of the quality of human resources and meeting the requirements of national and international markets. In the context of economic development, the legal environment is increasingly demanding and the impact of the 4.0 Industrial Revolution requires enterprises to continue increasing in quantity, scale and quality of audit services.

- The competition for high-quality human resources in the accounting and auditing sector will be more drastic because human resources are not only well-knowledge but also excellent at using technology and language. Auditing companies will have the difficulty in retaining the key employees who have been trained and experienced, especially those who have international certificates and meet the requirements of large organizations and groups inside and outside due to the competition from other countries.

- Risk prevention measures should be strengthened. Businesses need to establish internal control to prevent the risk of compromising professional accounting - auditing ethics, which helps accountants and businesses protect themselves against the intervention of external forces.

As for universities

- The integration and the Industrial Revolution 4.0 require that the curricula, content and methods of training about accounting - auditing at university must have a basic innovation. Training institutions should study and analyze the characteristics of this revolution so as to propose innovations in all aspects, especially the training methods. It is necessary to continue improving the quality of curriculum with the knowledge associated with the development trend of the Industrial Revolution 4.0.

- Apply virtual accounting - auditing model of economic activities, which is both imitating and useful for students to practice. When electronic softwares and documents, electronic signatures, calculations, rotation and recordings of information have been programmed and automated, the accounting – auditing teaching methods are abandoned step by step according to the regime and manual transaction processing.

As for individuals

- The digital age is bringing a lot of new opportunities and new challenges for individuals and organizations in the field of accounting and auditing. Forindividuals who have worked and will work in the field of accounting - auditing, there are two features in the digital age that every person must be aware of to change. They are technology ability and discrimination ability. Besides professional qualification, a core elementis professional ethics.

- When all the work can be handled by technology, professional ethics become more necessary than ever before, so it is possible to build and define the true image of the enterprise. Only ethical accountants respecting the truth have the ability to create real value for shareholders so that they will continue to invest in businesses. Only ethical auditors can help investors determine the direction with less risks and more opportunities, and help protect the equitable interest of public.

- In order to make the most of many opportunities in the digital age, first of all each accountant – auditor is forced to understand the basic principles of behaviors in the professional field, therebylearningwhetheror not the behavior is right and concordant with the principles established.The most common knowledge must be understood, thenthe higher knowledge level in the process of becomingprofessional accountants – auditors can be reached.

- To do this, people in the field of accounting - auditing must understand fundamental knowledge well, get experiences and frequently update the changes. Besides, it is essential for them to maintain professional ethics and put the public interest higher than their benefits. This will form and develop their professional skills, ethics, experiences and visions.

- Moreover, the accounting and management accounting sector is also playing a growing role in the new trend, helping enterprises regulate their business at present and in the future. Thus, at the basic level, accounting work can be automated. Businesses also need people to examine, analyze and even make assessments for current and future financial situation. The employer will pay for his employees depending on the level they contribute to their work.

- An accountant - an auditor should avail himself of every opportunity to foster his professional skills, use technology for his work and have visions and career ethics as well as his creativity, sensitivity and intelligence.

- At this time, everypresent and future accountant - auditor needs to cultivate the use of artificial intelligence (technology) for his work, such as from the application of excel function to accounting softwares, management softwares, analysis ... and the way to secure information for business and its customers, thereby exploiting the customer market thoroughly. In addition, he also needs cultivate the knowledge and havethe ability to recognize the management accounting problem in enterprises, besides the trend of financial accounting as today. This is the field that helps increase the investment interests for businesses.

- Indispensable means of helpingcurrent and future accountants - auditors reach beyond their range of activities is international language. Particularly in the area of accounting and auditing, it provides added value both in language and in international professional knowledge.

- Therefore, the opportunity will be expanded for accounting - auditing staffsof international standards recognized in many countries around the world such as ACCA, CMA, CIA, etc,. These certificates can help Vietnamese accountants and auditors maximize their scope of activities and raise the competitiveness of human resources in the field of accounting and auditing in Vietnam.

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ENTREPRENEURSHIP DECISION OF BUSINESS STUDENTS IN VIETNAM: THE ROLE OF ENTREPRENEURSHIP EDUCATION

Tran Thi Ngoc Diep*

Abstract: *Under the new wave of entrepreneurial spirit around the country, business universities have taken actions to integrate entrepreneurship education in their courses. However, the students perceived benefitsof these actions and their effects on theirdecision to entrepreneur are still ambiguous. This research work aims to identify the motivations of business students' entrepreneurship and to analyze the impact of entrepreneurshipeducation on their entrepreneurial intentions. The results indicate that the perception of market opportunity and a role model are the key factors in the entrepreneurial intent of business students and confirm the positive contribution that entrepreneurship education has on their entrepreneurship attitude and intention. Finally, recommendations are offered which could help the government and higher education institutions increase the effectiveness of actions aimed at promoting firm creation among business students.*

Keywords: *entrepreneurship education, entrepreneurship motivation, business student.*

1. INTRODUCTION

In the last few years, entrepreneurship has slowly emerged as a key driver for Vietnam economic prosperity and growth. To encourage entrepreneurship, the year 2016 was chosen as "The year of entrepreneurship". Entrepreneurship among students and young people is expected to be the focus of all supporting policies. In 2017, the Prime Minister approved Decision no. 1665/QĐ-TTg about the "Supporting students' entrepreneurship to 2025" project. It focuses on entrepreneurship education and supporting measures in all higher education institutions around the country.

In the world, increasing number of universities have implemented measures to improve their entrepreneurial climate with the aim of fostering the entrepreneurial propensity of students (Eickelpasch and Fritsch, 2005; Rasmussen and Borch, 2010). Some of leading business universities in Vietnam have recently developed entrepreneurship-oriented courses and programs for the same reason.

In this context, various questions arise: What are the main motivational factors which attract or drive them to undertake a venture? Are they prepared to do so? Do entrepreneurial activities in their universities boost their intention to entrepreneur? From this point of view, one of the main aims of this work is to analyze the motivations of entrepreneurship decision among business students.The second main aim of the paper is to identify the role that entrepreneurship education plays in such decision.

For this purpose, a qualitative study was carried out among 11 business students in 3 universities in Hanoi. The outcomes of this research could be useful to policy makers to understand not only the pattern of student entrepreneurship decision, but also its implications for education policies.

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The remainder of the paper contains five sections: a literature review section presenting previous research related to student decision to entrepreneur; subsequently, a methodology section to explain the data and measures used. The results are then presented and discussed, followed by conclusions and implications. The final section is limitations and future research.

2. LITERATURE REVIEW

Entrepreneurship education

(Rippa and Secundo, 2018)

Entrepreneurship education is defined by Fayolle and Gailly (2009) as the activities aiming to foster entrepreneurial mindsets, attitudes and skills and covering a range of aspects such as idea generation, startup, growth and innovation. Entrepreneurship education is not only important to develop entrepreneurship and self-employment but also to enrich young people with the attitudes and characteristics necessary to manage the uncertain environment of self-employment. Perspectives of entrepreneurship education: startup activity, startup companies, university spinoffs,

The interest of university graduates in entrepreneurship has traditionally been low (Tonttila, 2001). The challenge of how to encourage young people to launch new firms that exploit their acquired skills as well as academic research results, spinoffs, confronts academics and policy makers.

For the general student population, including entrepreneurship content in their normal studies seems to be required to initiate the sense-making process of the entrepreneurship climate in a university (Bergmann, 2018). However, the important question is whether entrepreneurship education can actually encourage student entrepreneurship. The results of prior studies are inconsistent. Some of these studies concluded a positive impact from entrepreneurship education (Block et al., 2013, Souitaris et al., 2007, Walter and Dohse, 2012), while others found evidence that the effects are statistically insignificant or even negative (Oosterbeek et al., 2010, von Graevenitz et al., 2010).Different researchers emphasize the difficulties of evaluating the benefits or importance of teaching entrepreneurship. Colette et al. (2005) point out that much of the entrepreneurial research to date has provided no empirical support for the affirmation that completion of formal entrepreneurial initiative and SME (Small and Medium Enterprises) management courses increases an individual's probability of starting a business. In accordance with this line of thought, Matlay (2005) adds that the real contribution that these courses have on entrepreneurial activity remains ambiguous. Various authors such as Barringer, Jones, and Neubaum (2005), Fayolle, Gailly, and Lassas-Clerc (2006), Mueller (2011) or Packham, Jones, Miller, Pickernell, and Thomas (2010) have corroborated the positive contribution that entrepreneurship education can have on its participants in terms of skills, knowhow and better entrepreneurial attitude. There is no agreement on what would constitute a suitable conceptual model for assessing the effects of entrepreneurial education. According to Martin, McNally, and Kay (2013), understanding entrepreneurial intentions will enable the definition of this conceptual model.

Student entrepreneurship decision

Entrepreneurial action can be understood as any innovative action that, through an organized system of human relationships and the combination of resources, is directed towards the achievement of a specific goal (Liao & Gartner, 2006).

According to Haynie, Shepherd, Mosakowski, and Earley (2010), entrepreneurial activity has its cognitive origin in individual motivation, and is understood to be the detonating factor which sparks

behavior and obtains energy to support and steer it towards its objective. In this regard, the decision to create a business involves two levels (Barba-Sánchez & Atienza-Sahuquillo, 2017): the rational level and the motivational level. The first level revolves around the objective reasons for this conduct, which are to be found in the environmental conditions which reinforce or hinder this behavior (Ajzen, 1991, Bandura, 1977). The second level refers to subjective reasons arising from decision-maker expectations, i.e. motivations.

In brief, the dominant models of entrepreneurial intentions are: Shapero and Sokol's Entrepreneurial Event model (SEE) (1982), the Psychological-Economic model (MEP), whose precursors were Bird (1988) and Davidsson (1995), and Ajzen's Theory of Planned Behavior model (TPB) (1991); although this last one is not actually a model of entrepreneurial intent it has gained a place among these models since it is the conceptual

Although an important part of literature on entrepreneurial intention has opted for SEE (Fitzsimmons & Douglas, 2011), for TPB (Izquierdo & Buelens, 2011) or for a combination of both models (Krueger, Reilly, & Carsrud, 2000), the empirical results obtained have highlighted the gap between these theoretical models and the entrepreneurship reality in many current contexts. Authors such as Autio, Keelyey, Klofsten, and Ulfstedt (1997), Athayde (2009) or Lee, Wong, Foo, and Leung (2011) have proposed economic-psychological methods, providing alternative explanations for the entrepreneurial phenomenon and for the key variables which stimulate entrepreneurial intention. Our work is therefore in keeping with the sphere of these by considering entrepreneurship education as a situational factor and in both personal factors

3. METHODOLOGY

Table 1. Description of participants

Category	Subcategory	Number of students
Total		**11**
University	Academy of Finance	5
	Foreign Trade University	3
	University of Finance and Business Administration	3
Age	22-23	11
Gender	Female	4
	Male	7

Source: The author

This paper is based on qualitative data derived from in-depth, semi-structured interviews with 11 business students in 3 universities in Hanoi. The interviews were conducted via online video call in March 2018 when all interviewees had finished all taught courses and was being on the completion of dissertation. In this period of time, they were able to assess the benefits of all entrepreneurship related courses in their major. All participants at the time of the interview have intention to run their own company right after graduation instead of looking for a job.

Key areas of investigation were entrepreneurship terminology, motivation for establishing a company, the form of entrepreneurship education they experienced, the perceived benefits of such entrepreneurship education, and the effect on their decision of whether they would create a new venture or work for somebody else.

Interviews were analyzed by drawing out a number of key themes and comparing the interviewee responses.

4. RESULTS ANALYSIS

The form of entrepreneurship education

Entrepreneurship education is presented in form of a specific course, a workshop, or seminars within different courses. A formal course on business creation and management is provided in 1 of the 3 chosen universities. The course covers the formation process of a new company and basics of management principles in a small and medium enterprise. Students from the other two universities supposed they only experienced entrepreneurship education in form of a workshop or a seminar, which focus on more specific topics such as type of legal entity, leadership skills, business model development, marketing on online social media.

Attitude towards entrepreneurship

For some students, entrepreneurship is viewed as a challenging road that they would like to overcome, where they are independent to do something without having to report or ask for someone permission. In this case, they consider the entrepreneurship as "a mission of the youth" and think that if they do not take the chance when they are young, they could never do that when they are older and tied up with marriage and family responsibilities. For the other ones, entrepreneurship should be based on innovativeideas creating that somehow changes consumer's life or behavior. It is noted that female students tend to perceive entrepreneurship as the former one while male counterparts tend to have the latter view on entrepreneurship.

Interviewees also expressed a change in their attitude towards the entrepreneurial career after undertaking entrepreneurship training. They found it more challenging and complicated than they had thought. The obtained knowledge provided them with more realistic overview of an entrepreneur's work and life.

Entrepreneurial motivation

Different reason for the intention of owning a company are discussed by participants. A remarkable market opportunity is the most important driver for entrepreneurship. All students interviewed decide to create a business because they perceive opportunities such as the lack of the same kind of companies in the city, or a growing demand of a good/service. Such opportunity urges the students to startup despite of the lack of experience and management skills other than waiting a few more years.

"I realize that in my hometown there is no any shop serving milk tea, which is a very popular drink for teenagers. I think I have to do it before anybody else does"

A role model is also mentioned by most of participants. Some role models are those who used to be student in the same university. Education institutions often use story of successful former students to promote their images.Other role models are someone the student knows or successful entrepreneur whose story are presented on media. These role models show students an example of , so that they believe more in their intention.

"I have heardNguyen Khanh Trinh, founder of Cleverads and Soibien, once in a talk show and I was so overwhelmed by his vision, energy and enthusiasm. From that moment, I wish I could do the same someday when I have a chance."

"The son of my father's close friend, who is 5 years older than me,has been my role model since I was a child. I have always compared his achievement with mine, and followed the same path as his. I went to

the same class at the same high school, the same major at the same university with his. He is now running a very successful coffee shop chain, and this, again, inspires me to do something like that."

Other motivations are the need of achievement, passion of something, and independence.

"I dreamed about being ateacher since I was in primary school. As I grow older, I became more attached to the dream of being an inspiring English teacher. During

Perceived benefits of entrepreneurship education

All students confirmed the benefits of entrepreneurship education in any form. However, the intense of perceived benefits are different. It appears that entrepreneurship education in more formal way receive higher expectation from learner than more informal one. Hence, students who undertook a formal training course on entrepreneurship seemed to be less satisfied with the entrepreneurship education they received than those with informal one.

"The course is very interesting and full of fun, which is very rare in other classes. However,I think the content could also be learnt from somewhere else. It is not something that is unique."

"MyStrategic Managementlecturer did provide some lectures with useful information for establishing a business and the strategies of a startup company. I found all of them are valuable for my future self-employment career."

Effects of entrepreneurship education on decision to create a business

Most of students interviewed already have intention of create a business at some point of their life before undertaking any kind of entrepreneurship education in university. However, the experience of these education did have a positive effect in encouraging them to move from intentions to actions. "… learning about startup a business reminds me how great it would be to be an entrepreneur…" "… all entrepreneurship classes provide me an imagination of what it would be when starting a company. I find more enthusiastic anddeterminant to decide on self-employment career…"

6. CONCLUSIONS AND IMPLICATIONS

This study provides more insights about the entrepreneurship decision of business students and entrepreneurship educationin Vietnam. Some implications could be drawn for the policy makers and higher education institutions in promoting the startup wave among students.

Some measure might be taken to facilitate the drivers of entrepreneurship decision and, thus, promote students to create a business. To nurture the perception of market opportunities, institutions could organize idea generation activities such as workgroups, brainstorming,business plan competition so that more ideas and opportunities are realized.

Successful entrepreneurs' image could be used to inspire potential future entrepreneur.

The encouraging impact of entrepreneurship education in any form is confirmed therefore the government and higher institutions should develop formal entrepreneurship programs to . However, when it comes to formal courses, in order to enhance the level of effectiveness of the entrepreneurship programs, institution should invest more time and effort to improve the quality of the elements and content of the syllabus.

Although this study provides exploratory knowledge of entrepreneurship among business students in Vietnam, it does contain limitations that future research should bear in mind. Firstly, the sample only consists of11 students from 3 universities in Vietnam, so the conclusions obtained cannot be generalized

to Vietnamese business students as a whole. Secondly, data from the qualitative methodmight not reflect the actual effect of entrepreneurship education on students' entrepreneurship intention. As a result, future research should be implemented on a larger sample and integrate quantitative tools to further explore the link between variables.

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FINANCIAL POLICY MECHANISMS TO SUPPORT START –UPS EXPERIENCE FROM A NUMBER OF COUNTRIES.

Bach Thi Thanh Ha* - Bach Thi Thu Huong*

ABSTRACT: *Over the past few years, startups have become a trend and hot topic among young people in Vietnam. The Government has had many solutions to support startup companies such as creating favourable conditions for these entrepreneurs to access capital, innovating science and technology, etc. Experience from other countries shows that the proportion of successful startups is very small. Towards a startup nation with 1 million companies by 2020 for Vietnam, this paper proposes a number of policies supporting startups from the experience of some countries.*

Keywords: *Startup companies; support startups; venture capital funds; KNONEX*

1. INTRODUCTION

In the recent years, Startups have become a trend and the hot topic among many young entrepreneurs in Viet Nam, especially when the fourth industrial revolution is approaching. Training and support centers for startupsas well as business incubators are established in most of the biggest provinces andcities. Startup companies in Vietnam are gradually transforming and maturing their quality of products, services and vision. We have witnessed a number of startups which already archived a lot of success and well-developed such as VNG, Appota, Tiki, VCCorp, Misfit company, etc. However, not all of these startups succeed because over 90% of startups fail. According to the GEM's 2016 study, in 3,200 startup companies, only 12 are exist and only one has successfully introduced products and services on the market and continues growing [1]. Another statistics showed that, averagely 70% of startup companies fail in the first year, 20% fail in the second year, and only 10% succeed. (Thanh Giang, 2016). Although the Government has promulgated policies to support startup companies such as tax and capital incentives…, startups are facing a lot of difficulties in accessing these resources. The authors will mention all the shortcomings of startup enterprises in the past and propose some solutions.

2. CURRENT SITUATION

In these recent years, in order to support and develop startup companies, the Government has issued some financial support policies, specifically as:

Firstly, tax incentives help enterprises have more financial resources to invest in wide range of business activities, reduce dependence on bank loans and saves on operating expense.

Enterprises with preferential tax rate of corporate income are stipulated at in Article 19, Article 20 and Article 21 of Circular No. 78/2014/ TT-BTC dated 18/06/2014 and amended, supplemented in Article 6 of Circular 151/2014/ TT-BTC dated 10/10/2014 and Circular 96/2015/TT-BTC dated 22/06/2015. Specifically,

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the Government has implemented Company income tax (CIT) incentives at different levels of incentives for startup enterprises that have investment projects in preferential sectors or investment in underdeveloped socio-economic areas, rural areas, remote areas, etc. In which, the maximum incentive level is applied with 10% tax rate in 15 years, tax exemption in 4 years and 50% tax reduction for the next 9 years for biotech development projects; the new investment projects in the field of environmental protection…[3]

Secondly, capital support through the Policy Bank, The Government has implemented incentives for startup companies, for instances credit interest subsidy, guarantee loans from credit institutions, National technology innovation Funds, National Science and Technology Development Funds, Small Business Support Funds.

Thirdly, to promote the training of management capacity for startup enterprises in order to enhance their competitiveness. At present, this has been included in annual plan of Ministries, sectors and localities; Tech-mart market and supported policies in science and technology have helped entrepreneurs in connecting supply and demand, technology innovation and improving products quality.

Fourthly, indirect support through incubator models: Promoting incubators to help business operate efficiently increase independence and financial autonomy of the incubators.

Startup enterprises have access to credit; improve management experience, thanks to the support programs. Especially after the "Scheme commercialize the technology in the model of Silicon Valley in Vietnam" was approved by the Ministry of Science and Technology under Decision No. 1383/QD-BKHCN dated 04/06/2013 up to now, nine Startup enterprise groups have been selected from more than 90 startup projects across the country to receive intensive training support. After four months of initial training and receive a fund of $ 10,000, four groups have been invested, five groups in the negotiation process with the foreign venture capital funds. For example, Big Time, a company that provides event management tools, received $ 200,000 in advanced and was valued at $ 1.8 million by investors. Besides, Lozi company, which provides diversified information of places to eat and drink for young people, called millions of dollars from foreign venture capital funds [4]. Thus, some Vietnamese startups, after having received intensive training and initial capital, have called for foreign investment. Many of which have been priced up by five to ten times, that shows these enterprises will have the development prospects if they are supported in the right direction.

3. INADEQUATE PROBLEMS IN SUPPORTING MECHANISM FOR STARTUP COMPANIES:

Firstly, Startup companies find it difficult to access information.

The difficulty that enterprises encounter is that the startup trend has been existing for many years, but only few enterprises get practical support in term of capital or policy mechanism. Although Resolution No. 35 stipulates that the State will give preferential treatment to enterprises in terms of capital and tax [5], many enterprises do not know how to receive these incentives from any entities, which banks are providing preferential loans, and which agencies are providing technical support…

Secondly, the scale of business support is limited. Currently, the focus is on supporting business incubators, credit guarantees, advisory policy on business administration and production efficiency. The policy is lacking in specific support for rural areas, mountainous areas and in agriculture - forestry – fishery.

Thirdly, supporting activities for startup enterprises have not been effective and over lapping. The proportion of SMEs that have access to credit is low; Credit guarantee fund for SMEs is not effective, difficult for accessing land…

These factors have a great impact on the development of startup companies. The scale of enterprises is very small, the technology level is low, the management ability is poor, and the worker's skills have not met

the requirements. In order to meet the needs and operate in a practical way, methods to support enterprises in the coming time should focus on promoting and facilitating mechanism, policy and finance towards synchronous, timely and proper purposes for enterprises to take advantage of. The authors propose some solutions to support the development of startup companies in the coming time as following:

4. RECOMMENDATIONS TO SUPPORT STARTUP COMPANIES.

Firstly, more financial resources should be provided to startup companies in the first three to five years through supporting corporate tax rates.

Recently, the Ministry of Finance is planning to submit to the Government in the National Assembly session in May 2018 to reduce the CIT rate from the current 20% to about 15-17% for SMEs that conform to certain criteria. In our opinion, this is the right direction to show the interest of the State to SMEs, especially while the initial financial capacity is small, that will help supporting small and medium enterprises with more financial resources to expand production and business activities. According to experience of many countries, there are regulations for SMEs that applied tax rate lower than the common tax rate. For example, Singapore applied the common tax rate of 17%, in the period of 2013-2015, the CIT Rebate was reduced by 30% of the corporate tax payable, subject to a cap of $30,000, the CIT Rebate for Year of Assessments (YAs) 2016 to 2017 was reduced by 50% of the corporate tax payable, subject to a cap of $20,000, the CIT Rebate will be extended to YA 2018 at 20% and to YA 2019 at 40% of the CIT payable, subject to a cap of $15,000 and $10,000 [6]. Mr. Pham Dinh Thi, Director of Tax Policy Department, spoke with news agency that in China, the preferential tax rate for small enterprises is 20% while the common tax rate is 25%. Similarly, in Thailand, the common CIT rate is 20%, but SMEs are also entitled to preferential tax rate at a lower level. Accordingly, a company with a taxable income of 300,000 baht or less is entitled to tax exemption, from 300,001 to 3,000,000 baht a tax rate of 15% and over 3,000,000 baht a tax rate of 20%. In particular, in 2016 - 2017, to promote SMEs development, Thailand has made more preferential treatment for SMEs such as: From 01/01/2016 to 31/12/2016: Complete tax exemption for SMEs; From 01/01/2017 to 31/12/2017: An enterprise with a taxable income of 300,000 baht or less is exempt from tax, An enterprise with a taxable income of more than 300,000 baht is entitled to a tax rate of 10%,… [10]. However, as mentioned above, only about 10% of the 100 startups were successful, and the rest of them cannot be on the market in the first year. It proves that, the CIT Rebate is only great for profitable business; otherwise the CIT rebate is meaningless. The most important thing is how to grow startup companies. Specifically, an enterprise that earns $ 100 and pays $ 20 tax (the tax rate of 20%) would be far more meaningful than that earns $ 10 but the tax is reduced to $ 1 (the tax rate is reduced by 10%).According to experience of Singapore, an enterprise that has income at a certain threshold will be exempted from tax. (Specifically: $ 100,000 of first taxable income, 75% of the amount ($ 75,000) will be tax exempt; $ 100,000 of next taxable income, 50% of the amount ($ 50,000) will be exempt; for taxable income up to $ 200,000 or more, the average CIT rate is 17%). In our opinion, the Government should have more supportive tax policies for startup companies, which is to lower tax incentives in addition to tax exemptions, especially in the first phase (3-5 years) so that business could focus on financial resources and survive in the market.

Secondly, reducing the personal income tax -PIT for human resources in high technology.

There is no preferential policy on tax exemption or tax rebate for individuals who are hi-tech human resources. In addition, the Party and the State have identified the development of science and technology as the top national policy and play a key role in the country's socio-economic development. In fact, in order to further develop science and technology, it is necessary to have centralized policies to attract highly

- qualified individuals to participate in the field of science and technology, sectors of prior development through PIT rebate.

Thirdly, to promulgate policies to upgrade the Unlisted Public Company Market (UPCOM) to become a stock exchange for startup companies.

The characteristics of startup companies are to create new products lines or even breakthrough products. Therefore, the most importance is capital support for the development of these enterprises. In addition to issuing policies that allow the formation of Venture capital funds, Angel Funds for startups as other countries, The State can set up a new stock exchange to raise funds for the startup enterprises such as the Korea New Exchange (KONEX) in Korea. Vietnam should upgrade UPCOM to become a dedicated stock market for startup companies to raise capital.

In essence, KONEX is similar to a stock market for public companies, but was established specifically for SMEs and startup enterprises. Public disclosure rules of listing conditions, financial capacity and legal records of KONEX is not as close as those of the Korean Securities Dealers Automated Quotation (KOSDAQ).

KONEX is designed as a stepping stone for SMEs before they meet the listing requirement of KOSDAQ and KOSPI (***Fig.1)***. Above diagram shows the positioning of KONEX in terms of different entry levels. Companies listing in KONEX are required minimum standards of entry which will be around 1/10 to 1/3 of that is required in KOSDAQ. They will need to have a minimum capital of 500 million won, sales of 3 billion won or more, and an annual net profit of at least 300 million Won. Besides, KONEX plans to reduce the cost of listing maintenance by remission of securities registration statements and quarterly reports. On the other hand, to increase competitiveness, a company that is capable of listing on KOSDAQ is not permitted to register in KONEX. [8]
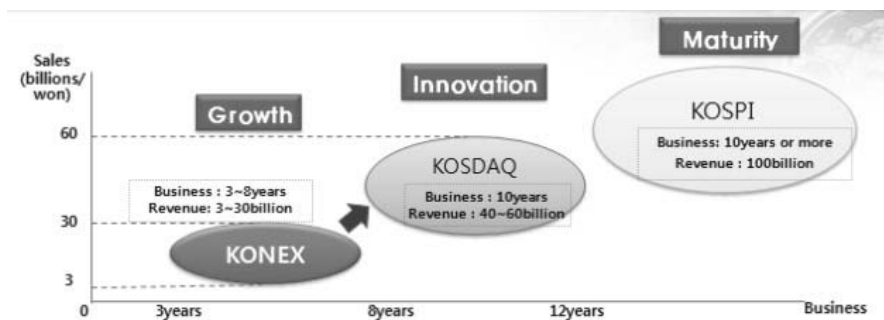
Fig.1 The position of Konex and the other stock markets

Source: https://fsckorea.wordpress.com/

Although in KONEX the rules for listed companies are softer, there are separate regulations to protect investors. For example, direct investment activities on KONEX is limited to professional investors, including venture capital funds, institutional investors or small investors with a minimum deposit of 300 million Won. Small investors are usually allowed to invest indirectly through funds. KONEX also has the annual investment limit for small investors up to 30 million Won, while professional investors are operating under the Law on Financial Investment Services and Capital Markets. Thanks to strong reforms, after 3 years of establishment, the market capitalization of KONEX that has increased more than 8 times, has reached approximately USD 4.1 billion and had 108 listed companies (Initially, KONEX established only 21 listed companies). Especially, the market capitalization of the first 21 listed companies increased by an average of 20% per year. [11], [12].

Fourthly, to promote the dissemination and propagation of the State's support policies; names of each priority development, support sector and banks in charge of capital support for startup companies should be clearly stated.

It can be seen that the State is very close in supporting business, creating a favourable environment for startup companies through Resolution No. 35/NQ - CP dated 16/05/2016. However, this Resolution is only effective when there are effective loan programs for startup companies. At the same time, it is necessary to reduce interest rates for medium and long term loans, further simplify procedures and conditions for lending, implement new forms of lending such as lending along the production and supply chains, increase financial leasing method, etc.

5. CONCLUSION

Based on the experience of some other countries, the policies of direct support through the State budget, credit policy, the model of incubators, and the policies of indirect support through preferential policies on PIT and CIT play an important role in creating financial resources as well as encouraging startup entrepreneurs. Therefore, policy formers need to issue in time support policies to attract venture capital, minimize the risks for Government budget as well as the investors and at the same time, set the scene for startup companies. Comprehensive implementation of the solutions will support startup companies, thereby contributing significantly to the country's development.

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GOVERNMENTS' POLICIES TO SUPPORT CAPITAL MOBILIZATION OF STARTUPS - LESSONS FROM COUNTRIES IN THE WORLD

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ABSTRACT: *Studies show that the beginning period of a business is the time the business is most likely to fail. One of the reasons for this is the lack of funds. From the experience of other countries in setting policies to support startup businesses in attracting capital, and based on the actual situation in Vietnam, the Vietnamese government can enact appropriate policies to support startup businesses. By studying the experiences of the two countries Israel and Korea, the study has identified a number of policies that the Vietnamese government can adopt such as: supporting to develop venture capital industry, developingbusiness incubators, establishing stock exchange for startups, and offering tax incentives to indirectly support startup firms.*

Keywords:Startups, capital mobilization, governments'policies, business incubators*

1. INTRODUCTION

The common trend of startups in the world has always been difficult in the early years.In the UK, 53,7% of businesses survived after 3 years of operation(Nilsson, 2017). According to the US Small Business Administration, 30% of new businesses fail during the first two years of being open, 50% during the first five years and 66% during the first 10 (SBA, 2012). In 26 countries in the European Union the proportion of enterprises existing after 5 years is 46% (Eurostat, 2018). Running out of cash is the second largest cause of failure of startups (McCarthy, 2017).

In Vietnam, the period of 2011-2017 is a milestone marking the development of the business sector over 20 years ago. The number of registered enterprises tends to increase in both quantity and registered capital. In 2014, there were 74,800 new registered enterprises in the country, 94,750 in 2015 and 126,859 registered enterprises in the whole country in 2017, increasing by 15% over the same period of 2016.In general, although the number of newly established enterprises has increased sharply, the number of enterprises that go bankrupt or have stopped operating is still very high. Especially, these enterprises are mainly from the private sector. This shows that the business environment of our country is not very stable and businesses are weak in operation and competitiveness is not high(Ministry of plan and investment, 2018). Assessment of GEM about startup ecosystem in Vietnam over the years shows that in the 12 indicators, the financial index for business is relatively low. In 2017, this index of Vietnam reached 2.27/5, ranking the fourth low (GEM Global Entrepreneurship Monitor, 2018). According to a study conducted by the Vietnam Chamber of Commerce and Industry, capital constraints are one of the four constraints faced by Vietnamese startups (VCCI, 2017).

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The aim of this study is to provide recommendations for Vietnamese government to ease capital mobilization of startups. The paper is organized as follows. Section 2 provides a quick view on financial policy system to promote startups Vietnamese government has been used so far and the concerned problems. Section 3 presents a review of Government's policies to support fundraising of startup firms in Israel and Korea. The final sectionproposes a group of policies Vietnamese government should apply to help startups attracting capital easier in the first phase of business.

The concerned problemsof financial policy system to promote startups in Vietnam

First, startup businesses are usually small and medium-sized enterprises with weak financial capabilities. It is difficult to meet the conditions for listing on the stock market and the corporate bond market. Therefore, the mobilization of capital through this channel has not really facilitated the startup of enterprises:

Capital mobilization channel through issuance of corporate bonds is not really achieved as expected. The reason is due to the lack of investors, the market has not formed the credit rating agencies for enterprises as well as business bonds. At the same time, the legal system is not wide and deep enough to limit the bond market development.

Second, the regulations on venture capital funds are not official yet. Although Decree No. 38/2018/ND-CP dated March 11, 2018 details the investment in startups, there are no specific provisions on the obligations of investors.This restricts the development of this industry, which is really crucial in financing the startups(Ly, 2018).

*Third,*The specific policies in the pilot phase have been applied to the Vietnam-Korea Industrial Technology Incubator in Can Tho, not widely applied to all incubators (Ly, 2018).

2. INTERNATIONAL EXPERIENCES OF SUPPORTING CAPITAL MOBILIZATION OF STARTUPS

2.1. Experience from Israel

In 1984, Israel experienced a crisis with an inflation rate of 450% (The Economist, 2017).After 20 years, Israel, with just over 8 million people, has reached the world. It is known for being a startup country because it has a number of companies listed on the NASDAQ stock market which ranks third in the world; and ranks second on venture capital. There are now over 400 foreign-based R&Dcenters in Israel (The Economist, 2017). Israel's GEI (Global entrepreneurship index) in 2017 is 65.4%, ranked 16th in the world and in a line with developed countries (Thegedi, 2018).

In order to achieve such spectacular results, the Israeli government has been performing policies to nurture startup businesses.

First, developing venture capital funds

Israel has incubated the establishment of technology enterprises based on government resources. However, just after the government entrusted this task to Yozma, the success came. Yozma is a professional investor and the first pillar of the venture capital industry in the country (Yin, 2017).

Creating a venture capital market is Yozma's primary task. In order to fulfill this mission, a huge amount of one hundred million dollars has been invested in Yozma by government. The private sector and foreign investors are enticed to create new venture funds, and the investment committee in these new funds also includes Yozma. In addition, the fund was required to invest in new Israeli companies, (Aviv, 2018).

Yozma 1 is the name of Yozma's first venture capital fund. This fund was established in 1993 (Aviv, 2018). At that time, there were other similar funds in the country. However, startups receive little financial support

from these funds (Yin, 2017). During the first two years of its establishment, Yozma has created 10 mutual funds with twenty million dollars each. In addition to receiving eight million dollars from government funding, the private sector is also a source of hundreds of millions of dollars. In addition, 15 startups were invested direcltyby Yozma. This is due to the policy of the Israeli government, which allows Yozma's subsidiaries to redeem the state's shares. The selling price of each company share is equal to the cost of the state plus interest. This, in turn, paved the way for the privatization of Yozma. Each of these funds was required to cooperate with foreign institutions with experience in venture capital (Aviv, 2018; Yin, 2017).

Finally, in 1998, Yorma was fully privatized as the Israeli venture capital market was fully developed. Today, in the Israeli venture capital industry, Yozma and its subsidiaries continue to play an important role. Domestic investors are called upon by Yozma to cooperate with reputable investors from the United States and Europe. Yozma II was established in September1998 and Yozma III was established in 2002. Today, a total of $220 million is managed by all three of Yozma's parent funds, investing in 50 unlisted companies. Among these companies, some companies have invested in the US and European stock markets. By the end of the 1980s, only a small number of Israeli companies were first offering on the NASDAQ stock market. Today, this number has reached the third largest in the United States and Canada (Yin, 2017).

Second, support enterprises through enterprise incubators

Even with good ideas, since the initial startup phase is risky, startups are not eligible to invest from private funds or investment companies. Most investors do not like risk so they only invest in startups that have grown to a certain size with the shaped products and the lower risk. Therefore, startup funding is extremely important and essential in this phase.

In Israel, startups are funded through incubators. There is a close-knit relationship between Yozma and a network of twenty technological incubators across Israel. In most stages of business development there is support from Yozma, but most concentrated in the first stage. On average, each project in incubators receives about $600,000 from the budget. The government subsidizes about 85% of this amount and 15% is provided by the incubator (Aviv, 2018). Further investments in subsequent business development stagescan be considered. The project only has to repay the aid in the case of success at a rate of 3% of revenue each year (Yin, 2017). Startup companies can register for new projects and continue to receive new support in case of failure. Today, the government funds about fifty million dollars in 18 state-funded incubators. About 85 startups are born each year in the incubator. Among them, there are more than ninety percent completed (Yin, 2017).

2.2. Experience from Korea

Korean's GEI (Global entrepreneurship index) in 2017 is 54.2, ranked 24th in the world (Thegedi, 2018). In Korea, the number of small and medium enterprises accounts for 99% of the total number of enterprises (Mss.go.kr, 2018). In order to be able to support this group of enterprises, the government has enacted many financial policies system for startups, including the establishment of a separate stock market for startups, as well as tax incentives.

First, establishing a stock exchange for startups

In order to support startup businesses access to capital from the market, in 2013 the Korean government established the Korea New Exchange (KONEX) (OECD, 2018). In essence, the KONEX is similar to a stock exchange for public companies, but is specifically established for startup businesses with looser listing conditions, financial capacity.

Startup companies registered on the KONEX only meet one third of the total number of registration requirements on the KOSDAQ Stock Exchange: KOSDAQ Securities does not require businesses to have an average of twelve years above. While In order to list on KOSDAQ, businesses must have a minimum equity of three billion won, registered enterprises on the KONEX arerequired toown a minimum equity of 500 million won (Kang, 2017). In addition, to help increase the competitiveness of startups, KONEX does not allow eligible businesses to register on KOSDAQ to be listed on KONEX (OECD, 2018).

Although the rules for listed companies are looser, the Korean government has specific strong regulations for the operation of the KONEX to protect investors as well as minimize unwanted transactions. For example, direct investment on the KONEX is limited to professional investors, including venture capital funds, institutions. Individual investors are usually allowed to indirectly invest through funds (Kang, 2017).

After four years of establishment, in 2017 the market capitalization on the KONEX floor has increased approximately 7.5 times, reaching about $ 3.7 billion and 150 listed companies (compared to 29 listed companies at the time of establishment). The market capitalization of the first 29 listed companies increased by an average of 20%annually. With an average capitalization of $ 45 million, even though these companies are still in the startup business, the size is large enough to attract investors (Kang, 2017).

Second, issuing of tax incentives policies

In 2014, Korea has introduced regulations on tax exemptions, reductions and refunds for startups operating in all sectors. For example, for small businesses, depending on the circumstances and specific operating conditions in accordance with the law, they will be reduced from 5% to 30% or exempt from certain taxes such as VAT and registration tax (OECD, 2018).

3. LESSONS LEARNT FOR VIETNAMESE GOVERNMENT

In general, based on the Israeli and Korean business support policies, the Vietnamese government should support startups to have a closed process to mobilize capital for their respective development phases. In the initial stage, startup businesses can use government funds through investment funds to assist them survive. When they reach a sufficiently large size, they can raise capital through stock exchange for startups. Until maturity, the company can move to mobilize capital at the stock exchange for large enterprises.

Below are some specific recommendations:

*First, develop venture capital funds.*Vietnamese government needs to provide capital to startups through venture capital funds. Government-funded investment funds will be the backbone for attracting venture capital flows domestically and internationally. In the long term, the government will divest from these funds.

Second, the government venture capital funds should provide capital through business incubators. According to Isenberg (2010), it would be wrong to let startup businesses get financing easily. Therefore, it is important to develop a rigorous process for appraising projects to ensure that capital is invested effectively.

Third, develop the stock market for small and medium enterprises. The idea of building a stock market specialized for startups based on KONEX model is a good idea to help startup companies to access capital with lower standards. The market is more flexible, benefiting both businesses and investors.

Fourth, promote the development of corporate bond market. In addition to capital mobilization from the stock exchanges, bonds are also an important means of raising capital. Therefore, developing the bond market will make it easier for startups to raise capital.

CONCLUSIONS

One of the biggest obstacles for startups is access to funding. Having a proper funding mechanism will boost the efficiency of creative startup businesses. In the context of Vietnam, when the policies on startup support have not been fully developed, learning experience of other countries is very necessary. Based on the study of the experience of two countries, Israel and Korea, the paper has proposed a number of policies to support capital for startup businesses such as developing venture capital industry, enterprise incubators, establishing specialized stock exchanges for startup enterprises, as well as developing the bond market. Due to time limitation, the detailed solutions can be elaborated. This may be the direction for further research.

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FOSTERING ENTREPRENEURIAL SPIRIT OF FEMALE STUDENTS IN HIGHER EDUCATIONAL INSTITUTIONS

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Abstract: *The purpose of this paper is to point out the significant importance of entrepreneurship education program in higher education in fostering entrepreneurial spirit of female students in higher educational institutions by examining current trend, characteristics of male and female entrepreneurs, comparing and contrasting the similarities and differences between the two and explaining what entrepreneurship is, who are the entrepreneurship and entrepreneurship traits. In order to point out the need of HEI on helping women realize their own strength, potentials, by provide them with knowledge and skills necessary as well as support them to take advantages of all possible resources to create jobs for themselves and for others. Lastly this paper also discusses the most commonly cited challenges for women entrepreneurs as well as suggestion and recommendation.*

Key words: *entrepreneurship, female entrepreneur, woman business owners, job-creator*

1. INTRODUCTION

Instilling entrepreneurship into education has been high on the political agenda the last few decades. Intended effects of entrepreneurship education include job creation, economic growth, competence development, increased student engagement and societal change. The increasing importance of entrepreneurship education and its contribution to economic growth and employment have been primary reasons for many universities to offer entrepreneurship education subjects both in academic and non-academic programs.

There is a controversial question of whether those courses meet the real need of female students. It is unnecessary to question the immense impact of business women on national economic development as they play an indispensable role in the labor force of every nation and female entrepreneurship is a key driver of innovation, growth and jobs. However, entrepreneurship statistics have shown small proportion of women as job- creators all over the world, especially in developing countries. According to IFC and World Bank enterprise surveys, female only hold position of top managers in 18.3% of companies worldwide while only just over one-third (35%) was (co-) owned by a woman.[1] Although the proportion of firms with female participation in ownership in Viet Nam is relatively high, standing at 51 per cent[2] with "fully 34% have

university or graduate degrees"[1] , the fact that an increasing number of women acquire higher education degrees allow a more positive expectation on the rise of women as entrepreneurs with a focus on providing appropriate training and education for them.

The purpose of this paper is to suggest some implications for higher education institutions to improve the practicality of their entrepreneurial education programs so that entrepreneurial spirit of female students will be intensively fostered, hopefully resulting in more engagement of female graduates in future entrepreneurial activities and sustainable national developments.

For this study, by investigating the availability and features of entrepreneurship education programs offered at two higher educational institutions in Vietnam and Thailand as well as researching into secondary data of previous studies relating to ASEAN, the discrepancy between what women business owners need and what the school's entrepreneurial education program offers is discovered as a ground for suggested implications.

2. LITERATURE REVIEW

According to Guelich (2015)[2] , the Global Entrepreneurship Monitor GEM, 126 million women worldwide are operating new businesses and another 98 million do so at the helm of established businesses. Yet –from a global perspective – we face a huge gender equality gap. Some countries like Pakistan have a nearly non-existent female entrepreneurship rate; while on the opposite side there are currently only six economies where men and women start and run businesses in an equal ratio, Thailand being one of them. Beside two more ASEAN countries including Indonesia and the Philippines, three others come from Sub-Saharan Africa: Nigeria, Zambia, and Botswana. Increasingly, multinational organizations range from the World Bank to Coca Cola developed their programs to support female entrepreneurship as they are aware that women entrepreneurs are crucial to economic growth around the world.

For ASEAN member states, the Global Entrepreneurship Monitor (GEM) provides another source of data to examine gender differences in entrepreneurial activity. Six ASEAN countries (Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Viet Nam) participated in GEM studies in 2014 or 2015. Key findings show that women are more likely to be involved in early-stage entrepreneurial activity than men (i.e. either actively trying to get a business started or own a new business that is less than 42 months old), except in Singapore where the female rate is less than half the male rate (Figure 1). The overall female early-stage entrepreneurial activity (TEA) rate for the six countries is 105.7% of the male rate. Notable, however, is the very low TEA rate for both men and women in Malaysia (only 3.0% for women and 2.9% for men).

Figure 1: Female and male early-stage entrepreneurial activity rates in 6 ASEAN countries [3]

	Philippine	Indonesia	Vietnam	Thailand	Singapore	Malaysia
TEA rate-female	19.5%	17.8%	15.5%	14.8%	7.2%	3.0%
TEA rate-male	14.9%	17.6%	11.6%	12.7%	14.8%	2.9%
Female to male rate	130.9%	101.1%	133.6%	116.5%	48.6%	103.4%

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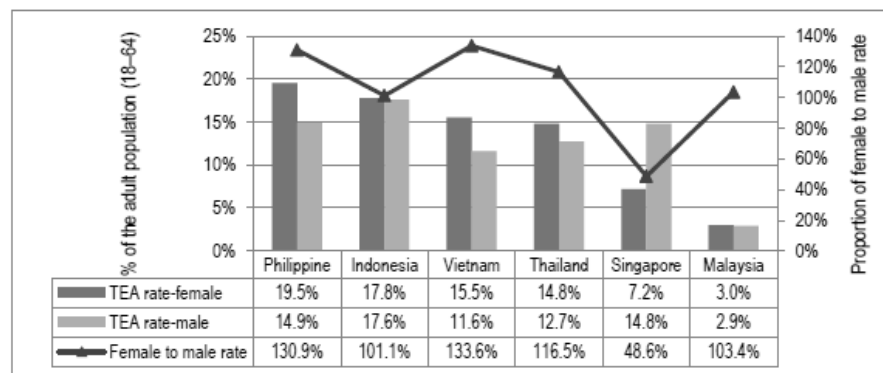
[1] National Survey of Women Business Owners in Vietnam 2015
[2] Ulrike Guelich (2015), *GEM ASEAN Regional Entrepreneurship Report 2015/16*
[3] Sources: 2014 data for Singapore: Chernyshenko et al. (2015), Global Entrepreneurship Monitor 2014:Singapore Report. 2015 data for the remaining ASEAN-5: Xavier et al. (2016), ASEAN Regional, Entrepreneurship Report 2015/2016.

The above figure 1 has showed the strong evidence that ASEAN woman entrepreneurs are more likely to contribute to their societies by re-investing their profits in education, their family and their community than men. There are many examples around the world, where women entrepreneurs are transforming families and society besides making contributions to business development.

Beside family and community, education is one of their priorities. In order for an economy to truly benefit from a society's entrepreneurial potential, everyone must be able to participate and be supported in this activity, regardless of gender, age, education, income and characteristics. An increasing number of women who start their own businesses in Thailand now are better educated than in former years. This is also shows that most of them run their businesses after having obtained a bachelor degree, especially in Bangkok, the North and the South of Thailand. Nevertheless, some statistics indicate that educational level of women entrepreneurs in general is lower than that of male counterparts. For the development of woman entrepreneurs as part of gender quality, education and training initiatives should be paid attention by the government in order to increase entrepreneurial activity in business services–both female and male- to move towards an innovation- and growth-driven economy.

According to UNESCO Institute for statistics, female demand for tertiary education in Southeast Asia continues to grow and female educational attainments could improve at this level of education, this reflects the growing female student in education and the necessity for higher education institutions (HEIs) to provide the quality entrepreneurship education (Figure 2 below), differences in graduation rates remain. For example, in Singapore the share of adult women with tertiary education approximates 40%, a figure far exceeding the OECD average. The same share in the Philippines is close to the OECD average (28% as compared with 30%), with significantly more women than men completing tertiary education. By contrast, completion rates of tertiary education for women in Indonesia and Viet Nam do not exceed 10%, while in Cambodia are as low as 1%. Higher education attainments therefore resonate well the differences across countries in the level of per capita incomes. Yet, in a number of Southeast Asian countries gender gaps in science, technology, engineering and mathematics (STEM) subjects appear to be less marked than elsewhere in the comparator countries, including in OECD countries. Importantly, in Thailand, Myanmar, Brunei Darussalam, Malaysia and Indonesia, women make for more than half of graduates in science, this is another point of consideration for educators.

Figure 2: Proportion of adults (aged 25+) who have completed tertiary education[1]

2014 or closest available year, as a percentage of the corresponding male/female population

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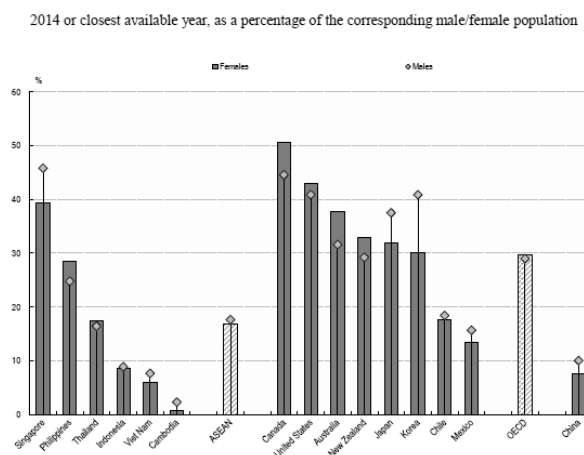
1   OECD 2017, Strengthening Women's Entrepreneurship in ASEAN "Towards increasing women's participation in economic activity" September

Characteristics of Male and Female Entrepreneurs

Several researches suggest that certain natural characteristics that make people successful in doing business. The process of becoming an entrepreneur may be due to the intrinsic nature of these characteristics rather than a rational process. Entrepreneurs are people who believe that they can control their destiny with an ability to concentrate on the new venture and confidence in their abilities is very necessary for the entrepreneur. In order to undertake the risk of starting a new business, a person must be confident that it will succeed. [1]

Entrepreneurs who have certain traits that help them to become business-owners such as risk-taking, full of energy, hard working, confidence and good visionary to exploit opportunities. There are successful male and female entrepreneurs all over the world. Some researches have found that there are some characteristics that are found in both men and women. There are some differences between the two. In order for an educator to appropriately develop entrepreneurship program or learning activity for both male and female students, educators need to understand the characteristics of female and male entrepreneurs in the following aspects including decision making styles, risk tolerance, goals for the business, financing of the business, management styles, networking ability, motivations.

Table 1: General characteristics of female and male entrepreneurs[2]

Male Entrepreneurs	Female Entrepreneurs
Decision Making Easy	Difficulty in Making Decisions
Business focused on Economy and Cost	Business Focused on Making Social Contribution and Quality
Willing to Take Financial Risk	More Conservative When it Comes to Financial Risk
Task Oriented Managers	Focus on Good Relationships with Employees
Business manufacturing and construction	Business small retail and service orientation

Table 1 above indicated that male and female entrepreneurs have different characteristics. Men tend to make them quicker and women need more time. Male entrepreneurs focus on making sure costs are under control and are more profit driven. Women seek to make a social contribution and want to insure their quality. Men and women tend to start different kinds of enterprises. Men are more willing to undertake the risk than women. Men tend to be more task oriented than women. Good relationships with employees are more important to women.[3]

From the above information, no one can deny that women have stronger potential for start up a business than men such as community contribution and social development in stead of focusing on profit only. According to Moore and Buttner, (1997)[4], they found the most important reason why women become entrepreneurs is that they want to feel self-fulfilled. Women care about their clients and feel some sort of societal responsibility as well.

According to Rosa P, Carter S, Hamilton D (1996)[5], their research proved that it is necessary to provide

[1] Bolton B, Thompson J (2000), *Entrepreneurs: Talent, Temperament, and Technique,* Butterworth-Heinemann, Oxford.

[2] Sexton DL (1990), Research on women-owned businesses: Current status and future directions. In: Hagen O, Rivchum C, Sexton DL (eds.) Women-owned Businesses, Praeger, New York, NY, 183-193

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[5] Rosa P, Carter S, Hamilton D (1996), *Gender as a Determinant of Small Business Performance*, Small Business Economics 8: 463-478

support and promote female entrepreneurship because female entrepreneurs were more likely to close to their businesses than men even they have fewer resources to start their businesses. Also, the study revealed that women used innovative strategies to overcome the shortages they faced and the educators is the key to get them ready for obstacles.

Risk tolerance

Entrepreneurs are often seen as people who are willing to take a risk. According to Jianakoplos and Bernasek (1998)[1], men are much more willing to take a financial risk than women. Women have a different attitude toward risk and are less risk tolerant. .

Table 2: [2] *The risk tolerance of male and female entrepreneurs*

Male Entrepreneurs	Female Entrepreneurs
Less Concerned About Hazards in Business Ownership	More Concerned about Hazards in Business Ownership
Feel Have Enough Information	Require More Detailed Information
Require Less Social Support to Start Business	Require Social Support to Start Business
Willing to Fail in Business	Less Willing to Fail in Business
Propensity for Risk in General	Risk Adverse Generally

Table 2 above examines the risk tolerance of male and female entrepreneurs. Men are more willing to take risks when it comes to business. Women are more conservative, particularly when it comes to financial risk. Men require less information when making decisions than women do. Women need to have more information prior to making decisions. Women require much more social support prior to starting up a business than men. Men are also more willing to fail in business than women. This allows men to take greater risks when it comes to growing the business. Female entrepreneurs may not grow their businesses as quickly because they do not want to risk failure. In general, men are much more willing to take risks than their female counterparts.

Financing

There are some differences between men and women regarding the financing of the business. Women usually start up their business with less capital than men and their businesses tend to be smaller. Even though number of researches suggest "access to finance" as one of the top barriers for women, even they had a good track record in business, they were still viewed as more of a risk than men. According to Holmquist C (1997)[3], women did excellent planning, focused on market and technology expansion, were more committed to their businesses and were willing to get additional capital for growth. They had formal organizational structures, planned for growth, and used more financial resources. Women also adopted a slower growth strategy and were less risk adverse (Table 3 below examines the financing of male and female entrepreneurs).

[1]   Jianakoplos NA, Bernasek A (1998), *Are women more risk averse?* Economic Inquiry 36: 620-630.

[2]   Holmquist C (1997), *The other side of the coin or another coin? Women entrepreneurship as a complement or an alternative*, Entrepreneurship and Regional Development 9: 179-182-

[3]   Holmquist C (1997), *The other side of the coin or another coin? Women entrepreneurship as a complement or an alternative*, Entrepreneurship and Regional Development 9: 179-182-

Table 3:[1] The differences between men and women regarding the financing of the business

Male Entrepreneurs	Female Entrepreneurs
More capital	Less capital
More debt	Low debt
	A lack of track record for financing
Bank trust male	Bank not trust female
Easy to access to capital	Not easy to access to capital

Motivation

There are some differences in what motivates female and male entrepreneurs. According to Brush CG (1992)[2] there may be differences in male and female personal and business profiles. Men and women start their businesses in different sectors, different types of products. There also may be differences in the way they structure their business. Women may have differing goals like to be autonomous on the contrary a man may have purely profit goals.

Table 4[3]: The motivation of male and female entrepreneurs

Male Entrepreneurs	Female Entrepreneurs
Externally focused	Autonomous
Strong initiative	More positive
	Good common sense
	Think critically
	Very aggressive
	Own boss
Earning more money	Achieve a sense of accomplishment
Previous experience	

Management Style

According to Brush CG (1992)[4], men and women also may differ in the way the think regarding the business. Women tend to be more intuitive and men more logical. Women's communications skills are excellent. They tend to be better listeners and can understand the needs of their employees. Female entrepreneurs tend to manage differently than their male counterparts. Management is how the entrepreneur manages the business. The most distinct differences between men and women as entrepreneurs are in their management styles. Women manage using more "feminine" strategies than men. Women tend to value the relationships with their employees more than the task at hand. Men and woman also may think differently. Male entrepreneurs are more logical thinkers. Female entrepreneurs are more intuitive thinkers.

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[1] Holmquist C (1997), *The other side of the coin or another coin? Women entrepreneurship as a complement or an alternative*, Entrepreneurship and Regional Development 9: 179-182-

[2] Brush CG (1992), Research on women business owners: Past trends, a new perspective and future directions, Entrepreneurship Theory and Practice 16:5-30

[3] Holmquist C (1997), *The other side of the coin or another coin? Women entrepreneurship as a complement or an alternative*, Entrepreneurship and Regional Development 9: 179-182-

[4] Brush CG (1992), *Research on women business owners: Past trends, a new perspective and future directions*. Entrepreneurship Theory and Practice 16: 5-30.

Table 5: Differences in management of male and female entrepreneurs [1]

Male Entrepreneurs	Female Entrepreneurs
Logical thinkers	Intuitive thinkers
Oriented leaders	Communicative and expressive behaviours
	Communications skills are excellent
	Understand the needs of their employees
Grow their businesses	Grow their businesses
More aggressive when it comes to expansion	Cautious and conservative about expansion

Networking

Networking is very crucial to the success of any business. Networks are valuable sources of information and can help during the startup phase of the business. Family can be a very helpful network when it comes to decision making.

Buttner H (2001) [2] suggests that networking may be more critical than having financial resources. Women and men can be excellent networkers; however men usually have larger networks that are stronger, with more depth and strength. Women's networks are often smaller, and have less density. Women networks tend to be collaborative external relationships and are not as prone to use clubs, business associations and networks. Their networks include their family, staff, society and other business relationships.

Table 6: The network of male and female entrepreneurs [3]

Male Entrepreneurs	Female Entrepreneurs
Large network	Small network
Organizations	Family and friend
More access to network	Less access to network

From the table above, we can see the differences between male and female entrepreneurs. In general entrepreneurs may be similar demographically. All entrepreneurs face obstacles and barriers when starting their enterprises. However, for women there are some additional barriers. Women may not have received the experience and training to make them successful that their male counterparts have had especially from HEI's. Access to sufficient capital is also a challenge for female entrepreneurs. Some banks may not have the confidence in female entrepreneurs that they have in males. It is also difficult for women to balance work and home. Women may not have access to some of the networks that men have. These networks may provide more financial assistance and mentoring. There are also cultural barriers that can prevent women from starting a business and ultimately being successful. In some cultures women are not viewed as equal to men and are not given access to the resources they need for their enterprises.

With the above additional barriers for women entrepreneur is it necessary for every nations to foster female entrepreneurship at their higher educational institutions.

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[1] Holmquist C (1997), *The other side of the coin or another coin? Women entrepreneurship as a complement or an alternative*, Entrepreneurship and Regional Development 9: 179-182-

[2] Buttner H (2001), Examining *female entrepreneur's management style: An application of a case of Pakistan*. Journal of Business Venturing 11: 507-529

[3] Holmquist C (1997), *The other side of the coin or another coin? Women entrepreneurship as a complement or an alternative*, Entrepreneurship and Regional Development 9: 179-182-

3. DISCUSSIONS

The primary source of data used for this study is secondary data taken from previous researches and from internal documents of two universities chosen.

Looking deeply into the curriculum of hundreds of degree training programs at both undergraduate and graduate levels of two higher educational institutions investigated revealed the following facts:

First, both universities set up policy governing students' entrepreneurial activities and offer firm support in terms of management, infrastructure, financing and mainly advisory boards for various forms of their entrepreneurship activities. As a result, the entrepreneurship education is not only offered and embedded in the curriculum for business major students at both universities but also in the form of optional courses and extra-curriculum activities for non-business major students. Both institutions organize a lot of activities to encourage entrepreneurship at campus such as seminars, workshops, selective training sessions, business plan competition and the like. However, in terms of content, all of the existing entrepreneurship courses emphasizes the theoretical knowledge while the practical application of the subject is seemingly neglected. Students are equipped with foundation knowledge such as philosophy, theories with minimum exposure to the practical aspects. In addition, skill development and tacit experiences are absent. The application to imagination, creativity and innovation are theoretically explained and hence, it is quite difficult for students to emulate and grasp the experience of being an entrepreneur. All additional entrepreneurial activities such as seminars, workshops, entrepreneurship competition and the like as extra-curricular activities are in fact not informative and motivating enough for students to realize any significant relationship between entrepreneurship knowledge and intent to venture into business.

Another noticeable point taken from an insight into the content of those mentioned courses is that no courses (both academic and non-academic) are specifically designed for female students or aim to develop self- efficacy among women students regardless the fact that females take a much larger proportion in schools' population in comparison to men and that characteristics of women are quite distinct from that of men. Moreover, it seems that "entrepreneurship education and trainings conducted are dominated by male role models" [1]. Also, a vast majority of guest speakers are males and an overwhelming entrepreneurial success stories feature businessmen rather than women.

In relation to ratio of female and male students, statistics of 2017 intake showed that female students took 68, 59 % in the Vietnamese university and 75 % freshmen of 2018 are women. In the past, for example, figures of year 2005 show the number of males passing entrance exam outnumbered that of females. Similar situation happens in Rangsit University (Thailand) when 60 % freshmen of 2018 are women. Figures of alumni in recent three years at two investigated universities showed quite contradictory results in terms of genders as job-makers. Most of female alumni are in wage employment and the number of women entrepreneurs is less than one forth that of men. Statistics concluded that male alumni were more active in entrepreneurship than women.

In addition, researches have indicated that women in fact possess different entrepreneurial styles and have different potentials in comparison to that of men. Additionally, they "learn differently from men and

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[1] Olena Bekh, (2014), Training For Women Entrepreneurs: An Imperative For Growth And Jobs, Policy briefing, extracted from https://www.etf.europa.eu/en/publications-and-resources/publications/inform-issue-14-training-women-entrepreneurs-imperative

value the increased level of sharing a relationship-building "[1]. Therefore, entrepreneurial learning have to target different qualities in men and women so that women's potentials can be fully explored without having to take males 'roles. From literature reviews, it seems that one of the reasons why the potential of women has not been fully recognized, resulting in the lack of adequate investment from parties involved is that females themselves are not aware of their own potential or do not know how to apply it to a business activity. All trainings given do not differentiate different qualities in men and women engaged in business activity and offer training in males' way. Meanwhile, according to the survey conducted by IFC-GEM/ MPDF in Vietnam, women business owners are much more likely to value women-focused programming than training and education programs that are open to all business owners.

4. SUGGESTIONS

It is undeniable that men and women need the same basic business training and support to develop core skills and competences to be successful in entrepreneurial activity. However, in order to increase women's awareness about entrepreneurship and inspire them to engage into a near future of being job-makers require more than simply offering general courses. It is apparent that the participation of women as entrepreneurs not only can be useful in benefiting their households and national economies but also affect the "entrepreneurial mind set of future generations who may come to consider self-employment as a natural career option following the examples of their mothers" [2]. Choice of being an entrepreneur requires risk taking spirit and a vital degree of self-efficacy as well as a mix of knowledge, skills and attitudes base of flexible and adaptable self- realization. However, currently, academic research indicates a lack of all those factors among women. While women now appear to possess more higher education degrees, here is a demand that entrepreneurial education at higher educational institutions have to fully equip them with both foundation knowledge and skills essential for them to become job-creators graduates.

Relating to general entrepreneurship trainings to develop core skills and competences necessary to be successful on entrepreneur activity delivered to both male and females students, because entrepreneurship cover a wide variety of knowledge and skills and it is not only about learning the theories of business, but also demands extensive exposure to personal practical experience[3]the application of an effective pedagogical method by experienced and competent trainers is the first recommendation. Examination-oriented courses with a lot of theories will not be very effective in nurturing students' entrepreneurial attitude or positively affect graduates' tendency to be startups. Instead, a focus on developing qualities like optimism, confidence, risk-taking propensity, self-efficacy and the like is likely to influence more. Secondly, entrepreneurship knowledge such as business behavior, entrepreneur mind set, and entrepreneur characteristics, planning business plan, management skills and the like should be delivered in close relation to practical activities to enhance students' tacit knowledge. Allowing opportunities for students to put theories into practice is quite essential in motivating students. By planning their own business startup plan, executing their proposed projects, making cut throat decisions, taking risks and responsibility, students

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[1]   National Survey of Women Business Owners in Vietnam 2015

[2]   Olena Bekh, (2014), *Training For Women Entrepreneurs: An Imperative For Growth And Jobs*, Policy briefing, extracted from https://www.etf.europa.eu/en/publications-and-resources/publications/inform-issue-14-training-women-entrepreneurs-imperative

[3]   Thomas M. Cooney, (2012), *Entrepreneurship Skills for Growth-Orientated Businesses,* OECD Report for the Workshop on 'Skills Development for SMEs and Entrepreneurship', extracted from http://www.oecd.org/cfe/leed/cooney_entrepreneurship_skills_HGF.pdf

can learn valuable tacit knowledge through experience and discovery[1]. Regardless of the outcome of their project, students' confidence level is surely boosted.

Concerning the need of specifically fostering female students' entrepreneurial spirit in higher educational institutions, it is advisable that the following suggestions should be noticed: First, it is necessary to offer gender-specific trainings whose lecturers must be more sensitive and have profound understanding of female entrepreneur characteristics and particular demands of women business owners so that they can address learners more effectively in the most beneficial way for female students. In addition, course content should pay a particular attention to women's professional growth and skills issues. Gender-specific training "is not a reaction o perceived or actual discrimination but is recognition of learning style differences and customer preferences". [2]

Second, either formal and informal entrepreneurial education or trainings should be gender sensitive in the way that self- efficacy of female students can be fully developed and that female students can realize their own potential and possibility in successfully being entrepreneurs. It is best if schools can provide entrepreneurship trainings which pay special attention to boost female entrepreneurial potential and encourage their engagement into setting and developing enterprises at the later stage of their careers. Such training should be linked to the sensitization and awareness aspects with better introduction of female role models.

In addition, it is suggested that female students be put into available support systems provided by business women networks and communities (who can be school's alumni). Such kind of links between the worlds of business with women successful stories would be best motivation for females. Additionally, mentoring and coaching from the networks will have positive effects on business startup survival and on confidence among female students.

Female entrepreneurship mentorship programs should be developed to provide female students with all forms of support such as mentoring, coaching, counseling, or dissemination of information, etc.

4.   CONCLUSION

The problem of the world today is seemingly no longer gender discrimination, at least in Vietnam and Thailand where the number of female graduates are relatively higher than that of males and the ratio of businesswomen is relatively high in the population. The issue now is how to help women realize their own strength, potentials, provide them with knowledge and skills necessary as well as help them take advantages of all possible resources to create jobs for themselves and for others.

The most commonly cited challenges for women entrepreneurs are the lack of entrepreneurial education, training opportunities, business support systems, access to capital and access to network. Higher educational institutions can have great impact on making female students ready to engage into a future entrepreneurial life by offering them both more effective general entrepreneurship trainings and practical gender- specific entrepreneurship education and trainings. Once female students are well prepared for a future of entrepreneurship, they can successfully participate in business activities and hence help to "transform the quality and structure of the workforce and the society as a whole" [3]

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[1]   A.V. Ewijk, (2016), Journal of entrepreneurship education owned and published by Jordan Whitney

Enterprises, Inc., PO Box 1032, Weaverville, NC 28787, USA.

[2]   National Survey of Women Business Owners in Vietnam 2015

[3]   Social Development Division of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) (2018), *Fostering Women's Entrepreneurship in ASEAN: Transforming Prospects, Transforming Societies*, United Nations Publication.

RESEARCH OF FACTORS AFFECTING THE RESULTS OF BUSINESS STARTUP OF THE GRADUATE STUDENTS IN THE BUSINESS ADMINISTRATION SECTOR AT THE UNIVERSITY OF FINANCE - BUSINESS ADMINISTRATION

Dao Van Tu*

ABSTRACT: *Starting business of graduates in business administration tends to increase, but success is modest. This research aims at identifying the factors affecting the business startup results of students graduated in business administration from the University of Finance and Business Administration. Data were collected from the investigation of 278 graduates who had started their business. The study uses the Cronbach's Alpha test method, EFA and linear multivariate regression. The research results show that there are 5 factors influencing the business startup results of the alumni in business administration at The University: The business idea; Spirituality, attitudes, qualities start up business; business startup knowledge, Finance for start up business, Skills start up business. The implication of this research is that it contributes to the improvement of the program, the training methods for business administration students, and public sector policies to promote and improve the efficiency of business startups. students in general and students in business administration in particular.*

Key words: *business startup; students; business administration; university finance and business administration.*

1. INTRODUCTION

The fact is that the unemployment rate is high, even graduates of colleges, universities, subjects are well trained also have a high unemployment rate, do not work properly trained. Starting business is one of the best solutions for those who want to change their situation, find work freedom, create jobs for themselves and work for them. others.

Students of Finance and Business Administration are not out of the above trend, more and more students after graduation have chosen the way of starting a business or a business succession from their family. The University of Finance - Business Administration is not a top-tier university so the capacity for large workplaces is lower, so the percentage of students who graduate after starting their own business create jobs for yourself is pretty much. The main purpose of starting a business is to earn a living. This shows that the business startup of the students of the University of Finance - Business Administration is beating with the "startup country", having good life and potential for development.

In fact, it is not easy to start a business in general and start a student business in a successful environment in Vietnam. According to statistics, the young business often fall easily in the early years, in which students account for a high proportion. In a report released by the US Small Business Administration, 66 percent of US startups could survive in two years, 44 percent could survive for four years. Another analysis shows

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[1]   University of Finance and Business Administration.

that failure rates account for 60% of the first five years, and some evidence suggests that this may be as high as 80% in developing countries such as Vietnam. The main reason is the lack of capital (40%), lack of knowledge about small and medium enterprise management (50%), lack of practical experience in business environment (30%), In other words, a high percentage of young entrepreneurs and startups are looking to the good fortune of establishing a business.

How do students of the University of Finance Business Administration after graduation have started their business? Some of the most pressing questions for this issue are:

What is the current status of business startups of the University of Finance-Business Administration?

What factors affect the startup results of the alumni of the University of Finance-Business Administration?

What measures should be taken to promote the business of the University of Finance and Business Administration more and more effective; What solution to maintain and develop post-startup businesses?

To answer the above questions, study the factors affecting the startup results of students who have graduated from the University of Finance-Business Administration to explore the factors of influence, internal causes at the entrepreneur's ability level and the startup environment. Based on the results of the research, solutions and recommendations to stimulate and encourage the potential for startups of alumni students and alumni will help managers make decisions. Be involved in training to improve the startup potential as well as the mechanisms and policies and legal environment to develop the business of students, alumni of Vietnam in general and the University of Finance business in particular, thereby contributing to solving the problem of employment, unemployment for the socio-economic development of the country.

2. RESEARCH METHODOLOGY

The article uses the method of investigation, through the issuance of questionnaires; statistics, data synthesis, analysis of survey data by SPSS statistical software; A survey of 300 alumni graduated in business administration from the University of Finance - Business Administration (10 courses, graduated from 1999 to 2008) is the owner of the business.

2.1 Research model

Business startup is understood as an individual (alone or with others) taking advantage of the market opportunity to create a new business. Starting a business is the opening up of a new business, self-employment, self-employment.

Overview from previous studies has shown the factors that affect the startup of students, such as Sexton (2001), Smith & Smith (2000) Indicates that personal identity is the main reason for a successful individual to start a business; Management System International, 1990 points out the 10 factors to be a successful entrepreneur: Opportunity, initiative, persistence, risk tolerance, commitment to work, goal orientation, learn, plan and manage, communicate, confident and independent; Smilor (1997) argues that enthusiasm is an important element of entrepreneurial startups; active, responsible, motivated starters will stand up to fluctuations; According to Davidson (1991) and Vesper (1990), business skills and low-tech skills can reduce the desire to start a business; According to Pennings (1982), financial resources play an important role in increasing the rate of startups, only a small number of people have the capital to start a business, while most have to raise outside capital when starting a business; The external environment is considered to be one of the factors that influence the intention to start a business, as noted by Drucker (cited by McQuaid, 2002). According to Gnyawali & Fogel (1994), there is a positive relationship between the environmental factor and the success of the entrepreneur.

In Vietnam, according to Nguyen Thi Yen (2011), business readiness, personal character and entrepreneurial passion are the personal factors that influence the student's business startup intention. Besides, the factor of capital also contributes to the effect, however, the fact that the students after the school had difficulty in mobilizing capital, dared not boldly capital to start a business is weak. Funding factors have a profound effect on the mentality of business startup students; For female MBA students in Ho Chi Minh City in the study of Hoang Thi Phuong Thao (2013), individual characteristics are the most influential factor in the *business startup*'s intention. In addition, capital for startups, propulsion, family support, traction motives, and family barriers also influence the mindset of business startup. On the basis of inheriting models from these studies, Phan Anh Tu and Nguyen Thanh Son (2015) complement and expand the empirical model by adding exploratory elements such as: key, family background, persistence, business desirability, and state and local policy into the research model to determine whether and how these factors affect the intention business startup of economics students have graduated.

From the above review, succession of previous studies suggests a model of research on the factors that influence the startup results of business graduates in business administration at the University. Finance-Business Administration consists of 6 factors, shown in Figure 1 below:
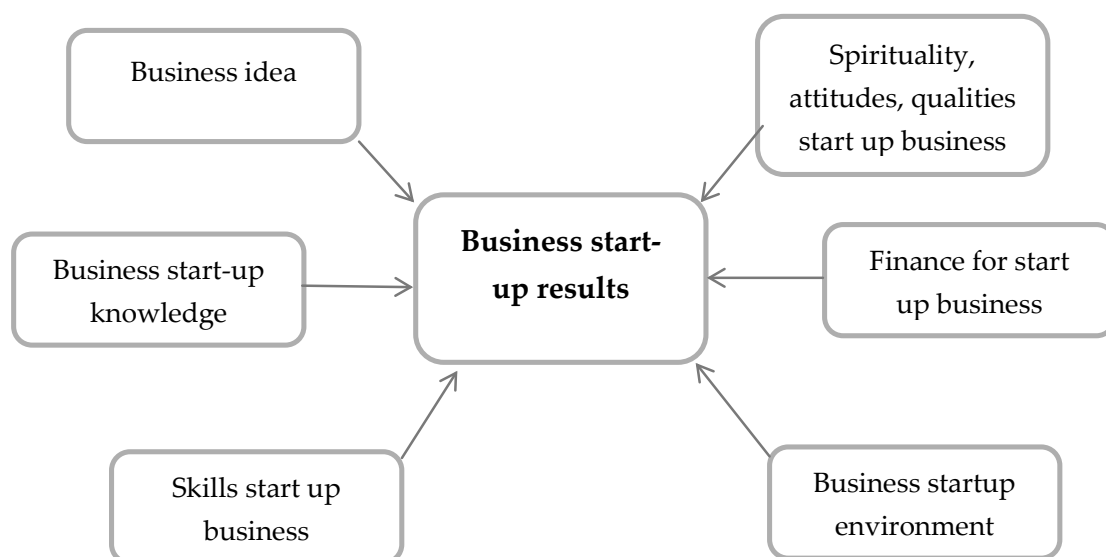
Figure 1: *The proposed research model*

On the basis of the proposed model the variables and scales are defined as follows: Scales of the research concepts in the Likert scale model scale from 1 to 5. The variables are defined detailed and detailed description in Table 1 and Table 2 below:

Table 1: *Dependent variable scale (results of business startup: RSB)*

Encode	The contents of the observation variable
RSB1	My current business is very good
RSB2	Business goals set at the start are achieved
RSB3	Products of the business increasingly prestigious in the market
RSB4	The revenue of my company is very stable and growing well
RSB5	Competitive status is favorable for the company
RSB6	My business ideas and business results are appreciated by society, friends and relatives
RSB7	My business activities have benefited the society and employment of local people
RSB8	Future business prospects are very good
RSB9	I am very satisfied with the business and do not intend to change

Table 2: *Independent variables scale*

Encode		The contents of the observation variable
Business idea (ISB)	ISB1	I have a lot of business ideas
	ISB2	Start a successful business is because of good business ideas, new ideas
	ISB3	The ability to apply smart technology to business, business solutions
	ISB4	I always have the passion to explore new things, thinking new products
	ISB5	Always think and want to do what other people, other businesses have not done
Spirituality, attitudes, qualities start up business (QASB)	QASB1	I love the business and aspire to become an entrepreneur
	QASB2	I have defined my business goals
	QASB3	I always try, high determination in my business
	QASB4	I dare to think and dare to deal with risk, not discouraged before failure
	QASB5	I see clearly and know how to capture business opportunities, investment; as well as the risk of failure
	QASB6	I easily think of new products, new ideas to meet the needs of society
	QASB7	I always see the relationship between immediate profit and sustainable development
	QASB8	I have the ability to adjust business direction to adapt to changing market (change product, change market tastes)
Business startup knowledge (KSB)	KSB1	I have good knowledge of supply, demand, market and customer behavior studies
	KSB2	I have good knowledge of business planning, identify and analyze market opportunities quickly, analyze the environment and strategic business direction
	KSB3	I have mastered the basic content of marketing such as 4Ps, promotion of consumption, brand
	KSB4	I have good knowledge of human resource management in business
	KSB5	I have good knowledge of financial management, cost management, sales and profitability; firmly grasp the methodology of financial analysis and evaluation of an investment project
	KSB6	I have good knowledge of building and organizing startup groups
	KSB7	I have mastered the basic knowledge of business administration and the basic functions of business administration
	KSB8	I understand the laws and policies of the State relating to business
	KSB9	I understand the requirements and principles of business ethics and corporate social responsibility
Skills start up business (SSB)	SSB1	I have the skills to forecast, analyze the business environment effectively (competitors, customers, suppliers .., business conditions. legal, ...) identify, capture and analyze market opportunities
	SSB2	I have good skills in business planning
	SSB3	I have the skills to analyze and evaluate financial investment projects effectively
	SSB4	I have good communication skills and very good at negotiating business negotiation, the ability to persuade partners
	SSB5	I have good skills in making decisions, I am determined
	SSB6	I have effective leadership and teamwork skills, organizational skills and work assignments, and supervision of the performance of under-performing staff
	SSB7	I know how to manage time reasonably
Finance for start up business (FSB)	FSB1	I have the capital to start the business
	FSB2	I have the ability to mobilize capital easily for start up business, mobilize from family, from friends to start business
	FSB3	I easily borrowed money from banks to start a business
	FSB4	I have easy access to other sources of funding for startups (preferential loans from support programs, government funds, other funds, etc.) for starting a business

	ESB1	The economic environment (GDP, inflation, unemployment, etc.) creates many favorable opportunities for my business idea
	ESB2	The financial policies that support the startup of the state have a positive effect on starting a business among young people, including me
	ESB3	Mechanisms, laws, law enforcement activities of the State is very convenient for starting my business
	ESB4	My business activities are heavily influenced by government policies and regulations
	ESB5	My business is successful thanks to the great contribution from the achievements of science and technology of the economy (information technology, biology, new materials)
Business startup environment (ESB)	ESB6	Ethnic culture has a very positive impact on my business
	ESB7	Activities in universities, research institutes, and startup businesses have been instrumental in accelerating my startup
	ESB8	Business Startup Program in University; The promotion of startups (training, startup contest ...) of organizations, the Government and the localities have been effective for the past
	ESB9	My products / services are under great competitive pressure
	ESB10	The input material has had a great impact on my decision
	ESB11	My business is at high risk because of natural conditions (weather, climate ..)

2.2 Method of data collection

For the best regression analysis, according to Tabachnick and Fidell (1996), the sample size n> 8m + 50 (m is the independent variable in the model, not the number of questions); Also according to Aprimer, n> 104 + m. For the purpose of verifying the scale, the researchers did not give a specific number of samples that needed to be given the ratio between the number of samples needed and the number of parameters to be estimated. For factor analysis, the sample size will depend on the number of variables included in the factor analysis. Hair suggests that the sample size is five times greater than the number of variables (number of questions in the questionnaire). While Hoang and Chu (2008) claim that the ratio is 4 or 5. In this topic, there are all 43 variables required to perform factor analysis, so the minimum number needed is 44 x 5 = 220.

To ensure the reliability of the survey, although the sample size requirement was only 220, the author decided to use 300 direct questionnaires. The team conducted sample control throughout the survey to ensure that the sample was representative

2.3 Data Analysis Methods

Quantitative analysis using statistical analysis tools with the help of SPSS software. Qualitative analysis is used in combination to analyze information obtained from in-depth interviews, along with analytical, computational and comparative methods to draw conclusions and conclusions for the research problem.

Data analysis process:

Step 1: Test Cronbach's Alpha to determine the reliability of the scale, removing the unsuitable variables.

Step 2: Exploratory Factor Analysis (EFA) to test the correlation between independent variables and dependent variables.

Step 3: Analyze correlations to identify groups of observation variables, eliminating invalid variable groups.

Step 4: Regression analysis to determine the fit of the model. Hypothesis testing to determine the degree of influence of independent variables on dependent variables.

3. RESEARCH RESULTS

Research using SPSS software to test, analyze and determine the factors affecting the startup results of graduates in Business Administration at the University of Finance - Business Administration. With 278 survey questionnaire, after removing inappropriate votes. The results of the steps are as follows:

3.1 Verification of Scale Reliability (Cronbach's alpha)

- Carrying out the reliability of the scale for the factors affecting the startup results of business administration graduates at the University of Finance and Business Administration with 44 variable components. as follows:

Table 3: Verification of the reliability of independent variables

(Item-Total Statistics)

Observed variables		Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Reliability Statistics ISB: Cronbach's alpha= 0.854	ISB1	15.13	9.795	0.734	0.805
	ISB2	15.34	10.637	0.653	0.827
	ISB3	15.24	10.971	0.684	0.820
	ISB4	15.14	10.742	0.679	0.820
	ISB5	15.25	11.155	0.587	0.843
QASB: Cronbach's alpha = 0.860 (2nd time, after removing QASB2 variable)	QASB1	23.94	19.483	0.568	0.850
	QASB3	23.94	19.620	0.589	0.846
	QASB4	23.74	18.931	0.658	0.836
	QASB5	23.71	19.736	0.654	0.837
	QASB6	23.73	18.479	0.720	0.827
	QASB7	23.45	20.653	0.578	0.848
	QASB8	23.66	19.604	0.638	0.839
KSB: Cronbach's alpha = 0.896 (2nd time, after removing 2 variable KSB8, KSB9)	KSB1	22.72	27.791	0.751	0.874
	KSB2	22.90	29.056	0.623	0.890
	KSB3	22.73	28.254	0.736	0.876
	KSB4	22.52	29.933	0.697	0.881
	KSB5	22.89	29.175	0.626	0.889
	KSB6	22.50	28.995	0.729	0.877
	KSB7	22.67	28.859	0.736	0.876
SSB: Cronbach's alpha = 0.898 (2nd time, after removing SSB7 variable)	SSB1	12.3741	28.004	0.751	0.876
	SSB2	12.4964	28.446	0.727	0.879
	SSB3	12.4388	29.258	0.676	0.887
	SSB4	12.4532	28.227	0.717	0.881
	SSB5	12.5540	28.934	0.682	0.886
	SSB6	12.1978	28.159	0.791	0.870
FSB: Cronbach's alpha= 0.886	FSB1	8.86	13.844	0.751	0.853
	FSB2	8.88	13.761	0.754	0.852
	FSB3	9.05	13.279	0.876	0.806
	FSB4	9.21	15.001	0.633	0.897

ESB: *Cronbach's alpha = 0.899 (2nd time, after removing 2 variable ESB1,ESB3, ESB8)*	ESB2	23.46	51.174	0.728	0.879
	ESB4	23.28	52.028	0.780	0.875
	ESB5	23.65	54.344	0.584	0.893
	ESB6	23.54	53.592	0.640	0.887
	ESB7	23.40	50.919	0.803	0.872
	ESB9	23.59	53.824	0.587	0.893
	ESB10	23.29	51.638	0.746	0.877
	ESB11	23.56	53.915	0.584	0.893

Source: Cronbach's alpha test results, 2018 survey data

The results of the reliability analysis of the scale show that the reliability of the six factors from 0.854 to 0.899 is> 0.6, Satisfactory. All component variables are Corrected Item-Total Correlation > 0.3. There are 4 factors that have to run the second test is QASB, KSB, SSB, ESB because of the inappropriate component variables, must remove the research model, (the coefficient of correlation < 0.3). As such, the research model has 37 variable components used for subsequent analyzes.

- Research on the reliability of the scale for the results of business startup, with the results of the two-run shows that the results of the component variables are significant, after removing the component variable RSB5 (Table 4)

Table 4: *Verification of the reliability of the results of business startup scale (2nd time) Item -Total Statistics*

Observed variables	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Reliability Statistics: Cronbach's alpha = 0.865				
RSB1	27.73	24.205	0.620	0.848
RSB2	27.90	24.921	0.497	0.863
RSB3	27.63	23.699	0.625	0.847
RSB4	27.55	25.064	0.639	0.846
RSB6	27.47	24.936	0.627	0.847
RSB7	27.55	25.526	0.571	0.853
RSB8	27.62	23.631	0.683	0.840
RSB9	27.60	23.879	0.677	0.841

Source: Cronbach's alpha test results, 2018 survey data

The results of the second scale reliability analysis run, after removal of the RSB5 variable indicate a reliability of 0.865> 0.6, satisfactory. All component variables are Corrected Item-Total Correlation > 0.3.. Thus scale RSB factors with the observation variables: RSB1, RSB2, RSB3, RSB4, RSB6, RSB7, RSB8, RSB9 ensure reliability.

3.2 Factor Analysis (EFA)

- KMO testing

Table 5: *KMO and Bartlett's Test*

KMO (Kaiser-Meyer-Olkin of Sampling Adequacy)		0.816
Bartlett's Test of Sphericity	Approx. Chi-Square	6483.581
	Df	666
	Sig.	0.000

Source: KMO test results, 2018 survey data

To perform exploratory factor analysis, the data obtained must meet the conditions of the KMO test and Bartlett's test. Bartlett's Test used to test the hypothesis H_0 is that the variables are not interrelated in the whole, the overall correlation matrix is a unit matrix, the KMO coefficient used to determine whether the sample size obtained is consistent with the factor analysis. According to Hoang Trong and Chu Nguyen Mong Ngoc (2007) the value of Sig. of Bartlett's Test less than 0.05 allows rejecting the H0 hypothesis and $0.5 < KMO < 1$ means that factor analysis is appropriate.

The test results give the KMO a value of 0.816 greater than 0.5 and Bartlett's Test Sig is 0.000 less than 0.05 showing 37 observations and is perfectly consistent with factor analysis.

- Matrix rotation factors:

The method chosen is the Varimax procedure, which rotates the angles of the factors to minimize the number of observations that have large coefficients at the same factor. Therefore, it will enhance the ability to explain the factors. After rotation, the observations with the factor load factor less than 0.5 are removed from the model. Only observations with a factor load factor greater than 0.5 are used to explain a factor. The EFA Discovery Factor Analysis will retain observation variables with load factor greater than 0.5 and arrange them into major groups.

The results of the exploratory factor analysis show the six factors affecting business startup results factor. Six groups of factors were extracted that explained 63.499% of the variation in data.

To determine the number of factors in this study use two criteria:

- The Kaiser Criterion determines the number of factors extracted from the scale. The less important factors are eliminated, leaving only significant factors by considering the value of the Eigenvalue, only those with Eigenvalue greater than 1 are retained in the analysis model.

- Variance Explained Criteria: Factor analysis is appropriate if the total variance deviation is less than 50%.

With respect to the discovery factor analysis, the total variance of 63.499% is greater than 50% and the eigenvalues of all factors are greater than 1, so using the factorial analysis is appropriate.

Table 6: *EFA results for independent variables*

Observed variables	Load factor					
	1	2	3	4	5	6
ESB7	0.858					
ESB4	0.827					
ESB10	0.802					
ESB2	0.794					
ESB6	0.723					
ESB5	0.687					
ESB9	0.676					
ESB11	0.668					
KSB1		0.797				
KSB7		0.767				
KSB3		0.766				
KSB6		0.760				
KSB4		0.739				
KSB5		0.702				
KSB2		0.687				
QASB6			0.814			
QASB8			0.742			

QASB4		0.726			
QASB5		0.723			
QASB7		0.680			
QASB1		0.634			
QASB3		0.626			
SSB6			0.840		
SSB1			0.819		
SSB2			0.816		
SSB4			0.792		
SSB5			0.775		
SSB3			0.757		
ISB1				0.790	
ISB3				0.755	
ISB2				0.748	
ISB4				0.712	
ISB5				0.701	
FSB3					0.933
FSB1					0.875
FSB2					0.855
FSB4					0.766
Variance Explained	20.981%	14.210%	9.761%	7.506%	5.913%	5.128%
	Total Variance Explained: 63.499%					

Source: EFA analysis results, 2018 survey data

After rotating the second factor, we see that the concentration of observations by factor is quite clear. The results of the analysis show that all 37 observations produce six factors. That is:

+ ***Business startup environment:*** ESB2, ESB4, ESB5, ESB6, ESB7, ESB9, ESB10, ESB11

+ ***Business startup knowledge:*** KSB1, KSB2, KSB3, KSB4, KSB5, KSB6, KSB7

+ ***Spirituality, attitudes, qualities start up business:*** QASB1, QASB3, QASB4, QASB5, QASB6, QASB7, QASB8

+ ***Skills start up business***: SSB1, SSB2, SSB3, SSB4, SSB5, SSB6

+ ***Business ideas:*** ISB1, ISB2, ISB3, ISB4, ISB5

+ ***Finance for start up business:*** FSB1, FSB2, FSB3, FSB4

3.3 Correlation analysis

From the above results we have the following research hypotheses:

- H1: There is a relationship between the factor of QASB and the factor of RSB

- H2: There is a relationship between the factor of ISB and the factor of RSB

- H3: There is a relationship between the factor of KSB and the factor of RSB

- H4: There is a relationship between the factor of SSB and the factor of RSB

- H5: There is a relationship between the factor of FSB and the factor of RSB

- H6: There is a relationship between the factor of ESB and the factor of RSB

Correlation analysis helps to test the correlation between independent variables and dependent variables before regression runs. The resulting correlated correlation between the variables representing factors independent of variables represents the dependent factor (Table 7)

Table 7: *Correlation coefficients*

		QASB	ISB	KSB	SSB	FSB	ESB	RSB
QASB	Pearson Correlation	1	0.453	0.406	0.009	0.110	0.000	0.585
	Sig. (2-tailed)		0.000	0.000	0.877	0.066	0.997	0.000
ISB	Pearson Correlation	0.453	1	0.457	-0.087	0.015	0.102	0.449
	Sig. (2-tailed)	0.000		0.000	0.150	0.804	0.090	0.000
KSB	Pearson Correlation	0.406	0.457	1	-0.224	0.008	0.198	0.503
	Sig. (2-tailed)	0.000	0.000		0.000	0.898	0.001	0.000
SSB	Pearson Correlation	0.009	-0.087	-0.224	1	0.081	-0.247	0.146
	Sig. (2-tailed)	0.877	0.150	0.000		0.178	0.000	0.015
FSB	Pearson Correlation	0.110	0.015	0.008	0.081	1	0.059	0.230
	Sig. (2-tailed)	0.066	0.804	0.898	0.178		0.326	0.000
ESB	Pearson Correlation	0.000	0.102	0.198	-0.247	0.059	1	0.083
	Sig. (2-tailed)	0.997	0.090	0.001	0.000	0.326		0.169
RSB	Pearson Correlation	0.585	0.449	0.503	0.146	0.230	0.083	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.015	0.000	0.169	

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Correlation coefficient analysis, survey data 2018

From the above table, the ESB variable (sig = 0.169> 0.05) was not correlated with the dependent variable RSB (r> 0, p <0.05). Thus, the model has five independent variables included in the regression analysis.

3.3 Multivariate linear regression analysis

After performing correlation analysis, the next regression analysis was to determine the linear relationship between QASB, ISB, KSB, SSB, and FSB with RSB dependent variables.

Table 8: *Regression analysis*

Model	Unstandardized Coefficients		Standardized Coefficients	P	VIF
	B	Std. Error			
(Constant)	.434	.211		.041	
QASB	.348	.048	.362	.000	1.377
ISB	.129	.044	.148	.004	1.419
KSB	.264	.039	.336	.000	1.423
SSB	.144	.029	.218	.000	1.072
FSB	.096	.024	.167	.000	1.020
R squared is not standard: 0.517					
R squared standard: 0.509					
P(Anova): 0.000					

Source: regression analysis, survey data 2018

a. Multi-collinear testing

Multicollinearity is a phenomenon that occurs when independent variables are closely related. This makes the squared R coefficients and the regression coefficients a bias. Whether polyhedral testing in the model was conducted by considering the VIF coefficient. Here all the VIF coefficients of the independent variables are less than 2. Thus, in the model there are no multipliers.

b. R-squared coefficient

The R-squared factor measures the fit of the model with the sense that the independent variables explain how many% of the variance of the dependent variable. Here the R-squared was corrected at the second regression result of 0.509 satisfactory. The independent variables explain 50.6% (> 50%) of the variance of the dependent variable.

The regression equation has the form: $Y = b + a1\ X1 + a2X2 + a3\ X3 + a4X4 + a5X5$

In the equation:

Y: RSB

X_1 : QASB

X_2 : ISB

X_3 : KSB

X_4 : SSB

X_5 : FSB

- Non-normalized regression models:

$$Y = 0.348 + 0.129\ X_1 + 0.264X_2 + 0.144X_3 + 0.096\ X_4 + 0.434\ X_5$$

- Standardized regression model:

$$Y = 0.362\ X_1 + 0.148X_2 + 0.336X_3 + 0.218\ X_4 + 0.167\ X_5$$

Results of ANOVA variance analysis for sig = 0.000 <0.05. Thus the multivariate regression model is consistent with the surveyed data.

Regression models show that the two factors QASB and KSB have the strongest influence on the RSB factor with the standardized beta of 0.362 and 0.336 (ie, for the QASB factor when evaluated an increase of 1 point, the results of the will increase by 0.362 points, the same for other factors); Followed by SSB factors (β = 0.218), FSB factor (β = 0.167) and finally ISB factor (β = 0.148). Thus, the hypotheses H1, H2, H3, H4, H5 are accepted at a significance level of 5% (95% confidence).

4. CONCLUSIONS AND RECOMMENDATIONS

The research results show that there are 5 factors that have a positive impact on the result of business startup of students who graduated in business administration from the University of Finance and Business Administration, respectively. Impact from high to low include: The qualities, attitude, inspiration to start a business; Business startup knowledge; Skills start up business; Finance for start up business; Business idea. Based on the results of the study, a number of recommendations were made to promote business startups of business administration students as follows:

- For students:

+ Change the awareness and the spirit of business: students in business management in particular and students of the University of Finance - Business Administration in general after graduation can work in enterprises or create a business self business owner - self-employment; The direction to create and master business is the main direction in the future; Constantly fostering the determination and substance of the business start (accept risk, accept the new, persevere, do not give up, always innovate, creative).

+ Improve knowledge and practice of business startup: Continuously accumulate knowledge and

skills in starting a business, knowledge of business administration, especially practical knowledge about business. Actively participate in the actual activities organized by The University, the practice activities, practice; Actively participate in teamwork activities, develop business startup schemes, group discussions, ...; Actively participate in startup contests, exhibitions, conferences, fairs, exchanges, promotions and startup incentives, TV startup programs.

+ Learning from practical experiences from the previous ones: Actively participate in real discussions with leaders of enterprises organized by The University; Need to listen to the advice of those who have started a successful business, the share of success, failure in starting their business.

- For universities:

+ Inspire and nurture the entrepreneurial spirit of the student. There should be consensus from perception to action from top leaders to faculty, administrators and students. Lecturers, especially faculty members of the Faculty of Business Administration in the process of teaching in the classroom need to "fire fire" in the spirit, thinking, qualities start business for students throughout the university. This activity can be carried out during classroom lectures through course discussion, or through illustrations, discussion situations, practical contacts, etc.

+ Continuously improve the training program in the direction of enhancing practicality in the curriculum, enhancing the practical application in teaching. This can be done through the application of methods such as business planning, student case work, practice hours, etc. Institutional reform is needed. direction of learning combined with creative thinking; learning associated with practice; education, training as desired, aspirations of students instead of training in a certain pattern. Regularly organize seminars, business talks and business startups, creative startups.

+ Raise and explore the entrepreneurial qualities of students. The school needs to understand its important role in stimulating, exploring and promoting the entrepreneurial qualities of students. College-based training and business startup experiences that students gain in college have a positive impact on students' potential and maturity. The University-educated students not only aim to work as hired labor for other businesses but also have entrepreneurial spirit and self-employment. This is reflected in the direction for the teaching staff mentality often encourages students to start.

+ Improve the efficiency of the Center Contact with enterprises about the practice, practice, the seminar on real money business, improve the essence of the seminar between students and business leaders. graduates of The University have started a successful business; Establish and operate an effective business incubator in the University, which provides students with entrepreneurial role models, real business startup opportunities, and increased applicability. apply the theory to the actual work.

- For the State:

+ State agencies should have propaganda measures and policies aiming at changing the students' thinking, beliefs, will and attitudes towards business and startup businesses. Helping students, families, friends and the surrounding environment have a more active view of business and entrepreneurship; giving psychological students the desire to pursue and follow the success examples; Provide emotional support and encouragement to students, giving them the confidence to start a business.

+ Realization of policy guidelines for promoting startups for students; Effectively implement the incentives (tax, capital, land, ...) for new business enterprises, small and medium enterprises, preferential policies should be substantial, avoid the main case. Books can not reach the business.

+ Promote financial support for startup programs. Government and state agencies need to play their part in calling on donors, successful entrepreneurs, banks, financial leasing companies, venture capital funds. In addition, state agencies can also proactively set up financial institutions to support universities to create

business incubators on campus. Increase scale and organize more activities to promote the spirit and the will to start a business. At the same time, we support universities in enhancing their entrepreneurial skills.

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FINANCIAL RESOURCES FOR STARTUP FIRMS IN VIETNAM

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ABSTRACT: *Financial resource is one of the most important parts for the business operation. The demand for financial resources is a vital issue for enterprises, especially for startups. Startup companies are newly born companies which struggle for existence. These entities are mostly formed based on brilliant ideas and grow to succeed. This paper presents the development of startup companies and potential financial resources for them in Vietnam. The expected scientific contribution supports the defining stages of development for startups, as well as their financial sources at each stage. Scientific and research contributions of the paper are reflected in the fact that there is a relatively small number of papers. Therefore, this research can contribute to a better understanding of the financing strategy of startup companies in Vietnam. Presented and interpreted results could be a useful basis and encouragement for a further research in this and similar topics related to the startup scene at the local as well as the global level.*

Key words: *startups; financial resources; startup firms.*

1. INTRODUCTION

Startup firms are newly founded companies or entrepreneurial ventures which are in the first phase of its operations. They are funded by their own founders as they believe that a product or service provided is a trend of demand. There is a definition by NESTA (Dee at al., 2015) that defines startups as:"*A young, innovative, growth-oriented business (employees/revenue/customers) in search of a sustainable and scalable business model*". This definition expands on Steve Blank's (2013) definition of startups as organization formed to search for repeatable and scalable business models. Startup firms are usually, but not necessarily, associated with high-tech projects because they mostly concentrate on software which can be easily made and re-made. In addition, high technology projects, in their nature, can be powerful motivation for the growth. An interesting fact shown by the research is that technology-oriented startups are typically located in major urban centres. The reason is attributed to the need for a market that exceeds the local level (Baptista, Mendonça, 2009). However, there are more and more startup companies in traditional industries and business sectors. At the international level, there is more and more research associated with the importance and ways of financing entrepreneurial ventures (formal and informal), especially in the period of intense globalization.

The operation of startups is often risky. First, many startups fail in the very early stages and less than one third of them turn into companies- "*high rate of failure*" (e.g. see, Vesper, 1990). Second, failure occurs due to several reasons, such as lack of finance, team management problems, lack of enough business knowledge, technology lag, etc.- "*startup problems*" (e.g. see, Núñez, 2007). Third, most of startups that survive might turn into successful companies which play a significant role in economies- "*success stories*"

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*(*e.g. see, Martinsons, 2002). Fifth, there is a black box called "valley of death" which is more of a metaphor than a well-defined stage (Hudson & Khazragui, 2013). Even if this black box is well studied, the startup itself is ignored as the level of analysis- *"startup stage"* (e.g. see, Van de Ven et. al., 1984).

The product of startup firms is often very new and its first appearance can be very difficult as well as highly invested. Owing to limited revenue or high costs, most of these small-scale operations are not successful without additional funding from others financial resources (not only their owners).

In Vietnam, innovative startup firm is one of three small and medium-sized enterprise groups which have more incentives following the new law no 04/2017/QH14. The role of startups are the businesses which can create the driving force for building and developing the economy in the digital economy era and the industrial revolution 4.0, startups deserve the attention and advocacy from the government and the society.

2. LITERATURE REVIEW

Startups theories

As mentioned earlier, startups are rarely considered as the main focus of theories in different domains. However, there are some theories which could be implicitly considered as "startup theories" in the existing literature. This paper categorizes these theories in three main areas: (i) organization, (ii) management, and (iii) entrepreneurship.

Organization theories focusing on startups

Van de Ven et al. (1984) were among the first scholars who considered three main approaches toward studying startup creation. They considered entrepreneurial, organizational and ecological approaches; and argued that prior research had only examined one of these three approaches without considering the others. As they pointed out: "The organizational approach argues the conditions under which an organization is planned and the processes followed in its initial development [phase, which] have important consequences on its structure and performance in later life". Yet, organization theories are silent on the issue of organizational evolution, or more specifically on startup evolution (Salamzadeh, 2015a). However, there is limited research which investigates the startup phase (e.g. see Boekerb & Wiltbank, 2005). Moreover, most of the existing theories and perspectives in organization science are definedto answer organizational questions. Among these theories, the following are more relevant in studying startups: organizational ecology theory (e.g. see, Scholz & Reydon, 2009), organizational configurations (e.g. see, Miller, 1990), contingency theory (e.g. see, Tosi& Slocum, 1984), resource dependence theory (e.g. see, Davis& Cobb, 2010), uncertainty theory (Kamps & Pólos, 1999), etc. Among the existing theories, Gartner (1985) and Katz and Gartner (1988) are more specifically related to this category.

Management theories focusing on startups

According to its general definition (getting things done through the other people, or coordinating the efforts of people toward common goals), management is about people (Hofstede, 1999). On the other hand, management theories are either "perspectives" or "descriptions of the relationships among organizationalcharacteristics" (Dean & Bowen, 1994). Thus, according to this view, while management theories have less to do with startups in an organizational sense;theyhave more to do with those entities as individuals/teams that coordinate their efforts toward some common goals.

Moreover, management theorists and scholars are becoming more interested in studying startups (Davila et al., 2003). Some of the main management theories which used in startup research are as follows:

strategic management (e.g. see, Pettigrew et al., 2001), small business governance (e.g. see, Ritchie& Richardson, 2000), human resource management (e.g. see, Miles & Rosenberg, 1983), team management (e.g. see, Kaiser& Müller, 2013), complexity theory (e.g. see &Lan, 2006), etc. However these theories are loosely connected to startup research and are mostly considering startups as their samples or cases.

Entrepreneurship theories focusing on startups

In Van de Ven et al.'s (1984) view, "the entrepreneurial approach argues the characteristics of the founder and promoter of a new organization". Although this view holds a basic presumption regarding the existing theories, it lacks enough entrepreneurial focus on the phenomenon in question, i.e. startups. Although the founder is important, there are several issues to be discussed, described, and explained by entrepreneurship theories on startups. As Salamzadeh (2015b) argues, entrepreneurship theories on startups fall into two categories: (i) macro level theories (e.g. see, Schumpeter's theory (Schumpeter, 1934), population ecology (Hannan and Freeman, 1977)), and (ii) micro and meso level theories (see e.g.Vesper, 1990; Lim et al., 2008; Bhaves, 1994; Veciana, 1988; Deakins and Whittam, 2000; Núñez, 2007; Serarols, 2008; Samuelsson and Davidsson, 2009).This category of theories is more focused on startups. This might be due to several reasons. First, entrepreneurship deals with idea, creativity, innovation, new product or service development, opportunity, and the like. Thus, entrepreneurship theories are more prone to be considered in the early stages of any business or organization. These concepts are integral parts of a startup (Radovic-Markovic&Salamzadeh, 2012). Second, going beyond entrepreneurship theories, theories of organization and management will emerge, which deal with managing people and organizations (Van de Ven et al., 1984). Third, startups are about turning ideas into businesses which is a critical point in entrepreneurship studies such as new venture creation, value creation, and opportunity recognition, evaluation and exploitation.

Financial resources for startups

Generally, the sources of startup capital are divided into two groups: insider funding (own capital, family funds); outsider funding through business angels, venture capital, bank loans or other funding sources. Soderbom and Samuelsson presented two main approaches used to explain the capital structure of business enterprises: (i) the pecking order theory; (ii) the lifecycle theory.

The pecking order theory in capital choice indicates a hierarchy of capital choices for firms when there was asymmetric information between firms and potential investors (Myers and Majluf, 1984). According to the traditional pecking order theory, information asymmetry arises when managers have more information about opportunities than investors, leading to risks for external investors investing in the company. As a result, investors may ask for an offset to this ambiguous information that makes the cost of external capital expensive. Therefore, managers often use internal capital if possible. Only when internal capital is insufficient to meet the capital needs of the enterprise, corporate executives use external capital. In this case, the loan will be more prioritized than the capital from investors because loans are less affected by asymmetric information.

Initially, pecking order theory was developed to explain capital mobilization strategies of large and perennial companies. In the case of newly established small enterprises, Berger and Udell (1998) Cassar (2004) argued that this theory would be appropriate.

However, some other studies suggest that the traditional order will be reversed for startups for two reasons: (i) experienced investors who understand the future of innovative products from startups more than its founders; (ii) external capital can be ranked higher if investors can add non-monetary values to the businesses they invest and this is often the case for investments for startups (Garmaise 2001, Carpenter and Petersen 2002).

Another theoretical model used to study the determinants of capital structure of business is life cycle theory (Berger and Udell, 1998). The basic idea of this theory is that financial need and access to capital change when the business grows and gains more experience and becomes more transparent in terms of information.

Small and new businesses rely heavily on insider funding, commercial credit, and business angels. As businesses grow, funding will become more accessible from venture capital funds as well as from banks and other financial institutions. Even if businesses continue to grow, they can raise capital from the public through initial public offering (IPO). Figure 1 shows the possible sources of capital in the growth cycle of small enterprises in simple form. Both theories of financing for entrepreneurship are not always true, for example, where financial resources such as business angels or venture capital funds are not available or only in small amounts, startups will seek to mobilize from alternative sources of funds.

Figure 1: The possible sources of capital for startups
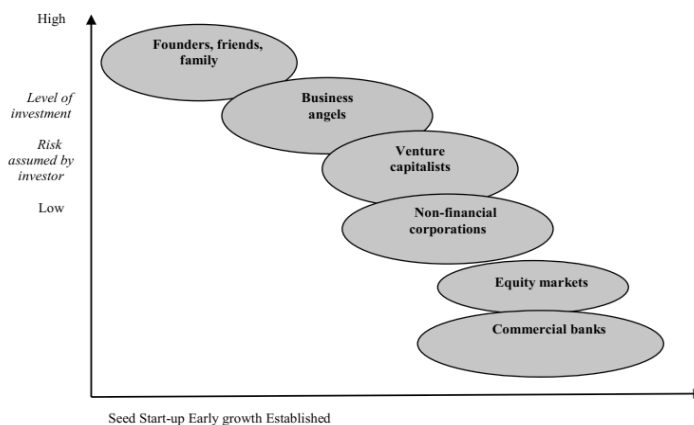
Source: Berger and Udell (1998)

Insider funding: Own capital invested in the enterprise by founders of startups. This is the largest source of capital in the first phase of startup lifecycle. GEM's survey indicates that more than 60% of the capital for startups is equity (GEM, 2004). Similarly, Berge and Udel (1998) showed that owner's equity accounts for about 50% of the capital mobilized by startup firms. Campbell and De Nardi (2009), Bates and Robb (2013) both pointed out that family and friends were the second to third parties who provided financial funding. However, the total value of these funds is quite limited.

Outsider funding: Governmental financial support is often in the form of public investment in the startup firms. However, this support is generally small. Berger and Udell (1998) Robb and Robinson (2010) calculated that less than 1% of the total capital of startups is from governments' support.

Many studies have shown that commercial banks are an important external source of finance for startups. According to Berger and Udell (1998), commercial loans account for about 30% of the total external capital of newly established US firms. Robb and Robinson (2010) show that about 40% of American startups are financed by commercial loans.

Business angels can be considered as an important source of financing for startups in the early stages of development. These are individuals with large capital, operating independently or in a group, investing their capital directly in an unlisted company and, after investing, will usually stick with the company, for example, with role as consultant or executive board member (Mason and Harrison, 2008). The investment value per transaction is small but a number of business angels are usually large (Soderblom and Samuelsson, 2014).

3. FINANCIAL RESOURCES FOR STARTUP BUSINESSES IN VIETNAM

Startup has become the wave which strongly developed in Vietnam for recent years. According to unofficial statistics, Vietnam currently has about 15.000 startups operating mainly in 2 major city centers: Hanoi and Ho Chi Minh City (Office Project 844).

Global Entrepreneurship Monitor - GEM devides countries into 3 groups corresponding with 3 stages of development: resource-based countries (stage 1); efficiency-based countries (stage 2); innovation-based countries (stage 3). Countries will advance from stage 1 to stage 2 & 3. Vietnam is classified in the group of resource-based countries, it means the initial stage of development. In Southeast Asia, Vietnam is in the same group with the Philippines, while Malaysia, Thailand and Indonesia are classified as stage 2 development. The assessment of a country's startup level should be compared to the countries which have the same level of development (GEM, 2016).

Figure 2: Number of startups invested by business angels in Vietnam
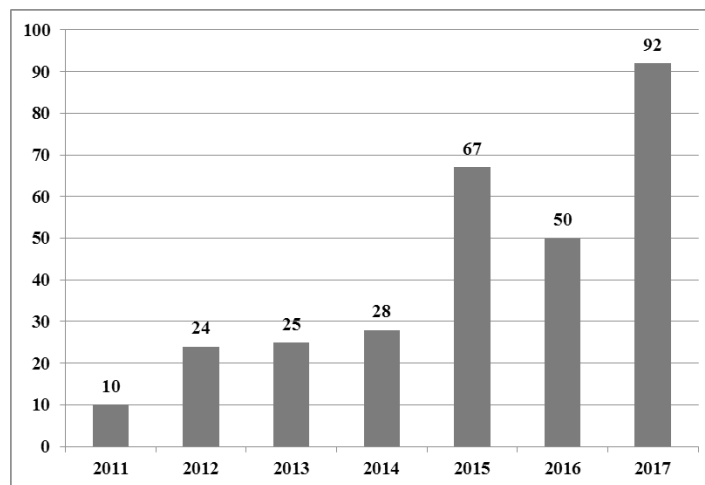
Source: Topica Founder Institue, 2018

The assessment of GEM startup ecology in Vietnam over the years shows that in the 12 indicators, the financial index for business is relatively low. In 2017, this index of Vietnam reached 2.27 / 5 - the fourth lowest index . However, this index has improved significantly compared to 2015. In 2015, the financial index for business in Vietnam reached 2.12 / 5, the second lowest index, only higher than the index of business education in the general level. More concretely, about venture, according to statistics from the Market Development Department, Science and Technology Business (Ministry of Science and Technology) now has about 40 venture capital funds which have been operating in Vietnam, up about 30% compared to 2016 (Office Project 844). Typical foreign funds are IDG Ventures Vietnam, Cyber Agent, Mekong Capital, DFJ Vina Capital, ESP Capital and Innovatube. In addition, in the 2016-2017 period, many local venture capital funds were formed and involved in venture capital markets such as SeedCom, FPT Ventures, CMC Innovation Fund, VPBank Startup, VIISA, ESP, VSV, 500 Startups Vietnam ...

The fund from business angels was relatively limited in previous years as individual investors in Vietnam still do not see investment in startup business as an investment model that can make a profit. However, in 2017, the first ecological startup Vietnam recorded a significant number of domestic business angels. The activity of business angels in Vietnam has begun to be more systematic, more professional,

through the connection, formed a number of clubs, investment networks for startups. Some typical examples include VIC Impact, Hatch! Angel Network, iAngel Vietnam or Angel4us.

The Shark Tank Program also finalized 22 investments in initial startups with a total investment about 100 billion VND. The statistics of Topica Founder Institute showed that the number of being invested startups has increased significantly over the years. In 2017, 92 transactions were received the investment with a total capital of 291 million USD (about 6.500 billion VND). In particular, business angels and local venture capital funds contributed 49 deals, equivalent to 46 million USD (Figure 2).

Organizational model promotes business has proved the effective and realizable in vietnam. According to the statistics of National Agency for Technology Entrepreneurship and Commercialization Development, in 2017, Vietnam had about 10 Organize business promotion and 30 Incubin facility, which increased 6 nurseries compared to 2016. Business Organizations such as Vietnam Silicon Valley Accelerator, Viettel Accelerator, Microsoft Class Expara, VIISA...and recently Lotte Accelerator and Hebronstar are actively operating although they are only in the initial state.

In 2017, the percentage of people intending to start a business in Vietnam is 25%, the startup rate of business in Vietnam is 23.7% and the level of innovation of startup businesses is 21%. Nowadays, there are about 30 existing nurseries in Vietnam, which contains 10 incubators under state agencies or non-business units; 7 nurseries of universities and 13 nurseries are established by private or foreign organizations, some of names are well-known such as Hoa Lac High Tech Enterprise Incubator; Incubator of hi-tech enterprises Ho Chi Minh; Da Nang nursery; Supporting young startups Center ... The nursery business is also in the process of research to transfer the model to the organization Promote business (Office Project 844).

4. RECOMMENDATIONS

For startup firms

Explore options for managing work capital such as invoice finance: Cash flow problems cause the untimely demise of many startups, no matter how strong the concept and management team. Although not suitable for every company, working capital solutions such as invoice factoring and discounting, can help to overcome of these challenges. The startup firms should choose carefully, however invoice discounting can be expensive, so they should be prepared to shop around for a service is flexible and transparent.

Tap into networks of business angels: With venture capital firms increasingly focusing on the later-stage ventures, business angels are becoming a more important source of funding for startups in some sectors. They should seek out business angel networks, which are becoming more commonplace as a means of bringing startups and investors together. Although angel investors will consider companies at an earlier stage than most venture capital firms, they will still except to see a business plan that is convincing and promising. Startup firms should seek out angels who are active in their sector and deal size. This may include current customers of the business.

For government

Ensure that regulation does not block the growth trajectory of startups: An IPO is a critical stage in the growth trajectory of the startup business. This highlights the importance of having a regulatory framework that does not deter companies with the right potential to consider a public listing. In the US, the cost of regulatory compliance and litigation are often cited as a contributing factor to the slowdown in IPO volumes. Vietnam should likewise ensure that Vietnamese securities legislation strikes the right balance between protecting investors while enabling startups to grow their business.

Learn from successful markets and replicate their approach: In recent decades, many governments have tried to implement junior markets as a stepping stone to major exchanges, but only a few have been successful at attracting listings. Common problems include a lack of listings, insufficient liquidity and the "adverse selection" problem, whereby the most successful companies on junior markets migrate to main exchanges, leaving the weaker companies behind. Government should learn from the mistake of past and considers whether they can launch their own version of junior markets. Attracting overseas and local listings can be one way of overcoming the challenges of liquidity and a lack of potential candidates.

5. CONCLUSION

It is well known that a very small number of startup companies succeeds, and continues to develop and make a profit after the market launch of products and services. Startup companies which are mainly defined as newly founded companies are usually associated with high-tech projects, and are often lost on the way from the founding the startup to achieving a business success. This paper has shown compliance with the ways of financing startups in the world as well as in Vietnam. After surviving the first experimental phase, the entrepreneurs gain enough courage to find financial support from other funding sources, such as business angels and seed investments, although the level of company development and the experience of entrepreneurs are not necessary associated with the financing methods.

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INTERNATIONAL EXPERIENCE ON EDUCATION TRAINING TO PROMOTE STARTUPS

Nguyen Minh Hanh*

ABSTRACT: *Starting a business is no longer a phenomenon in a country but a global development trend. Many countries are now finding ways to promote startups, overtake new technologies, and become pioneers in high-tech fields. To achieve these results, countries are now fully aware of the role of education and training and innovation. Therefore, studying the experiences of developed countries leading in terms of startups such as the United States, Finland, Israel and Singapore is very necessary for Vietnam to take the right steps to creatively innovate. Education and training are an indispensable factor for startup entrepreneurship. The Government of Vietnam is currently very active in promoting the development of young entrepreneurs. To get the creative step but firmly, businesses need training and education policies of universities also need to change to catch up with the development trend of the technology revolution 4.0.*

Keywords: *Startup, experience, training, education, startups.*

1.1. UNDERSTAND WHAT IS STARTUP

1.1.1. What is a startup?

On Wikipedia, startup is the term for companies that are in the initial stage of business in general, and is often used in the narrow sense of technology companies, set up business. Startup is an organization designed to provide products and services under the most uncertain conditions.

1.1.2. Characteristics of startups

Breakthrough: creating something that has never existed in the market or creating a better value than what is available, such as the ability to create a new segment in production (such as a personal healthcare device) or a brand new business model (such as AirBnb), or a unique, unheard-of technology (such as 3D printing).

Growth: A startup company will not set limits on growth, and they have the ambition to grow to the greatest possible extent. They make a huge impact and can be considered pioneers (as Apple's smartphone is the first company to explore and always lead in the segment later)

Factors needed to start a business. There are large amount of factors to be successful in starting a business, which may include some of the following key elements:

- Creativity

- Financial resource

- Basic knowledge of the subject

- Financial management skills and strategic business planning.

Therefore, education can be seen as a very important factor for a startup entrepreneur.

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According to the World Economic Forum 2013, a startup eco-system consists of the following elements:

1. Market

2. Human resources

3. Financial resources

4. Startup support systems (mentors, advisors, etc.)

5. Legal framework and infrastructure

6. Education and Training

7. Universities and institutes

8. National culture

As such, education and training are an integral part of a nation's entrepreneurial ecosystem. For the successful startup, human resources for this activity need to be trained in reputable institutions. Consequently, universities and practitioners should plan for this trend, launching training programs for startups

The role of education with creative startups

To better understand the role of universities, we consider the paradigm of knowledge transfer and the way in which knowledge is spread naturally.

"Visible knowledge" is authentic and easy to express. "Hidden knowledge" is invisible and difficult to describe. It is not easy to express and is often highly personal. In order to develop new technologies and processes, the industry needs hidden knowledge. Therefore, the gap between what the industry needs and what the university has in developing the basic knowledge is legalized and delivered through text, patents. Industries need hidden knowledge to be able to apply and explain specific situations.

1.2. Education and training experience for startups in the world

1.2.1. American experience

In the United States, between the 1970s and the mid-2000s, 500,000 to 600,000 new businesses opened each year and the emergence of powerful corporations made the US economy peak. What made this development of America? There are many factors that make America flourish, but the American entrepreneurial spirit and the important role of the university are one of the determining factors.

Firstly, *college education is highly regarded by the US Government, and is considered to be a key driver of innovation.* Policy-makers in the United States argue that universities play an important role in developing the regional economy and promoting entrepreneurship. And indeed in the United States, universities have made a huge contribution to the nation's entrepreneurial movement, for example:

- The Massachusetts Institute of Technology Valley plays a role in promoting industry in Boston and Stanford University in the Silicon Valley region. MIT has helped to advance the digital age by paving the way for modern computing and networking technologies, writing interactive user software. MIT has benefited not only industrial companies, but it has also had closer relationships with its new sponsors, volunteer organizations and the federal government.

- NJIT (New Jersey Institute of Technology). NJIT see economic development as one of its four major missions.

- Lehigh University has become a pioneer for regional economic development by computer and software.

Secondly, *American universities build their way of life and culture in the university.*

Babson, the first university in the United States for three consecutive years of teaching startups, is ranked in the top three in the US News & World Report. Babson builds entrepreneurial culture by encouraging students to test new business ideas; giving scholarships to students from the first year, supporting the startup knowledge for students by specialized courses such as legal, intellectual property for products, product quality standards ...

Thirdly, Developing university- and industry-linking programs. Collaboration between companies and universities manifests itself in many ways. According to the National Science Foundation (NSF), there are four components of a university-company relationship: research support, research collaboration, knowledge transfer and technology transfer.

- Research support: includes both financial and equipment support for the university from the industry. Value-added contributions include: providing flexible, modern laboratories; Development programs in focus areas.

- Research Collaboration: Universities develop the form of collaborative research with support from industrial business. In the United States, NSF has actively encouraged the formation of research collaborations through the establishment of research centers such as the ERC (Engineering Research Center), the IUCRC (Industry University Cooperative Research Center). It provides basic forms for collaboration, to facilitate collaboration between universities and industrial companies.

- Knowledge transfer: including communication activities (both formal and informal), exchange between students and faculties. The cohesive activities of companies in the university curriculum are the main mechanism for the transfer of knowledge.

- Technology transfer: This activity is based on research cooperation with the industry. The US Department of Agriculture develops expanded service models in the agricultural sector for the transfer of agricultural technology to farmers. In particular, universities are the main source of information.

Fourthly, universities play an active role in setting up different organizations such as business incubators, science parks, technology parks, etc. to support business development and startup businesses. This depends on their ability and the target strategy of starting a business. Incubators mainly focus on centers and resources related to infrastructure. The projects within the incubator have excellent opportunities for connection with other supportive resources.

1.2.2. Finnish experience

Finland has always been considered one of the world's leading technology startups, which have produced technology giants like Linux and Nokia, as well as popular global games such as Angry Bird and Clash of the Titans. Clans are ranked high in international education. Startup in Finland is not only famous for startups like Angry Birds, but also for the development of dozens of startups in the education sector with a startup worth $ 1 billion each. Only in 2014, more than 400 new high-tech companies were established in Finland.

Firstly, the Government, represented by the Ministry of Education of Finland, gives universities the autonomy to adjust lessons and teaching method in large scale. This will give the school enough space to easily adapt to changes in the social needs of the school. For example, a high school in Espoo has chosen technology as its highlight in the curriculum. Saarnilaakson Koulu offers a special class of only 20 students who specialize in exploring information and communication technology applications across a variety of subjects. In Finland, most teachers and lecturers are active in their own curriculum and are capable of

doing their own research. So when teachers have ideas they can promote research in the classroom and then gradually expanded. Therefore, startup eco-systems in Finland will be owned by education, while technology is only a tool for developing truly useful products.

Secondly, *the Finnish Government focuses on supporting and encouraging startups among students, mainly in the field of technology.* The Startup is supported by scientific studies from universities in Finland. These studies serve as an important benchmark for Startup products in the right direction, suitable for users not only in Finland but globally.

Thirdly, *the government provides funding to universities to study new business models and technology products.* Combination of education and startup in Finland, other than two traditional functions are research and research-based education, the third function is equally important to play a major role in providing new technology and business models for economic development and innovation in the region. To perform the third function, the government provides 65 percent capital and universities will find the remaining 35 percent. The 2004 "Entrepreneurship in Finnish universities" report by Piia Nurmi and Kaisu Paasio studied 21 universities in Finland on startup assistance. The report stated that:

- Startup is not just formed in multidisciplinary schools. Students of the school understand the spirit of starting a business. Regularly organized business activities will have the effect of promoting startups with students of universities with areas of intensive training.

- Business economics Business training and startups are very powerful in many ways.

Fourthly, *form the culture of starting a business when still in school.*

In Finland, startup education is very strong, so that from the moment you sit in the school, students here can "think of a company." Business Training for Students They offer business courses to a wide range of students. Schools encourage startups by engaging in technology transfer and spin off models, developing existing businesses by commercializing them based on school research.

Spin off technology is a technology company that implements the results of applied research by scientists in the form of co-ownership of research institutions and inventors, and Managed independently from the research facility. The company develops and manufactures products from the technology developed by the researcher, and sells the product to the market through appropriate distribution channels. Or on a smaller scale, a spin-off company can be a viable medium to further develop technology to deliver to larger manufacturing companies.

Fifthly, besides education in schools, Finnish students are supported by many non-governmental organizations such as the Economic Information Office (EIO) for more practical knowledge. Startup promoters often organize youth events in areas such as programming and thinking development to encourage students' connection and aspirations. In Finland, students approach startup businesses as soon as possible, as this will help them to have a common voice for future startups. Financial support from startup like many other startup eco-systems, Finland has a very good investment and infrastructure system to support startups in the technology sector.

1.2.3. Israel's experience

Israel's economic growth story has peaked up by 50 times in the past 60 years, not just the story of entrepreneurship. The history of Israel is a country that has experienced stagnant inflation, from a dry, lifeless country, but the economy has grown tremendously. In 2016, the population of Israel has yet to reach 8.5 million, but there are 6,500 technology companies, 24 government technology incubators, more than

50 accelerated startups; No. 1 in the world for attracting venture capitalists ... The decisive factor for this success of the Israel economy is not just the story of a violent nation, entrepreneurial spirit, local factorsor pure politics. Students at universities are a significant resource, a strong startup mentality, entrepreneurship with universities, as well as technology incubation and acceleration programs. They are given opportunities to create as much creative ideas as possible.

Firstly, build a culture and startup skills

In Israel, most people join the army before entering university. In the military, many have the opportunity to learn more about technology, as this is a key element in communication and other activities. The environment and culture of the Israeli military is highly encouraged by the startup and leadership. Military training also imbues the values needed to build and develop startup companies. When entering the university, from the moment of sitting in the lecture hall, students have been trained and imparted knowledge about starting a business. In Israel, it is no stranger to refer to the term "startup" because it is considered to be a culture of entrepreneurship. The good thing about the culture of starting a business here is that not every country can do it: respect for ideas, culture of accepting failures, dare to face new and strange things.

Secondly, students are encouraged to start their own business. Students from the second year onwards are almost obligated to have their own business project, start a company, start a business ... All of that helps students in Israel no longer strange to the business startup world later. In particular, eight colleges and more than 70 public and private colleges have been trained in entrepreneurship. Technion University, Hebrew University of Jerusalem, Tel Aviv University, Haifa University, all integrated into the startup center to offer courses and startup modules for students. These programs are for both undergraduate and graduate students. Shamoon's engineering college is launching an entrepreneurial startup program that offers startup modules, business training, and mentor mentorship to startup sophomores. However, startup programs for graduate students are often taught in a more selective and technology-driven way.

Thirdly, universities actively implement programs focusing on advanced skills. The program aims to provide key executives, effectively in creating connections and having practical mentor elements. Specifically, the following programs are of interest: The Innovation Management Forum offers management training for large companies in the high tech and traditional industries. It is a series of monthly lessons and meets top executives, researchers and leaders, CEOs. The Moving Up program focuses specifically on the operation of the traditional industry. It is a collaborative effort between Technion University and the Ministry of Economy & Industry. The program includes 6 seminars, one month's lectures, real-life situations, meet the guests, mentors. During the workshop, attendees listened to lectures with a theme that focused on innovation in organizational management. The main objectives include innovation strategies, the journey of ideas, change management and leadership topics, team work, innovation in the global world, innovative marketing strategies, reativity and human resources strategy. The program provides participants with a variety of tools that focus on encouraging and implementing innovative processes in their organizations. Participants are guided by startup professionals in planning and implementing specific projects. Moving to the north is the shift from SMEs to traditional industries in the northern border. The goal is to encourage collaboration and innovation among participating companies through a series of practical workshops that go beyond organizational innovation.

Fourthly, universities encourage and train students to build entrepreneurial ideas. Program such as JA - YE Europe, which organizes activities in Israel through the Association of Young Entrepreneurs,

supports groups of 15-18 year olds participating in the mini - corporation program. Under the guidance of school counselors, centers and volunteer mentors. It also offers a 6-hour Program Company approach to 14-15 year olds.

Fifthly, programs co-located with universities and businesses

Typically the program is submitted to the IIA (Israel Innovation Authority programs) with an annual budget of 200 million NIS. It is the main part of using the Magnet Consortia program to support R&D projects with the goal of increasing competitiveness by allowing companies to work with researchers from at least one research institute from leading general technology projects to projects that bring new advantages. The program provides support for the company's conditions and can be up to 66% of the cost, while academia can be up to 80% of the cost, while the remaining 20% will be spent by the partners. The project has a life cycle of 3-5 years. Many projects have been made with the Technion Institute - Israel, a public university in Haifa. Under the Magnet Consortia program, it is a series of smaller programs. Magneton provides over 66% of R&D funding, which is a real testament to the relationship that exists between technology companies and academia. The Noffar program provides over 90% of the cost of developing products from companies in the industry for the transfer of academic research into specialized industrial applications in the field of biotechnology and nanotechnology.

1.3. CONCLUDE

By exploring the entrepreneurial ecosystem's experiences, it is important to see the university role in the Singapore startup ecosystem. Universities are a pioneer and leading force in initiatives to support the entrepreneurial community by engaging in entrepreneurial training, enhancing entrepreneurship, setting up workspaces as well as organizing connection events. Universities in Vietnam should actively work with government representatives to directly implement government startup programs and policies.

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THE GROWTH OF FINTECH STARTUP FIRMS IN VIETNAM

Ngo Duc Tien*

ABSTRACT: This paper presents the development of fintech startup companies, their types and their future in Vietnam. The expected scientific contribution supports the defining stages of development for Fintech startups, as well as their challenges. The goal of the research was to investigate whether Vietnam would be ready for the rapid growth of Fintech startups. Scientific and research contributions of the paper are reflected in the fact that there is a relatively small number of papers, especially in the external literature, that address these issues. Therefore, this research can contribute to a better understanding of the growth of fintech startups in Vietnam. Presented and interpreted results could be a useful basis and encouragement for a further research in this and similar topics related to the startup scene at the local as well as the global level.

***Keywords:** fintech, startup firms, financial technology*

1. INTRODUCTION

"FinTech" is an abbreviation for "Financial technology" which applies the technology methods to solve financial needs. The original term can be initiated from the early 1990s, relating to a project namely "Financial Services Technology Consortium" created by Citigroup to motivate the technological cooperation[2]. Nevertheless, it is until 2014 that the policymakers, manufacturers and consumers alike have paid attention to FinTech. Now, FinTech is one of the large and fast growing industries which have been chose by many huge investors all over the world. This speedy growth led to demand of greater regulatory scrutiny which is firmly assured the basic role of FinTech in the functioning of finance and its infrastructure. Nowadays, FinTech is often considered as the special combination of financial services and information technology.

Like many industries in Vietnam, the FinTech sector has seen rapid growth in recent years. Vietnam is currently ranked second in the number of incubator, accelerator, and innovation labs in the region, behind only Singapore. This is a positive signal for the development of fintech in Vietnam. While it is difficult to gauge the exact amount of investment new FinTechs have attracted, an estimate published in Vietnam Investment Review from the Topica Founder Institute put the total investment in Vietnamese FinTech startups in 2016 at $129 million dollars, accounting for 63 per cent of all startup contract value, with companies such as Payoo, VNPT E-pay, M_Service (Momo), and F88 leading in terms of deal value. Much of the development in the sector has been driven by technology entrepreneurs from outside traditional financial institutions. This has created some tension between these digital disruptors and legacy banks as the latter have moved to also create tech products for their customers. Vietnam can expect its fintech ecosystem to grow in the near future should it pay attention to the funding issue, growing talent in the field, and a legal framework to support such growth.

Vietnamese Fintech startup firms are still small in scale and the policies and regulations for these

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companies are still limited. Many banks are still cautious in their decision to cooperate with fintech. They do not realise that there are people who have never opened a bank account, but the number of smart phone users is increasing. Fintech is the bridge that helps banks bring more services closer to more people. Apart from the funding issue, talent shortage and government support policies and regulations are other major challenges that fintech in Vietnam as well as the region have to face. Governments play a vital role in shaping a conductive fintech ecosystem that helps attract and develop the right talent pool and promotes innovation and collaboration and healthy competition.

This paper analyzes the evolution of, and outlook for, the FinTech startup firms in Vietnam and considers the conditions of their growth.

1. LITERATURE REVIEW

Definition of startup firm

Startup firms are newly founded companies or entrepreneurial ventures which are in the first phase of its operations. They are funded by their own founders as they believe that a product or service provided is a trend of demand. There is a definition by NESTA (Dee at al., 2015) that defines startups as:"*A young, innovative, growth-oriented business (employees/revenue/customers) in search of a sustainable and scalable business model*". This definition expands on Steve Blank's (2013) definition of startups as organization formed to search for repeatable and scalable business models. Startup firms are usually, but not necessarily, associated with high-tech projects because they mostly concentrate on software which can be easily made and re-made. In addition, high technology projects, in their nature, can be powerful motivation for the growth. An interesting fact shown by the research is that technology-oriented startups are typically located in major urban centres. The reason is attributed to the need for a market that exceeds the local level (Baptista, Mendonça, 2009). However, there are more and more startup companies in traditional industries and business sectors. At the international level, there is more and more research associated with the importance and ways of financing entrepreneurial ventures (formal and informal), especially in the period of intense globalization.

The operation of startups is often risky. First, many startups fail in the very early stages and less than one third of them turn into companies- *"high rate of failure"* (e.g. see, Vesper, 1990). Second, failure occurs due to several reasons, such as lack of finance, team management problems, lack of enough business knowledge, technology lag, etc.-*"startup problems"* (e.g. see,Núñez, 2007). Third, most of startups that survive might turn into successful companies which play a significant role in economies- *"success stories" (*e.g. see, Martinsons, 2002). Fifth, there is a black box called "valley of death" which is more of a metaphor than a well-defined stage (Hudson & Khazragui, 2013). Even if this black box is well studied, the startup itself is ignored as the level of analysis- *"startup stage"* (e.g. see, Van de Ven et. al., 1984).

The product of startup firms is often very new and its first appearance can be very difficult as well as highly invested. Owing to limited revenue or high costs, most of these small-scale operations are not successful without additional funding from others financial resources (not only their owners).

Definition of Fintech

Kawai (2016), General Secretary of the International Association of Insurance Supervisors, a member organization of the Financial Stability Board, offers a working definition of "FinTech" as follows: *it is a "technologically enabled financial innovation. It is giving rise to new business models, applications, processes and products. These could have a material effect on financial markets and institutions and the provision of financial services."*

"FinTech is an acronym which stands for financial technology, combining bank expertise with modern management science techniques and the computer" [Bettinger 1972].

"Financial Technology, also known as Fintech, is a new sector in the finance industry that incorporates the whole plethora of technology that is used in finance to facilitate trades, corporate business or interaction and services provided to the retail consumer" [Micu & Micu, 2016].

"Fintech is an emerging financial services sector that includes third-party payment, MMF, insurance products, risk management, authentication, and peer-to-peer (P2P) lending" [Shim & Shin, 2016].

The Fintech companies combine financial services with new innovative technologies. They provide Internet-based and application-oriented products. The aim of Fintechs is attracting the clients with more user-friendly, efficient, transparent and automated products and services. As a rule, new participants in the market offer Internet-based and application-oriented products. FinTechs generally aim to attract customers with products and services that are more user-friendly, efficient, transparent, and automated than those currently available. Traditional banks have not yet exhausted the possibilities for improvements along these lines (EBF 2015; Mackenzie 2015). The fintechs not only offer products and services in banking sector but also distribute insurance and other financial instrument or provide third party services.

The term "Fintech" is not able to define on the basis of its use in legislation or official legal documents. Each Fintech company is under the different kinds of legal and regulatory obligations in accordance with their business models or products or services they make. In the end, it is not possible to construct a restrictive definition of "FinTech" that applies to all of the entities traditionally associated with the term. While most companies in the FinTech industry have certain features in common, there are always enough exceptions to render them inadequate for producing a general definition. For example, many of the FinTech companies are in their startup phase. However, since not all FinTech companies are startups, this category cannot be an essential part of a FinTech definition. The same applies to the participation of a large number of investors in a funding opportunity (the "crowd") or the use of social-media components. Although these two features are integral to the operation of many segments of the FinTech industry, such as in crowdfunding or social trading, there are others, such as innovative payment services, where they have no importance at all. For this reason, rather than trying to provide a restricted or legal definition, the following section will provide a summary of the various major segments of the FinTech industry.

Segments of the FinTech Industry

Figure 1: Segments of the FinTech industry
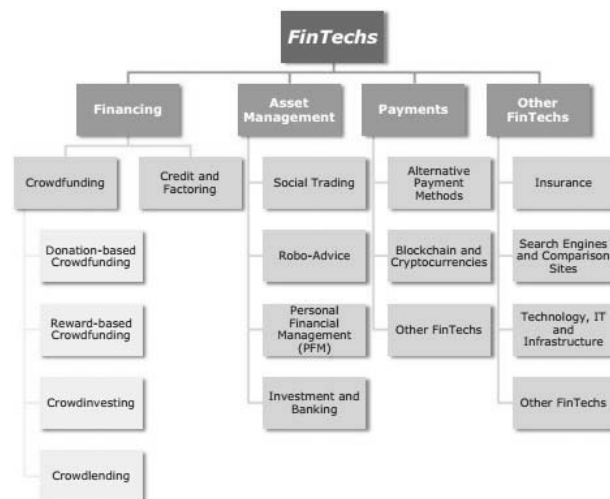
Sources: [10]

Firms in the FinTech industry can be separated into four major segments based on their specific business models. By analogy with traditional value-adding areas of a universal bank, FinTechs can be distinguished on the basis of their involvement in financing, asset management, and payments, as well as other FinTechs, a loose assortment of companies that perform other functions. Figure 1 illustrates this categorization and provides a detailed representation of the sub-segments of the industry.

3. RATIONALE FOR FINTECH STARTUP FIRMS TO DEVELOP IN VIETNAM

The country with young population and a larger number of Internet users

Vietnam has over 90 million people with young population. Most of them were born from 1980 to 2000 and their lives have strong connection with internet. Vietnam's Internet penetration rate reached 52% in 2016 while smartphone ownership accounted for 72% in urban areas and 53% in rural areas. This makes Vietnam one of the fastest growing adopters of smartphones in Southeast Asia.
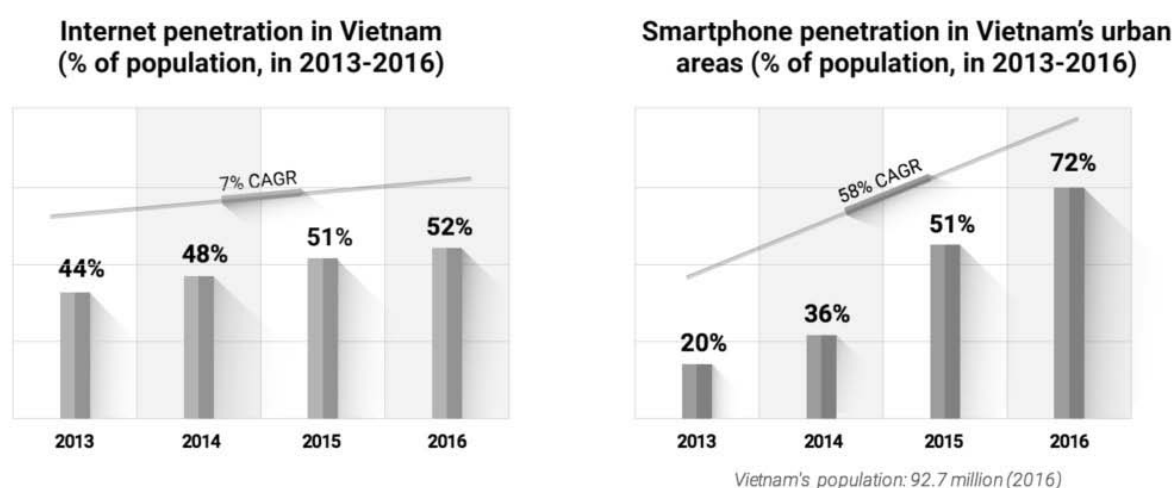
Figure 2: Internet users in Vietnam

Sources: [14]

67% of Vietnamese population are Internet users, 57% are active social media users and 73% are individual mobile phone users. The annual growth rate in Vietnam is breathtaking –the percentage of Internet users increases by 28% (or 14 million people) and 20% for active social users, according to a Kepios report. This indicates great opportunities for new product ranges focusing on this consumer segment. Moreover, Vietnamese attitudes towards technology is very positive and with great potential, 61% of Vietnamese people believe that new technologies offer more opportunities than risks and 63% prefer to complete task digitally whenever possible.

Choosing payment method provided by Fintech startups is a trend in Vietnam

The digital finance industry in Vietnam is a promising market for both traditional banking institutions and new market players, spanning across payments, loans, financial inclusion, block-chain and more. At the same time, the continuous pressure to respond to ASEAN economic competition is encouraging local players to step up their game, while collaborating with foreign counterparts.

The clients in Vietnam now can choose more methods for payment than the past. For example, to pay the electricity bill, the Vietnamese can use the fintech startup firms such as ECpay, Payoo, Bankplus wallet and etc instead of online banking or cash. Despite the fact that fintech is not too familiar with

the Vietnamese (the first fintech firm was founded in 2005, namely VTPay), the amount of transaction is dramatic with various and potential suppliers to participate in. Following Statista (2017), the estimation of Vietnam Fintech transaction is US$ 7,259 million in 2017, with the average developing proportion of 17,5% from 2017 to 2021. The biggest field is "digital payment" with total transaction value of USD 7,252 million (99.9%). This is one of the very few best fast growing sectors, and one of the hottest investment trends for startups in Vietnam.
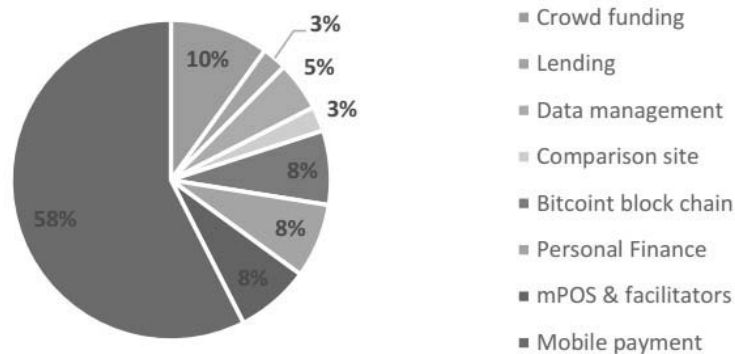
Figure 3: Distribution of Fintech companies in Vietnam by activities

Sources: [11]

The capital flowing into Fintech startup firms is rising so fast

Vietnamese fintech market reached USD$ 4.4 billion in 2017 and it is forecasted to be USD$ 7.8 billion in 2020 (following the research of Solidiance). In published report namely "Unlocking Vietnam's Fintech Growth Potential", Solidiance recorded plus point for some factors including the rate of internet and smartphone users, e-wallets, income and consumption and e-commerce.

Following the report of Topica Founder Institute about top 6 industries with the highest startup deals in 2016, Fintech industry ranked the first place for 9 successful deals and total value was US$129.1 million. In 2017, Fintech stepped back to third place with 8 deals, contributing US$57 million. Although the capital flowed into Fintech startup firms decreased in 2017, it was still one of 6 sectors which received the highest investment value.

4.   THE GROWTH OF FINTECH STARTUP FIRMS IN VIETNAM

Legal framework for promoting the operation of Fintech startups

Vietnam has set up the basic regulations for digital finance, including non-cash payments and intermediary payment services (e.g. digital wallet services) since 2010. The Overall plan for digitalizing payments were initiated in the promotion of e-commerce in Vietnam with the Prime Minister's Decision No. 1073/QDTTg in 2010 on approving the master plan on e-commerce development during 2011-2015; and the Government Decree No. 52/2013/ND-CP on e-commerce. In November 2012, the Government of Viet Nam issued Decree 101/2012/ND-CP directing the issuance of regulations for non-cash payments. Circular 36/2012/TT-NHNN and Circular No. 39/2014/TT-NHNN were eventually issued in December 2014, providing guidelines for intermediary payment services.

On July 1st, 2016, Decree 80/2016/NC-CP was issued amending Decree 101. Subsequently, Circular No. 20/2016/TT-NHNN was issued amending Circular No. 39.The digitalizing payment ideas

are clearly stated in the Government Decree No. 101/2012 on non-cash payment and Decree No. 80/2016 amending the Decree No. 101 above. Of which, non-cash payment can be carried out by both credit institutions (including microfinance institutions) and intermediary service providers who have licenses from the State Bank. The plan for implementing Government Decree No. 101/2012 has been made further steps by the State Bank of Vietnam (SBV) Circular No. 39/2014/TTNHNN on intermediary payment services. Government also limit transactions paid in cash in the Government decree No. 222/2013/ND-CP to promote more non-cash payment (e.g. no cash payment for organizations using State budget source, securities transactions via Stock Exchanges, enterprise capital contributions and purchases – articles 4,5,6)1.

On 17th March 2017, Governor of the State Bank of Vietnam (SBV) signed Decision No.328/QĐ-NHNN to establish SBV Steering Committee on Financial Technology (Steering Committee on Fintech). The SBV Steering Committee on Fintech is led by Deputy Governor Nguyen Kim Anh and Deputy Director of SBV Payment Department Nghiem Thanh Son has been assigned as Vice Chairman of the Committee. SBV Steering Committee on Fintech with representatives from functional departments of the SBV and National Payment Corporation of Vietnam (NAPAS) is responsible for formulating and submitting to SBV Governor the annual action plan of the Committee; advising Governor the solutions to complete the ecosystem including a legal framework to facilitate the performance and the development of Fintech companies in Vietnam in line with guidance and orientation of the Government; discussing and submitting to SBV Governor several crucial substances relating to strategy, plan for accelerating the development of Fintech in Vietnam, … and conducting other tasks as authorized by SBV Governor. In this Decision, SBV Governor also approved to establish a Working Group to support for SBV Steering Committee on Fintech including officials and specialists from functional departments of the SBV and the NAPAS. Deputy Director of SBV Payment Department Nghiem Thanh Son is assigned by the Governor to be the Head of Working Group.Payment Department of the SBV has been tasked to be a Standing Agency for SBV Steering Committee on Fintech. The Decision No.328/QĐ-NHNN takes effect from the date of signing.

In 2016, the Prime Minister approved the "Supporting National Innovative Startup Ecosystem to 2025" Project, or Project 844, through Decision 844/QD-TTg/2016. It focuses on supporting the national innovation startup ecosystem through 2025 and developing a legal system and a national e-portal for startups by 2020. In addition, it will also provide funding support to 200 startup enterprises. In January 2018, the Law on Supporting Small and Medium-Sized Enterprises came into effect, with detailed provisions for support to startups in areas such as technology transfer, training, trade promotion, investments, preferential loans, and incentives for venture capital funds. Decree 38/ND-CP, which came into effect in March 2018, focuses on innovative startup investments. It identifies and recognizes startup investment activities as a business and provides legal status to innovative startup companies and funds. In addition, one of the regulations stipulates that the State can also invest in a startup, maximum to 30 percent of the total investments.

Highlight Vietnamese Fintech startups' timeline

Fintech sector is still unfamiliar to Vietnamese consumers even though payment intermediates appeared in 2008. In 2017, Vietnam had 48 Fintech startups and most of them specialized in payment segment.

Figure 4: Number of Fintech startups divided by segment in 2017
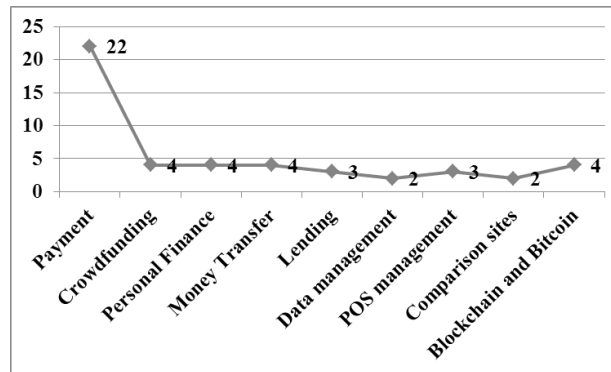
Basing on the statistics, over 40% of Fintech startups provide the online payment tools to clients, online POS/mPOS, transferring money and etc. Some popular Fintech startups in payment segment are e-wallet Momo and VNPT Epay from VNPT, VTC pay of VTC, ononpay, 123 pay, zing pay, sohapay,… Other segments of Fintech industry such as crowdfunding, personal finance, money transfer, lending, data management, POS management, comparison sites and block-chain and bitcoin have small size and operate with the lack of law guidance. Comparing with other markets as Singapore, Hong Kong or Campuchia, a number of Fintech sectors in Vietnam are still smaller than the potential market.

Regarding actual Fintech business / startups: Currently a lot of the "Fintech innovations" are still coming from the incumbents who have the money, the resources, the customer base and the infrastructure to roll out their solutions on a wide scale without the usual uphill battles startups have to fight. The flagship Fintech startup in Vietnam is certainly MoMo – the first Mobile Money company to really gain significant traction in this market. MoMo is especially focusing on bringing digital banking to the unbanked, rural population of Vietnam where the next physical bank branch can be kilometers away. Mobile wallet and payment app MoMo got great validation when it received some $28 million worth of investment from Standard Chartered Private Equity and Goldman Sachs back in 2016.

A fintech startup namely Moca (mobile payment platform) had to make its way through hard times over the past five years in order to reach their current success. It was officially licensed by the central bank in 2016 and has just signed a co-operation agreement with their 11th banking partner for their mobile payment product.

Moca and MoMo are just two of the numerous fintechs that have dared to think outside the box. By venturing to create financial solutions to address the needs of both the market and customers, they demonstrate confidence in the mobile payment market and the development of the fintech industry in Vietnam.

In November 2016, Vietnamese mobile content provider VMG Media, a company listed on the country's UPCoM bourse, sold its entire stake of 62.25% in VNPT EPay to UTC Investment, a venture capital arm wholly owned by Korea's Daesang Group chairman. The size of the deal was not disclosed. VNPT EPay's charter capital is VND 80 billion (USD 3.6 million), but sources said the South Korean investor had spent USD 33.8 million to acquire the payment firm, dealstreetasia.com reports. VNPT EPay, founded in 2008 by VMG Media and Vietnam's third largest state-owned mobile network operator Vietnam Post and Telecommunications Group (VNPT), which holds a 35% stake, along with other shareholders, boasts itself as the country's third biggest e-payment business, according to the source. UTC Investment specialises in buyouts and investments in startups, with a focus in the Korea market while also making cross-border investments primarily in China and Japan, VNPT EPay said in a statement. VMG Media had a debut on UPCoM in August 2016, the IPO that saw its VC backer Cyberagent Ventures exit.

On 30th November 2016, Credit China FinTech Holdings Limited ("Credit China FinTech" or the

"Company"; together with its subsidiaries, the "Group", stock code: 8207), a leading integrated fintech service provider in China,was pleased to announce that the Group intends to acquire approximately 51% of the enlarged issued share capital in Amigo Technologies Joint Stock Company ("Amigo Technologies") at a consideration of approximately USD12.73 million, equivalent to a valuation of approximately USD25 million. Established in January 2005, Amigo Technologies is principally engaged in the provision of IT services and solutions for personalised financial services in Vietnam. It is currently a strategic partner of many of the world's leading providers of IT solutions and devices including IBM, HP, Dell, Oracle and Microsoft. It ranks among Vietnam's top five IT service providers targeting large financial corporations by market share.

Vietnamese mobile wallet and phone top-up startup OnOnPay topped up its own balance with a pre-series A round worth US$800,000, the company announced in December 2016. The round was led by Asian venture capital firm Gobi Partners. Existing investor Captii Ventures participated. OnOnPay will use the funding to grow its user base and keep developing its tech. Founded in early 2015, OnOnPay addresses the needs of unbanked people in a market where credit cards are not widely used. The startup offers both a web-based platform and a mobile app that allows users to top up their prepaid phones and win rewards like extra credit and coupons.

5. CHALLENGES OF FINTECH STARTUPS IN VIETNAM

Firstly, the legal framework is not accurately sufficient, especially for new technologies. The time for updating, amending and supplementing legal documents is too long and not adopting to the rapid development of technology.

Secondly, Vietnam's technological infrastructure does not meet the requirements of high technology development, especially security technology.

Thirdly, Fintech startup companies often have difficulty with their business model, management model as well as long-term development direction, which can be obstacles to the growth of them.

Fourthly, the awareness of consumers using Fintech services is not high so that they can create "security holes". They still misunderstand the important of protecting their personal information such as full name, number of identification card, address, date of birth, and so on. This can lead to the threat for consumers' accounts as well as the operation of Fintech startups.

6. SOLUTIONS FOR PROMOTING THE OPERATION OF FINTECH STARTUPS IN VIETNAM

To overcome the challenges for better and moreeffective/efficient in promoting the growth of fintech startups in Vietnam, some recommendations to stakeholders are proposed as below:

To the Government: Building Fintech development policy is closely linked to the development of the banking and financial system and the economy. The Government should consider the development of Fintech startup firms associated with promoting the application of science and technology in the field of finance and banking, is a part of the financial and banking industry, under the management of specific industries. Besides, there are tax exemption and reduction policies; policy to support accessing to capital; create an environment for investing in Fintech sectors, in cooperation with the traditional financial-banking institutions.

Hợp tác song phương với các cơ quan quản lý các nước để trao đổi, chia sẻ kinh nghiệm hữu ích trong quản lý các DN Fintech.

To State Bank of Vietnam: quickly complete the legal regulations on Fintech. Accordingly, it is necessary to establish rules and regulations for the Fintech ecosystem; to focus on the legal framework for Fintech services / products; to build quickly legal regulations on virtual currency, bitcoin and recognize it as a kind of "virtual property"; to set standards of product and service listings for Fintech companies to operate in a transparent manner, including credit operations; saving; payment services, online money transfer; investment, insurance, financial consultancy; data analysis ... ; to define clearly business models of companies providing Fintech ...

To Fintech startups: (i) promoting the research and applying the benefits of blockchain technology, distributed diary technology ... in the financial sector - banking and other fields due to the great benefits of this technology; (ii) improving the quality of human resources for Fintech application and management, having exemption to train and attract the talents to Fintech industries, using the technical support from international organizations such as ADB, WBG and so on; (iii) enhancing the cooperation between parties in the supply of Fintech products; strengthening the cooperation between Fintech companies and traditional financial institutions, as well as internet and information providers ... to ensure that the parties can take advantage of their advantages and create favorable conditions for development of Fintech in Vietnam in the near future.

To other stakeholders (such as Ministry of Education and Training, Ministry of Information and Technology, Ministry of Labor, Invalids and Social Affairs, Ministry of Agriculture and Rural Development, and others): (i) Improving the internet and smart phone using quality; (ii) Actively implementing and participating in financial literacy campaign via several aspects; (iii) Utilizing social media (facebook, instagram, webs) for lowering the cost and increasing the access of people to key information relating to financial inclusion, fintech, e-wallet, money transfers, etc; (iii) Transfering the G2P into using all non-cash payment and encourage the final users/beneficiaries to use e-wallets.

7. CONCLUSION

Overall, the paper reflected a positive outlook for the FinTech startups, and Fintech products in general, in Vietnam. Though the future may be bright, that light is still some way below the horizon as central bank authorities are supportive and taking steps to build a robust regulatory framework while trying to keep pace with the speed of innovation. In a sector moving so fast, it seem patience is the key.

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A HYBRID MODEL OF MACHINE LEARNING REGRESSION AND SWARM INTELLIGENCE FOR STOCK PRICE FORECAST IN VIETNAM

Truong Thi Thu Ha*, Ngo Ngoc Tri**

ABSTRACT: *In recent years, financial time series forecasts have become a challenging issue and attracted many researchers. This study develops a novel hybrid model to forecast stock price in Vietnam Stock Exchange. The least squares support vector regression (LSSVR), a machine learning technique, is utilized as a forecast model. A swarm intelligence – firefly algorithm (FA), is applied to optimize hyperparameters of the LSSVR for improving forecast accuracy. Two daily closing stock price datasets are used to validate the predictive ability of the FA-LSSVR, which are Vietnam Dairy Products Joint Stock (VNM) and Joint Stock Commercial Bank for Foreign Trade of Vietnam (VCB). Experiment results confirmed that the proposed hybrid model is effective in forecasting stock prices. Comparison results show that the forecast performance of the proposed model is superior to that of the LSSVR and ARIMA (autoregressive integrated moving average) for both datasets. A finding of the study provides decision-makers with a potential and effective forecast tool in financial markets.*

Keywords: *stock prices; financial forecast; least squares support vector regression; firefly algorithm.*

1. INTRODUCTION

The stock market plays a crucial role in an economic development of a nation and the world. It affects the capital raise for enterprises, the savings mobilization for investments, and the reallocation of wealth [1]. Decision-makers can take a distinct advantage if they have considerable business acumen and can predict the future status of stock market [2]. Stock price forecast has attracted increasing attention of researchers and practitioners over years. An accurate forecast of stock price values has been considered as one of the most challenging tasks since the intrinsic non-stationarity and non-linearity of financial data.

Stock price forecast is the process of determining the future stock values of a company considering its historical values. Introduced by Box and Jenkins [2], an autoregressive integrated moving average model (ARIMA) has been one of the most popular time series forecast models. It assumes a linear relationship between the current value of the underlying variables and previous values of the variable and error terms [3]. Unlike ARIMA, neural networks are data-driven and non-parametric models. They are universal function approximators that can map any non-linear function without a priori assumptions about the properties of the data [4]. Neural networks has been successfully applied in financial time series data [5-7]. Panda et al. (2007) [5] utilized neural network, linear autoregressive, and random walk models to make one-step-ahead forecast of weekly Indian rupee/US dollar exchange rate. Experimental results indicated that the forecast performance of neural network model is superior to that of linear autoregressive, and random walk models in most of evaluation criteria.

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Recently, support vector machines (SVMs) introduced by Vapnik [8], has widely applied in solving regression, classification tasks, and time series prediction. By minimizing an upper bound of the generalization error, SVMs achieves the better predicted results than neural networks that minimize the empirical error [9]. Kim (2003) [10] applied SVMs to predict a future direction of the daily Korea composite stock price index. The findings presented that SVMs had a better predictive ability than the back-propagation neural network and the case-based reasoning. Least squares support vector regression (LSSVR), developed by Suykens et at. [11], is an advanced regression variant of SVMs. The LSSVR solves linear equations instead of a quadratic programming problem solved by the standard support vector regression (SVR). The LSSVR, thus, reduces computational complexity while enhancing the efficiency of the standard SVR.

The performance of SVR highly depends on its hyperparameters, which are the regularization parameter and the kernel function parameter [12]. An adequate selection of these hyperparameters is crucial to obtain good performance in handling forecasting tasks with the SVR. Recently, evolutionary algorithms such as genetic algorithm (GA), particle swarm optimization (PSO) have been adopted to optimize the hyperparameters of SVR. The firefly algorithm (FA), a swarm-based intelligent algorithm, has been proven effective in solving optimization problems [13, 14]. Introduced by Yang in 2008 [15], the FA mimics the social behavior of fireflies in the summer sky. Previous studies indicated the superiority of the FA against some metaheuristics including GA, PSO, differential evolution, ant colony optimization, and simulated annealing [16-18].

This study develops a forecast hybrid model of least squares support vector regression and the firefly algorithm (FA-LSSVR). Two real-world stock price datasets in Vietnam stock market including Vietnam Dairy Products Joint Stock (Vinamilk-VNM) and Joint Stock Commercial Bank for Foreign Trade of Vietnam (Vietcombank-VCB) are used to validate the performance of the FA-LSSVR. Vinamilk and Vietcombank are one of leading stock indices in Vietnam Stock Exchange. In 2017, the market capitalization of Vinamilk and Vietcombank respectively ranked in the first position (9.5 billion US dollars) and the third position (5.9 billion US dollars) among top ten entrepreneurs listed in Vietnam Stock Exchange [19]. Criteria including root mean square errot (RMSE), mean absolute error (MAE), and mean absolute percentage error (MAPE) are used to evaluate the performance accuracy of predictive models.

The remainder of this paper is organized as follows. Section 2 elucidates methodologies consisting of the LSSVR, the FA, and the FA-LSSVR forecast model. Section 3 presents data preparation and performance measures. Experimental results and discussion are presented in Section 4. Finally, Section 5 draws conclusions and future works.

2. MACHINE LEARNING REGRESSION OPTIMIZED BY SWARM INTELLIGENCE

2.1. Least squares support vector regression

Machine learning techniques have been widely applied in predicting time series data [5, 10, 20]. The LSSVR, an advanced machine learning technique, was proposed by Suykens et al. [11]. For solving regression problem, the LSSVR maps nonlinearly the input space into a high-dimensional feature space, and then run linear regression in the feature space. The LSSVR finds the solution by solving a set of linear equations in the dual space rather than solving a quadratic programming problem with linear inequality constraints, as in the standard SVR. By this way, the LSSVR achieves a lower computational burden while enabling good generalization capacity [21]. Figure 1 shows a general structure of the support vector regression.

In a function estimation of the LSSVR, given a training dataset $\{x_k, y_k\}_{k=1}^{N}$, the optimization problem is formulated as

$$\min_{(\omega,b,e)} J(\omega,e) = \frac{1}{2}\|\omega\|^2 + \frac{1}{2}C\sum_{i=1}^{N}e_k^2 \qquad (1$$

subject to $\quad y_k = \langle \omega, \varphi(x_k)\rangle + b + e_k, \quad k = 1,...,N$

where $J(w,e)$ is the optimization function; w is the parameter of the linear approximator; $e_k \in R$ is error variables; $C \geq 0$ is a regularization constant that represents the trade-off between the empirical error and the flatness of the function; x_k is input patterns; y_k is prediction labels; and N is the sample size.

Since Eq. (1) is a typical optimization problem of a differentiable function with constraints, it can be solved by using Lagrange multipliers (α_k). The resulting LSSVR model for function estimation can be expressed as Eq. (2).

$$y(x) = \sum_{k=1}^{N}\alpha_k K(x, x_k) + b \qquad (2)$$

where α_k, b are Lagrange multipliers and the bias term, respectively; and $K(x, x_k)$ is the kernel function. In the feature space, the kernel function can be described as Eq. (3).

$$K(x, x_k) = \sum_{k=1}^{m} g_k(x)g_k(x_k) \qquad (3)$$
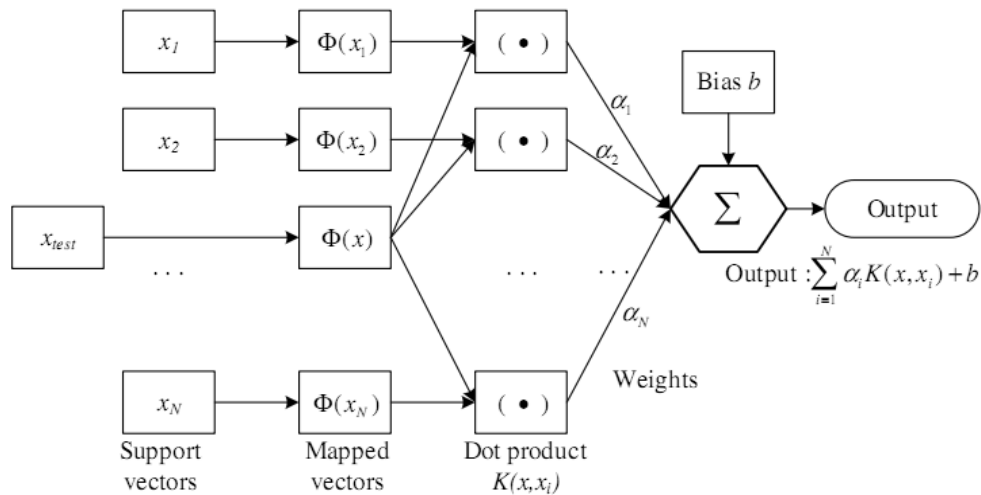
Fig. 1. *Architecture of support vector regression model.*

Typical examples of kernel function are polynomial kernel and radius basis function (RBF) kernels. In highly nonlinear spaces, the RBF kernel often yields better results than other proposed kernels [21]. The RBF function is mathematically expressed as

$$K(x, x_k) = \exp(-\|x - x_k\|^2 / 2\sigma^2) \qquad (4)$$

where σ is the kernel parameter which controls the kernel width used to fit the training data.

Despite the effectiveness of the LSSVR in solving prediction problem, it accuracy depends on the setting of hyperparameters. For enhanced prediction accuracy of time series data, parameter optimization in LSSVR should include a regularization parameter (C) and the RBF kernel function (σ).

2.2. Firefly algorithm

The FA, developed by Yang (2008) [15], is one of the most successful swarm intelligence methods. For solving a number of optimization problems, the FA is proven to be more efficient than some algorithms, such as GA and PSO [16, 22]. The FA is based on the flashing patterns and behavior of tropical fireflies to find both global and local optima simultaneously effectively. It has three idealized rules: (i) a firefly is attracted to other fireflies because they are unisex; (ii) attractiveness is proportional to brightness and decreases as distance increases; a firefly moves randomly if nothing else is brighter; and (iii) the brightness of a firefly is determined by the landscape of the objective function.

As a firefly's attractiveness is proportional to the light intensity seen by adjacent fireflies, the attractiveness β of a firefly is defined as

$$\beta = \beta_0 e^{-\gamma r^2} \tag{5}$$

in which β is the attractiveness of the firefly; β_o is the attractiveness of the firefly at $r = 0$; r is the distance between the firefly of interest and any other, e is a constant coefficient, and γ is the absorption coefficient.

The distance between any two fireflies i and j at x_i and x_j, respectively, is calculated as

$$r_{ij} = \left\| x_i - x_j \right\| = \sqrt{\sum_{k=1}^{d} (x_{i,k} - x_{j,k})^2} \tag{6}$$

where r_{ij} is the distance between any two fireflies i and j at x_i and x_j, respectively; $x_{i,k}$ is the kth component of spatial coordinate x_i of the ith firefly; $x_{j,k}$ is the kth component of spatial coordinate x_j of the jth firefly, and d is the number of dimensions of the search space.

The movement of the ith firefly when attracted to a brighter jth firefly is determined as

$$x_i^{t+1} = x_i^t + \beta_0 e^{-\gamma r_{ij}^2} (x_j^t - x_i^t) + \alpha^t [\text{rand} - 0.5] \tag{7}$$

where x_i^{t+1} is the coordinate of the ith firefly in the $(t+1)$th iteration; x_i^t is the coordinate of the ith firefly in the tth iteration; x_j^t is the coordinate of the jth firefly in the tth iteration; γ is the absorption coefficient and was set to explore global optima, γ varies from 0 to 1. The best result obtained in the sensitivity analysis of γ is $\gamma = 1$; $\beta_o = \beta_{\min} (= 0.1)$ is the attractiveness at $r_{ij} = 0$; α^t denotes a trade-off constant to determine the random behavior of movement; rand is a random-number generator uniformly distributed within [0, 1].

2.3. The FA-LSSVR model

This section elucidates the hybrid model of the FA and the LSSVR that is used to forecasting financial data. The FA is utilized to optimize the LSSVR parameters including the regularization parameter (C) and the RBF kernel function (σ). The proposed FA-LSSVR model was coded in the MATLAB programming language, and its flowchart is presented in Fig. 2.

At first, the original historical data are separated into learning data and test data. With a particular embedding dimension or *lag*, a state reconstruction is made to generate an input matrix and an output matrix. The *lag* value significantly affects the prediction performance of a model. A technical explanation of the state reconstruction is presented at [23, 24]. The learning data are then divided into training data and validation data. The training data are used to train the FA-LSSVR model while the validation data are used to optimize the FA-LSSVR model. Herein, the FA is applied to simultaneously and automatically identify

the optimal values of LSSVR's parameters (C and σ). The objective function of the proposed model is established based on the validation data as shown in Eq. (8). The optimization process ends when the stopping condition is satisfied and the optimal values of C and σ are determined. Finally, test data are used to test the performance of the optimized FA-LSSVR forecast model.

$$f(C,\sigma) = RMSE_{Val} = \sum_{i=1}^{n} \sqrt{\frac{1}{n}(y'-y)^2} \tag{8}$$

where $RMSE_{Val}$ is the root mean square error calculated according to the predicted (y') and actual (y) values, respectively, based on the validation data; n is the sample size of validation data.
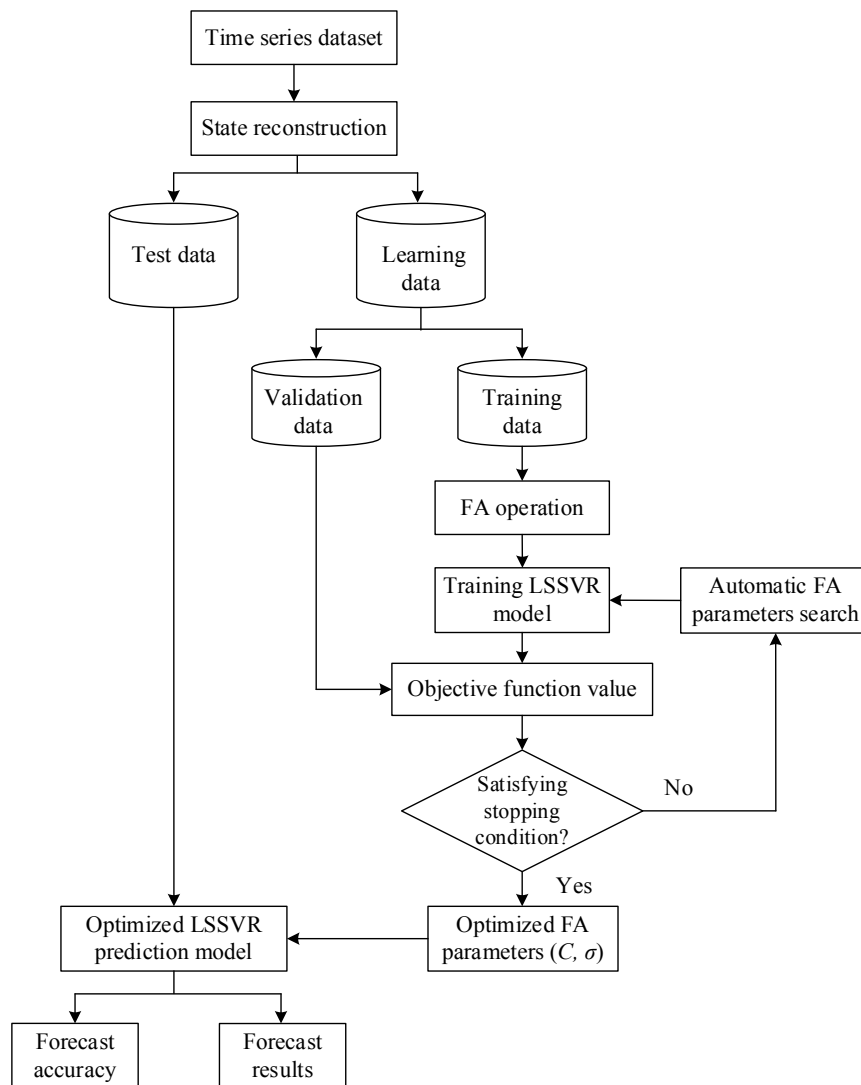
Fig. 2. *Flow chart of the FA-LSSVR model.*

3. DATA PREPARATION AND PERFORMANCE MEASURES

In this study, the performance of the FA-LSSVR is validated by two financial datasets collected from Ho Chi Minh Stock Exchange: Vietnam Dairy Products Joint Stock (VNM) and Joint Stock Commercial Bank for Foreign Trade of Vietnam (VCB) [25]. Each dataset includes daily closing observations from January 2015 to December 2017. In each year, the first ten months are used to train the model and the remaining two

months are used to test the model. Actual values of the VNM and VCB datasets are visualized in Figs. 3 and 4, respectively. The statistical characteristics of two datasets are described in Table 1.
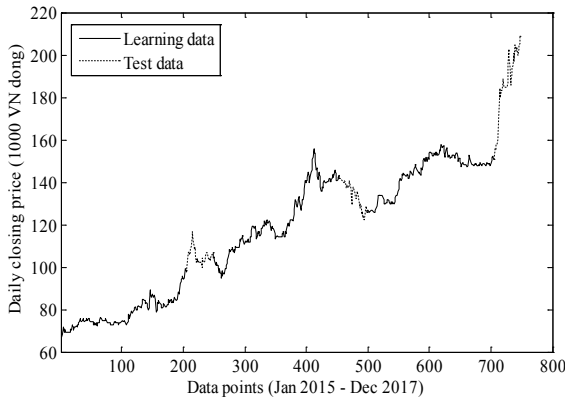
Fig. 3. *Daily closing prices of VNM.*
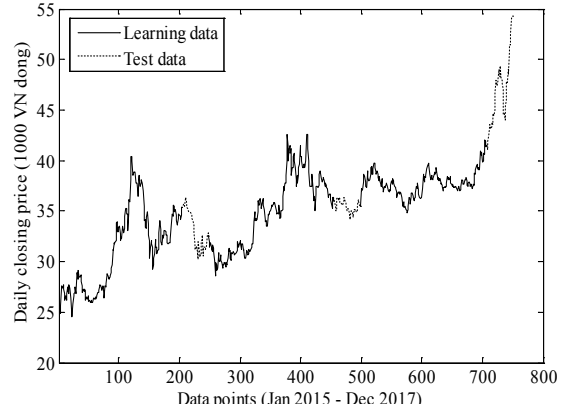
Fig. 4. *Daily closing prices of VCB.*

Table 1. *Statistical characteristics of two stock price datasets.*

Dataset	VNM			VCB		
	2015	2016	2017	2015	2016	2017
Data samples						
No. of total data	248	250	250	248	251	250
Period of learning data	January - October			January - October		
No. of learning data	204	206	207	204	207	207
Period of test data	November - December			November - December		
No. of test data	44	44	43	44	44	43
Statistical values of stock price (*Unit: 1000 VN dong*)						
Max	116.667	156.000	208.600	40.370	42.593	54.300
Mean	82.991	124.527	151.916	31.390	35.004	39.347
Min	66.667	95.000	126.000	23.630	28.593	34.850
Standard deviation	12.015	14.563	19.166	3.803	3.280	3.796

To assess forecast accuracy of predictive models, criteria are used including RMSE, MAE, and MAPE. The lower values of these criteria indicate the better forecast accuracy. Their corresponding equations are shown as follows.

$$\text{RMSE} = \sqrt{\frac{1}{N} \sum_{i=1}^{N} (y - y')^2} \tag{9}$$

$$\text{MAE} = \frac{1}{n} \sum_{i=1}^{n} |y - y'| \tag{10}$$

$$\text{MAPE} = \frac{1}{n} \sum_{i=1}^{n} \left| \frac{y - y'}{y} \right| \tag{11}$$

where y is the actual value; y' is the predicted value; and n is the number of test data.

4. EXPERIMENTAL RESULTS AND DISCUSSION

In this section, the performances of the ARIMA, LSSVR, and FA-LSSVR models are compared with each other using the VNM and VCB datasets. The initial settings of the proposed FA-LSSVR is presented in Table 2. Two hyperparameters of the LSSVR model are set to their default values (i.e., $C = 10$ and $\sigma = 0.1$).

Table 2. *Parameter settings of the FA-LSSVR.*

Components	Name	Settings
Learning data	Training data	70%
	Validation data	30%
LSSVR's parameters	C	$[10^{-3}; 10^{12}]$
	σ	$[10^{-3}; 10^{12}]$
FA's parameters	Number of fireflies	60
	Max. of generation	30

As mentioned in Section 2.3, the embedding dimension or *lag* must be defined before the prediction is made. In this study, the optimal *lag* is determined by a sensitivity analysis. In each dataset, a subset in the year 2017 is used to validate the FA-LSSVR model when *lag* ranges from 3 to 10 days. The result indicates that the optimal *lag* of VNM dataset and VCB dataset is 3 days and 4 days, respectively. The performance of predictive models are then compared by adopting the optimal *lag*. Table 3 and 4 respectively compare the performance of predictive models in forecasting daily closing stock prices of VNM and VCB. The average performance measures and improvement rates are showed in Table 5.

Table 3. *Performance measures of predictive models using the VNM dataset.*

	ARIMA			LSSVR			FA-LSSVR		
	RMSE	MAE	MAPE	RMSE	MAE	MAPE	RMSE	MAE	MAPE
	1000 VN dong	1000 VN dong	(%)	1000 VN dong	1000 VN dong	(%)	1000 VN dong	1000 VN dong	(%)
2015	6.552	4.952	4.60	23.399	23.117	21.87	2.081	1.552	1.46
2016	11.877	9.927	7.64	3.162	2.424	1.84	2.193	1.747	1.32
2017	38.252	35.101	18.17	45.462	41.578	21.50	4.395	3.292	1.75

Table 4. *Performance measures of predictive models using the VCB dataset.*

	ARIMA			LSSVR			FA-LSSVR		
	RMSE	MAE	MAPE	RMSE	MAE	MAPE	RMSE	MAE	MAPE
	1000 VN dong	1000 VN dong	(%)	1000 VN dong	1000 VN dong	(%)	1000 VN dong	1000 VN dong	(%)
2015	2.193	1.858	5.81	0.972	0.720	2.23	0.653	0.423	1.31
2016	0.872	0.741	2.11	0.436	0.348	0.98	0.357	0.263	0.74
2017	7.560	6.613	13.69	9.176	8.574	17.96	1.116	0.856	1.80

Table 5. *Average performance measures and error rates improvement by the FA-LSSVR.*

	Average performance measures			Improved by the FA-LSSVR		
	RMSE	MAE	MAPE	RMSE	MAE	MAPE
	1000 VN dong	1000 VN dong	(%)	(%)	(%)	(%)
VNM dataset						
ARIMA	18.894	16.660	10.14	84.71	86.81	85.11
LSSVR	24.008	22.373	15.07	87.96	90.18	89.98
FA-LSSVR	2.890	2.197	1.51	-	-	-

VCB dataset						
ARIMA	3.542	3.071	7.20	79.99	83.26	82.18
LSSVR	3.528	3.214	7.06	79.91	84.01	81.81
FA-LSSVR	0.709	0.514	1.28	-	-	-

Table 3 shows that the FA-LSSVR outperformed the LSSVR and ARIMA models in predicting the daily closing price of the VNM. The FA-LSSVR obtained the significant lower values of RMSE, MAE, and MAPE over a period of 3 years compared to the ARIMA and the LSSVR. The lowest MAPE obtained by the proposed MFA-LSSVR was 1.32% while those of the ARIMA and the LSSVR were 4.6% (in 2015) and 1.84% (in 2016), respectively. In addition, the ARIMA showed a better predictive ability than the LSSVR. Table 5 shows that the error rates of the proposed model were 84.71-86.81% and 87.96-90.18% lower than those of the ARIMA and the LSSVR, respectively.

Table 4 and 5 indicates that performance measures of the FA-LSSVR were superior to those of other models when using VCB dataset. The average MAE value yielded by the FA-LSSVR was 514 VND which was significantly lower than that yielded by the ARIMA (3,071 VND) and the LSSVR (3,214 VND). Similar to the VNM dataset, prediction errors obtained by all models in 2017 were higher than those obtained in 2015 and in 2016. This confirmed a strong fluctuation of Vietnam stock market in 2017. Comparing to the ARIMA, the LSSVR had lower values of RMSE, MAE, and MAPE, indicating its better predictive ability. The overall percentage improvement in error rates for the FA-LSSVR were 79.99-83.26% and 79.91-84.01% better than those of the ARIMA and the LSSVR, respectively.
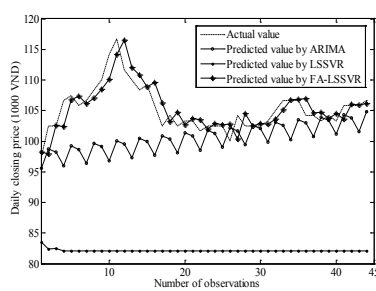
(a) VNM dataset - 2015
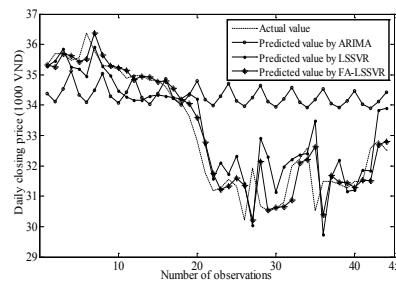
(d) VCB dataset - 2015
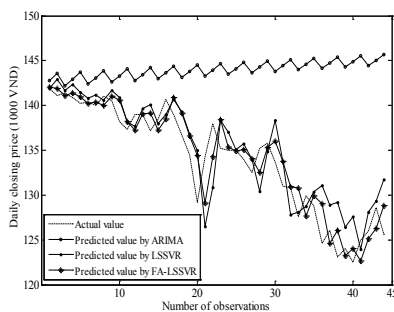
(b) VNM dataset - 2016
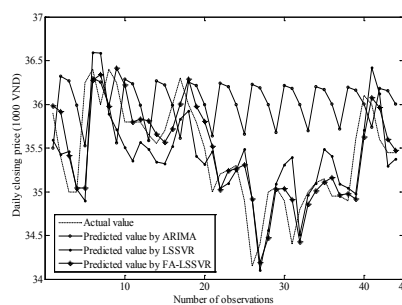
(e) VCB dataset - 2016
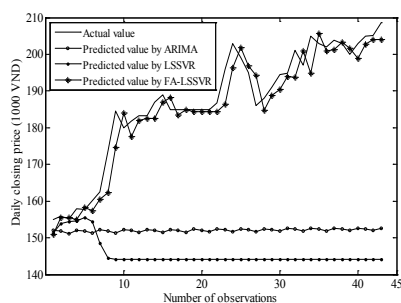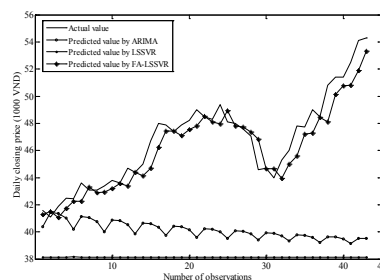
(c) VNM - 2017   (f) VCB dataset - 2017

Fig. 5. *The comparison of actual values and predicted values of the VNM and VCB datasets.*

Fig. 5 displays actual values and predicted values when using VNM dataset and VCB dataset, respectively. It is clear that predicted values achieved by the FA-LSSVR model were closer to actual values than those achieved by the ARIMA and the LSSVR models. This confirmed the efficiency of the proposed model in predicting stock prices.

CONCLUSIONS

This study proposes a hybrid model of least squares support vector regression and a firefly algorithm to forecast financial time series data. The FA was utilized to automatically optimize the LSSVR's parameters, which is aimed to improve the forecast accuracy. The proposed FA-LSSVR model was validated using two daily stock price datasets namely VNM and VCB.

The performance of the FA-LSSVR was compared with that of ARIMA and the LSSVR. Experimental results show that the predictive ability of the FA-LSSVR was superior to that of the ARIMA and the LSSVR in both datasets.

In practice, the stock price is affected by some factors like rates, political events that were not considered in this study. Thus, a novel model which predicts multivariate time series data should be developed. In addition, the proposed model needs to be confirmed by using other financial datasets like exchange rates.

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THE PRIME DETERMINANTS OF SELECTING PAYMENT METHODS IN M&A BUSINESS: THE CASE OF VIETNAM

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ABSTRACT: *The study aims to explore factors that affect the choice of M & A payment methods (cash, stock swap or mixed payment) conducted by financial institutions in Vietnam. Methodology: To carry out the analysis, this study focuses the past literature relating to payment methods in M&As and summarizes the positive and negative effects of different payment methods. A group of explanatory variables was created based on technical knowledge of M&A business in terms of payment methods, including (i) the group of variables reflecting the nature of the deal (M&A_size, M&A_ratio and M&A_option), (ii) the group of variables reflecting characteristics of the buyer (Foreign), and (iii) the group of variables reflecting the characteristics of the seller (Bidding, Revenue, Ebitda and Asset). The result shows that there are five key factors, including foreign involvement, M&A size, bidding, M&A ratio and total asset, that place significant influence on how financial institutions in Vietnam choose the payment method as carrying M&A businesses. Research Implications: The knowledge gained from this study will help managers from both acquirer and target companies for selection of appropriate payment methods.*

Keywords: *M&A business; Payment methods; Financial institutions.*

1. INTRODUCTION

M&A businesses and factors affecting the choice of M&A payment methods, (by cash or stock swap) are the main targets of this study. These days, M&A has increasingly become an emerging business in the Vietnamese market, bringing a variety of benefits to national joint-stock companies. Also, it has been seen as one of possible solutions for a process of structural reform in banking sector conducted by the State Bank of Vietnam since 2012 in order to meet new standards of corporate governance. Opinions have varied as to whether M&A would be a golden opportunity to enable commercial join-stock banks, either Vietnamese banks or foreign institutions, to conquer larger market shares, and also to enlarge business client networks with a continued expansion in business operation. Up to now in Vietnamese market, there are several specialized private companies working in M&A business with a prime target for searching profits, they either directly or indirectly have built up an irresistible momentum of M&A market, stemming from a wide range of market-oriented strategies. In addition, Vietnamese government has introduced the most recent and prominent policy relating to foreign ownership and investor since mid-2015 that can be seen as a move towards greater internal integration in the M&A wave with the private sector, enhancing more positive impacts and contributing to faster growth of Vietnamese economy. All these movements would be marked out the signs of a growing M&A market in Vietnam.

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However, companies carrying M&A business have to face numerous market risks and they inevitably encounter environmental challenges in terms of macroeconomics factors, financial legislations, and especially payment methods that might lead to an unsuccessful M&A business. Therefore, it would be necessary to raise serious doubts over the determinants leading to a success of M&A business, narrowing down to payment methods used regularly in M&A business in conditions of Vietnam market. Unfortunately, in Vietnam it is likely to be hard to find an in-depth research in public that found a comprehensive solution to this question. Thus, by conducting this research, the authors attempt to fill in the research gap in the field of M&A industry with a primary aim of identifying determining factors that influence the choice of payment method in M&A business in Vietnam context. The research results are expected to be extremely useful and can be act as either theoretical or practical knowledge to help M&A-related companies conduct successful M&A businesses. In addition, from the macro perspective, research results can also be used as strong suggestions for Vietnamese government to formulate policies to expand the M&A market in the future.

2. BACKGROUND AND POLICY DETAIL

2.1. M&A definition

According to Circular 36/ 2015 introduced by the State bank of Vietnam, mergers and acquisitions are defined as follows:

Merger of credit institutions means the transfer of all assets, rights, obligations and legitimate interests to a credit institution (hereinafter referred to as merged credit institution) (hereinafter referred to as the merging credit institution) and concurrently terminate the existence of the merged credit institution.

Acquisition of credit institutions means the transfer of all assets, rights, obligations and legitimate interests to form a group (hereinafter referred to as consolidated credit institutions). (hereinafter referred to as the consolidated credit institution) and concurrently terminate the existence of the merged credit institutions.

2.2. Methods of payment in M&A business

Since the main research question of this thesis focusses on the method of payment, it is important to be aware of the different possible methods of payment. On the one hand, acquiring companies might choose to finance the deal with cash. This is the most straightforward method, which seems to come without any ambiguity. There is a price for the desired company to take over or to merge with, which has to be paid in the correct currency. On the other hand, there is the option of paying for the deal with equity. In this case the acquiring company pays with their own shares, which all represent a certain value. The difficulty here however, lies in the fact that nobody can assure themselves of knowing the exact value of the equity, and therefore the exact price the acquirer is willing to pay. Of course, as a third option, also a mixture between these methods is possible and frequently used. In this case a part of the deal is financed with cash and the other part is financed with equity. Finally, in rare cases, the payment is done by exchanging other financial assets, like bonds or convertibles. However, in the majority of the cases the payment is done by one of the first three options.

- Method of payment in cash

Cash is the most common and simplest way to buy shares and assets of another company. Cash used in M & A transactions may be acquired by the Company from internal sources or through additional debt. The main advantage of cash payment is that corporate identity and ownership structure remain unchanged. However, the disadvantage of this approach is that tax should be paid to the target shareholders.

- Method of payment in stock swap

The method of stock payment is a non-cash payment method in which the acquirer issues its own equity to the target company as consideration of the purchase of the deal. In this method, both acquirers and target companies share the M & A results. The most important part of this method is to determine the appropriate exchange rate. The rate of exchange and price-earnings ratio of companies are two important factors that significantly influence the practical benefits for shareholders of companies who buy stock options for payment. Typically, it is an ideal way to finance an M & A deal in which the company's share price-earnings ratio is relatively higher than that of the target companies

- Method of mixed payment

The mixed payment method is a combination of both cash and non-cash payment methods. In this payment method, the purchase consideration is made through a combination of cash, stock, and debt.

2.3. Legal framework for M & A activities in Vietnam

- *Enterprise Law:* M & A regulation as a form of corporate reorganization, including mergers and mergers. It also regulates the procedures and procedures for acquiring shares, purchasing shares, acquiring private enterprises, merging and consolidating enterprises.

- *Competition law:* M & A is viewed as an act of economic concentration, including mergers, acquisitions, mergers and acquisitions. Introduce restrictions on M & A transactions based on the combined market share of the parties to the transaction

- *Investment Law:* Considering M & A is a form of direct investment that includes mergers and acquisitions, equity or equity investments to participate in investment management. Introduce regulations on capital contribution ratio, share purchase of foreign investors in some sectors of industry and power mergers, acquisitions of companies and branches. For credit institutions, M & A activities include consolidation, merger and acquisition activities and are specifically regulated in Circular 04/2010 / TT-NHNN. This is a special field and has a great impact on the national economy, so the conditions and procedures for M & A implementation are more detailed and strict than in other fields.

- *Commercial Law and Civil Code:* mainly regulate M & A in terms of contracts between parties. These types of contracts may include share purchase contracts, transfer contracts, property purchase contracts, joint venture contracts, etc.

- *Tax Law:* M & A will generally change in terms of finance, corporate income tax, personal income tax, value added tax, etc., so the participants must complete Tax obligations for the Vietnamese state.

- *Accounting Law*: regulations on consolidation of financial statements. In addition, the Circular No. 21/2006 / TT-BTC, Circular No. 161/2007 / TT-BTC, Accounting Standard No. 11 - Business Combinations, Accounting Standard No. 25 - Consolidated Financial Statements and Accounting for Investments in Subsidiaries.

- *Law on Auditing:* Examining financial activities of enterprises to determine the value of assets of enterprises.

- *Intellectual Property Law:* regulates the transfer of copyright and business secrets between the parties.

- *Labor Law:* requires M & A parties to fulfill their obligations to employees, employment options when the deal is successful.

Other regulations also regulate this activity such as valuation of assets, customs, real estate.

3. EMPIRICAL FRAMEWORK

3.1. Research model

From the previous studies (*Boateng, A., & Bi, X. (2014). Acquiring characteristics and method of payment: Evidence from Chinese mergers and acquisitions*; *DeYoung, R., Evanoff, D.D. & Molyneux. (2009). Mergers and Acquisitions of Financial Institutions: A Review of the Post-2000 Literature* and *Faccio, M., & Masulis, R. W. (2005, 6). The choice of payment method in European mergers and acquisitions*), the research has selected six independent variables that are relevant to the characteristics of Vietnamese enterprises as well as the data collection. In addition, through interviewing experts, the study added two independent variables to the research model including eight variables. There are some variables considered as dummy variables so the application of the Probit model for the study is appropriate.

To investigate prime factors that influence the choice of M&A payment method, this study created a model in association with Probit regression as follows:

$$M\&A_{payment} = \beta_0 + \beta_1 foreign + \beta_2 M\&A_{size} + \beta_3 biding + \beta_4 M\&A_{ratio} + \beta_5 asset + \beta_6 M\&A_{option} + \varepsilon$$

$$M\&A_{payment} = \beta_0 + \beta_1 foreign + \beta_2 M\&A_{size} + \beta_3 Bidding + \beta_4 M\&A_{ratio} + \beta_5 Asset + \beta_6 M\&A_{option} + \beta_7 Revenue/turnover_{ratio} + \beta_8 Ebitda + \varepsilon_2$$

$$M\&A_{payment} = \beta_0 + \beta_1 foreign + \beta_2 M\&A_{size} + \beta_3 biding + \beta_4 M\&A_{ratio} + \beta_5 asset + \beta_6 M\&A_{option} + \varepsilon$$

$$M\&A_{payment} = \beta_0 + \beta_1 foreign + \beta_2 M\&A_{size} + \beta_3 Bidding + \beta_4 M\&A_{ratio} + \beta_5 Asset + \beta_6 M\&A_{option} + \beta_7 Revenue + \beta_8 Ebitda + \varepsilon_2$$

$$M\&A_{payment} = \beta_0 + \beta_1 foreign + \beta_2 M\&A_{size} + \beta_3 Bidding + \beta_4 M\&A_{ratio} + \beta_5 Asset + \beta_6 M\&A_{option} + \beta_7 Revenue + \beta_8 Ebitda + \varepsilon_2$$

(1)

where:

M&A_payment = 1 if M&A payment made by cash;

M&A_payment = 0 if M&A payment made by stocks or a combination of cash and stocks;

A group of explanatory variables was created based on technical knowledge of M&A business in terms of payment methods, including (i) the group of variables reflecting the nature of the deal, (ii) the group of variables reflecting characteristics of the buyer, and (iii) the group of variables reflecting the characteristics of the seller. The detailed descriptions of these independent variables are presented as follows:

(1)Foreign is a dummy variable, where *Foreign* = 1 if buyer is a foreign company. This dummy variable is included in the model to determine an impact of the regulation on the limits of share ownership applied to foreign sides in a certain domestic company. These constraints can be act as an incentive for foreign buyer to decide to pay in cash as conducting M&A deals in Vietnam. [1]

(2)M&A_size is a variable that reveals the actual value of the M&A deal measured in million US dollars. It would be expected that the larger the scale of payment is, the less likely it is to pay in cash and vice versa. [1]

(3)Bidding is another dummy variable, where *Bidding* = 1 if the buyer is selected through a competitive

bidding section. The biding practice offers a number of advantages, with the greatest advantage of being able to explore the market to find potential buyers. In addition, a large number of buyers will help a certain auction become completely fair, and the seller is able to achieve the best deal. It is expected that the more competitive a certain bidding is, the higher a probability of choosing the payment in cash will be. [2] [3]

(4)*M&A_ratio* variable represents the percentage of equity in the target company of the buyer after conducting the M&A business. [1]

(5)*Revenue*: is the indicator to assess the current status of enterprises operating effectively or not (empirical variation)

(6)*Ebitda*: Profit before tax, interest and depreciation of the seller. This is an indicator of the company's rate of return and is a good indicator to assess the firm's viability (empirical variation).

(7)*Asset* is a variable that reflects total assets of the seller. [1]

(8)*M&A option* is a dummy variable which gain a value of one if a business is a merge, and zero if it is an acquisition. [2] [3]

Based on the theory of choice of payment method in M&A business, some independent variables are predicted in the research model. The expected signs for the relationship between independent variables and dependent variable showed in the equation (1) are summarized in Table 1.

Table 1.Description of independent variable

Variable	Value/ Unit	Expected sign
Foreign	1 = foreign company; 0 = domestic company	+
M&A_size	Million US dollars	+/-
Bidding	1 = biding; 0 = selecting	+
M&A_ratio	Percentage	+/-
Revenue/Turnover_ratio	Ratio	+/-
Ebitda	Million US dollars	+/-
Asset	Million US dollars	+/-
M&A_option	1 = M, 0 = A	+

3.2. Research data

This research runs a Probit regression with a set of data including detailed information of 364 M&A deals that were successfully made from 2014 to 2017 in Vietnam. They were collected from the M&A business reporting system of the State bank of Vietnam and following databases: Stoxplus; Zephyr; Datastream, the Securities and Exchange Commission's database, and the Ministry of Industry and Trade of Vietnam.

The dependent variable, based on the results obtained for the four years from 2014-2017 in 364 observations, was 337 cash transactions, 27 share swaps and 0 forms of mixed payment. Table 2 present statistics summary of all independent variables used in this study's research model.

Table 2. *Statistics summary*

Variable	Value/Unit	Min	Max	Mean
Foreign	{0,1}	0	1	0.604
M&A_size	million US dollars	0.004	299	7.794
Bidding	{0,1}	0	1	0.379
Revenue	Million US dollars	0.06	1084.94	7.895
Ebitda	million US dollars	0.02	1725.69	28.663

M&A_ratio	%	0	1	0.235
Asset	million US dollars	1	291	131.34

4. RESULTS

Initial results show no statistically significant effect on the initial model (1). After eliminating the variables from the initial model, the research has established equation (2) with high reliability with 6 independent variables.

$$M\&A_{payment} = \beta_0 + \beta_1 foreign + \beta_2 M\&A_{size} + \beta_3 Bidding + \beta_4 M\&A_{ratio} + \beta_5 Asset + \beta_6 M\&A_{option} + \varepsilon_1$$

(2)

The research result is illustrated in Table 4. It shows that the coefficients of all independent variables are statistically significant with p-values are smaller than 0.05. In addition, it can be seen that some variables affect significantly and are consistent with the expectations stated in the background section, especially two variables with highest level of influence are *foreign* and *M&A_ratio*, at 0.062 and 0.088 respectively. Furthermore, although the effect of *biding* variable is smaller than these two mentioned variables, it also gains a strong significance at 0.045. The impact on the change of dependent variable of remaining factors, *M&A_size* and *asset* are at 0.00002 and 0.00001 respectively.

Table 4. *Result*

Variables	Coefficient	dy/dx	z-value
Constant	-13.0008***	-0.1818	-3.525
Foreign	4.4458*	0.0622	2.417
M&A_size	0.0147*	0.00002	1.718
Bidding	3.2192**	0.045	2.886
M&A_ratio	6.2890***	0.088	3.315
Asset	0.0088*	0.00001	2.039

Observations: 364

Chi-square: 138.84

R^2: 0,5706

    *** $p < 0.01$

    ** $p < 0.05$

    * $p < 0.1$

To check that the data used in this study is unlikely to encounter a problem of autocorrelation between independent variables, it is necessary to make an autocorrelation test before running the Probit regression. The result of autocorrelation test is presented in Table 3, showing that all the correlation coefficients are smaller than 0.6, meaning that the multi-links between independent variables are definitely weak.

Table 3. *Correlation matrix of independent variables*

	Foreign	M&A_size	Bidding	M&A_ratio	Asset
Foreign	1				
M&A_size	-0,139	1			
Bidding	-0,258	0,032	1		
M&A_ratio	-0,080	0,208	0,012	1	
Asset	0,069	0,057	0,046	-0,317	1

6. CONCLUSION

According to the research outcome some implications about how the buyer and the seller chose an appropriate payment method as carrying a certain M&A deal in context of Vietnamese market can be drawn out as follows:

Firstly, there are there prime determinants that place the greatest influences on how the buyer and the seller reach a formal agreement on payment method (by cash or stocks) in the conditions of Vietnamese market, relating to the involvement of foreign company, M&A ratio and the approach of selecting the buyer. This study finds that if the buyer is a foreign firm that won the M&A deal through the competitive bidding and ended up having high level of share ownership of the target company, the probability of paying in cash will be significantly increased.

Secondly, the two relatively minor factors affecting the choice of M & A payment methods by financial institutions in Vietnam are the size of the deal and the total assets of the seller. This study finds that if the larger the business size or the total value of the seller's assets are, the higher the probability of using method of payment in cash is.

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AN EMPIRICAL STUDY ON IMPACT OF MONETARY POLICY ON VIETNAMESE STOCK MARKET'S LIQUIDITY

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ABSTRACT: *This study examines the effect of monetary policy on the liquidity of the Vietnamese stock market between November 2014 and November 2017 with a sample of 50 companies in the above period. Three liquidity measures including Amihud, Turnover and Zeros are used to measure the liquidity of the market. Two major variables of monetary policy and three liquidity measures are used in the VAR model. The results show that changes in the two main variables of monetary policy have a consistent effect on liquidity in the market. In particular, an increase in the M2 supply leads the rise of liquidity and an increase in interest rates reduces liquidity. Meanwhile, the rise of inflation reduces the liquidity of the market. Shock in the volatility of profitability reduces the liquidity of the stock market.*

Keywords: *Liquidity, monetary policy*

1. LITERATURE REVIEW

1.1. International researches

Liquidity at the market level is becoming more and more focused, especially the shocks to the market liquidity situation in the past two decades. Apparently, because of the importance of liquidity to the effectiveness of financial markets and the rise of the economy, regulators often have policy moves to influence liquidity (Chordiaa, et al., 2008). From that, they have looked at the factors affecting liquidity at the macro level such as inflation, growth and monetary policy.

Fernández-Amador, et al.(2011) conducted a study whose data is collected from three major markets of the euro zone including Germany, France and Italy. As a result, stocks will become more liquid if participants can use cheap funding and low risk. By contrast, stocks will be less liquid if participants have difficulty in approaching funding and cope with high risk. Since monetary policy affects capital and costs, it impacts on market liquidity. They also indicated that expanded monetary policy reduces the barriers to borrow, thus it increases the liquidity of capital inflows, which raises market liquidity.

In addition, Brunnermeier & Pedersen (2009), Goyenko & Ukhov (2009), Chordia, et al. (2005) found that monetary policy increased the liquidity of the market and the unexpected increase in interest rates of the Federal Reserve led to a decline in liquidity. Besides, Fujimoto (2003) studied the relationship between macroeconomic variables and liquidity for NYSE and AMEX stocks in the period ranging from 1965 to 1982. It indicated that an increase in the federal funds rate reduces liquidity of market. By contrast, a positive shock to non-borrowed reserves increases market's liquidity.

However, Woon Gyu & David (2006) who followed Pastor & Stambaugh (2003) 's measurement of United States equity market liquidity to measure stock market liquidity showed there is no influence from

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monetary policy to the liquidity of this market. On the other hand, liquidity has an impact on monetary policy and other macro variables.

1.2. Vietnamese researches

Previously, there were some authors reviewing liquidity at the market level in Vietnam. For example, Đức Minh (2010) studied some opinions on sustainable stock market development. Thanh Phong (2012) did research on impact of liquidity on profitability of listed shares on the Vietnam securities market. However, studying the effect of monetary policy variables on liquidity is not really focused.

The recent investigation of Hải Lý (2015) can be considered as the very first study focusing directly on the impact of monetary policy variables on liquidity in Vietnam stock market. . The author examines the effect of monetary policy variables on market liquidity from September 2007 to November 2014 with sample of 643 companies.

The results show that monetary policy has no impact on the market liquidity. Industrial output has a significant impact on market liquidity, as expected and consistent with market liquidity at all liquidity measures. Inflation also has an impact on liquidity and the effect is found to be statistically significant in three of the four liquidity measures. The rate of profitability has a strong and consistent effect on the market liquidity.

2. THEORITICAL BACKGROUND

2.1.1. Theoritical framework

2.1.1 Liquidity

Liquidity is generally a concept in finance. It is an abstract concept and refers only to the extent to which an asset can be bought or sold on the market without affecting the market value of the asset, which means that liquid assets incur relatively low costs of immediate execution of trading. However, in a simple and straightforward way, it is "the ease of trading" (Amihud, et al., 2005).

The stock market is considered as liquidity if it holds the conditions: always available bid and asked prices, the small difference between bid and asked prices, not very different price for an investor buying and selling a large amount of block, the larger block, the larger discount or premium (Black, 1971)

The components of liquidity include: the cost of finding a trading partner, the risk premiums left over due to trading delays, opposing counterparty risks, and imperfect market risks (Kyle, 1985)

There are also many liquidity measures that are commonly used, such as the sensitivity measure of prices (Amihud, 2002), market depth, frequency of yield dates equals zero (Lesmond, et al., 1999) and so on.

2.1.2 Monetary policy

Monetary policy consists of the actions of a central bank, currency board or other regulatory committee that determine the size and rate of growth of the money supply, which in turn affects interest rates.

Monetary policy is considered one of the first factors affecting the liquidity of the stock market. Stock markets are said to be more liquid if participants are able to access cheaper capital and find their risk is low. Since monetary policy affects both the cost of financing and the risk of holding, monetary policy affects the liquidity of the market. Many authors did research in different markets and showed results supporting that monetary policy has impact on liquidity. For instance, Goyenko & Ukhov (2009) showed that tightening monetary policy by positive shocks to the federal funds rate and negative shocks to non-borrowed reserves decreased stock market liquidity. Chordia, et al. (2005) also found that monetary policy increased the liquidity of the market and the unexpected increase in interest rates of the Federal Reserve led to a decline in liquidity.

However, Woon Gyu & David (2006) indicated results that are opposite with most of study. They showed there is no influence from monetary policy to the liquidity of this market.

2.1.3 Industrial output

Basically, industrial production is a measure of output of the industrial sector of the economy including manufacturing, mining, and utilities. The industrial production data is used in conjunction with various industry capacity estimates to calculate capacity utilization ratios for each line of business.

Related to this topic, Eisfeldt (2004) supposed that a high-yielding economy leads to higher risk assets investment. As such, rebalancing transactions are more frequent. Thereby, it reduces the risk of opposing options and improves liquidity. On an experimental perspective, some authors such as Woon Gyu & David (2006) or Fernández-Amador, et al. (2011) have also found a relationship between liquidity and macro variables including industrial output.

2.1.4. Inflation

Inflation rate is the constant increase in price of a particular basket of goods over time, This is result of rise of government's spending, which raises the supply of money without necessarily increasing output (Moynihan & Titley, 2000). According to Griffiths & Wall (2007), inflation rate is the change in the purchasing power of money. They suppose that the purchasing power of money will reduce when inflation rate rise.

Inflation is expected to adversely affect liquidity. Goyenko & Ukhov (2009) found the impact of CPI on stock liquidity. Increasing CPI reduces the liquidity of the market. Alrabadi (2012) found no evidence of inflation effects on price differences but increased depth and volume of transactions.

2.1.5. Rate of return

There are many studies and researches which have been done on the relationship between liquidity and stock returns. From a rational perspective, the authors argue that liquidity influences yield ratios through a large margin demanded by higher transaction costs (Amihud & Mendelson, 1986)

In their own study, Pastor & Stambaugh (2003) showed that the larger the expected price reversal, the lower the stock liquidity will be. Spiegel & Wang (2005) pointed out the negative association between liquidity and stock returns. Bakera & Stein (2004) developed an explanatory model for an increase in liquidity forecasts lower rate of return. Watanabe (2004) reported an improvement in liquidity when the market had a sharp increase in profitability. Rhee & Wang (2009) found that the effect of a relatively consistent return on liquidity.

However, some researcher showed the positive correlation between liquidity and stock returns which is actually opposite to other researches including Amihud & Mendelson (1986) and Faff & Chan (2005).

2.1.6. Volatility of rate of return

The volatility of the rate of return reflects the risk side that the liquidity provider in the market faces. Benston & Hagerman (1974) showed that volatility can affect liquidity. They are based on the argument that volatility increases the implicit risk premium and thus increases the bid and ask spreads. Copeland & Galai (1983) pointed out that the standard deviation of profitability plays an important role in changing the price difference. In contrast, Subrahmanyam (1994) argued that declining liquidity may increase price volatility.

In terms of empirical evidence, Chordia, et al. (2005) shows that a shock in the standard deviation increases the price difference. Kale & Loon (2011) found that the standard deviation of stock returns was positively correlated with illiquidity measures. Lesmond (2005) found that the volatility of return rates generally had a negative correlation with liquidity measures. However, Hearn & Piesse (2013) found that the volatility of return rates generally had a negative correlation with illiquidity measures.

2.2 Relationship among variables

The purpose of this study is to examine the correlations and effects of two monetary policy variables (money supply M2 and interest rates), macroeconomic variables (inflation and industrial output growth)

and market variables (rate of return and volatility) to the liquidity of the stock market. Based on a large number of studies on similar topics by previous authors, this paper will look at the correlation between monetary, market, macroeconomic variables and market liquidity in the table below:

	Liquidity	Supported investigation
Money supply M2	+	Goyenko & Ukhov (2009); Chordia, et al. (2005); Woon Gyu & David (2006)
Interbank interest rates	-	Eisfeldt (2004); Woon Gyu & David (2006); Fernández-Amador, et al. (2011)
Inflation rate	-	Goyenko & Ukhov (2009);Fernández-Amador, et al. (2011)
Industrial output growth	+	Goyenko & Ukhov (2009); Fernández-Amador, et al. (2011)
Rate of return	+	Amihud & Mendelson (1986); Faff & Chan (2005).
Volatility of rate of return	-	Rhee & Wang (2009); Kale & Loon (2011); Copeland & Galai (1983)

Table 1: Expected relationship between variables

3. DATA AND METHOD

3.1 Data description

Data used to calculate liquidity measures includes stock price, volume of outstanding stocks and transaction value; and collected from stockbiz.vn and finance.vietstock.vn website. The study employs a dataset of 50 stocks with 1,850 observations.

Data on macro variables are taken from various sources. The monthly money supply data was obtained from finance.vietstock.vn website. Data were collected from the website of the State Bank of Vietnam including 1 month interbank interest rate and inflation rate. Industrial output growth is obtained from the General Statistics Office of Vietnam.

The study period is from November 2014 to November 2017.

Table 2: Description of Data

Variable	Mean	Std. Dev.	Min	Max
Turnover	.0025019	.0006905	.001259	.0043247
Zeros	.1867527	.0473607	.1154286	.258
Amihud	496.6423	528.4891	45.50081	2303.291
Rate of return	.4557291	4.144851	-8.930951	7.946293
Volatility of Rate of return	2.219044	.306367	1.702122	2.950248
Inflation rate	.1913514	.3120645	-.53	.92
Indusrtrial ouput growth	177.9514	42.79307	107.6	263.6
VN interbank interest rate	7.494207	41.40219	-2.863219	252.3055
Money supply	1.366757	1.01969	-.77	4.13

We can see that the average monthly return on the stock market is .4557291. However, during the study period, there were months where losses occurred by -8.930951 and this was also the lowest return value. 7.946293 is the highest rate of return in this period. The large difference between the largest and the smallest of the market returns indicates that the market returns are quite volatile. This is also clearly demonstrated through its standard deviation of 4.144851.

The monthly average inflation of the market is .1913514. The small difference between the largest and smallest value of the market (about 1.45) indicates that inflation was relatively stable during the study period. This is also clearly demonstrated through its standard deviation of .3120645.

Industrial development is quite strong with an average of 177.9514. We can see continuous positive growth during the study period. The largest and smallest values are greater than 100.

3.2. Definition and measurement of variables

In this study, three following popular measures will be used to measure liquidity. There are so many authors also used these measures such as Marshall and et al. (2013), Fong and et al.(2014) and Fernández-Amador, et al. (2011)

Table 3: Measurement of Liquidity variable

STT	Variables	Measurement	Authors	Notes
1	**Turnover**	$10^5 \dfrac{|Rid|}{Vid}$	Datara, et al.(1998)	
2	**Amihud**	$\dfrac{Total\ transaction\ value\ in\ the\ month}{Average\ number\ of\ outstanding\ shares}$	Amihud (2002)	*R_{id} is the change in the price of the stock i in the day d. *Vid is the transaction value of stock i in the day d
3	**Zeros**	$\dfrac{Number\ of\ trading\ days\ with\ zero\ profitability\ in\ month\ t}{Total\ number\ of\ trading\ days\ in\ month\ t}$	Lesmond, et al. (1999)	

For daily metrics such as Turnover and Amihud, the author calculates the average value of days in the month for the monthly liquid data for each stock. Then calculating the average for all stocks of that month to get the market's liquidity that month. Zero is the monthly data so simply take the average zeros of the stocks to be zero of the market at that month.

This study uses M2 money supply growth and one-month interbank interest rates to represent monetary policy variables. Macro variables include inflation, market rate of return, industrial output growth and volatility of rate of return.

Table 4: Measurement of monetary policy and macro variables

STT	Variables	Measurement
1	Money supply growth	$\dfrac{Money\ supply\ M2\ month\ t\ -\ M2\ month\ money\ supply\ t-1}{Monthly\ M2\ money\ supply\ value\ t-1}$
2	One-month interbank interest rates	Taking the average value of the days in the month.
3	Inflation	Monthly CPI
4	Industrial output growth	Available
5	Market rate of return	Average monthly rate of return of all stock in the sample
6	Volatility rate of return	Average monthly standard deviation of the stocks in the sample

3.3. Econometric Method

From empirical studies and results, macroeconomic variables and liquidity dimensions have interplayed. Therefore, this study uses the system of vector autoregression model equations to examine the effects of these variables on the market level with monthly data. The VAR model in this study consists of 6 endogenous variables with the *p* delay expressed as matrices:

$$y_t = c + A_1 y_{t-1} + A_2 y_{t-2} + \ldots + A_p Y_{t-p} + u_t$$

In which, y_t is the vector of 6x1 endogenous variables, c is the vector of 6x1 constants, A_i is the coefficient of 6xp, and u_t is the vector of 6x1 residues. The *p* delay of each VAR model is determined separately.

The author uses different VAR models corresponding to three liquidity measures and two currency variables. The variables in the model are as follows:

Turnover Zeros Amihud R STD INF IIP VNIBOR M2_CHANGE

In turn, the Turnover, Zeros and Amihud are the liquidity measures, the IIP is the growth of industrial output, representing the growth of the economy, VNIBOR is the change in the average interbank interest rate one month. STD is the volatility of the stock market. R is the average return on the market.

3.4. Hypothesis construction

Monetary variables

Consensus with Brunnermeier & Pedersen (2009) theory on market liquidity will increase if market participants access financing more easily and inexpensively. With the empirical results of Goyenko & Ukhov (2009), Chordia, et al. (2005) and Fernández-Amador, et al. (2011), the hypothesis of monetary variables is as follows:

H1: the unexpected increase in money supply led to an increase in liquidity of the market

H2: the unexpected increase in interest rates reduces market liquidity

Macro variables

H3: Industrial output growth is used to measure the productivity of the economy. An increase in industrial output are expected to positively affect liquidity.

H4: Inflation is measured by changes in the monthly consumer price index. An increase in inflation are expected to affect the opposite direction on liquidity.

H5: Market return is calculated as the average monthly rate of return for all stocks in the sample. An increase in profitability are expected to affect the liquidity of the market in the same direction.

H6: Volatility is measured by the average monthly standard deviation of the stocks in the sample. The rise of the standard deviation are expected to reduce the market liquidity.

4. EMPIRICAL RESULTS

The stationary test results show that the variables of Turnover, Amihud, R, STD, INF, VNIBOR and M2_CHANGE whose P-value are less than 0.05 have stopped at the root level. Only the variables of Zeros and IIP whose p-values are more than 0.05 have not stopped at the root level yet. Therefore, the author proceeds to take first order difference of these non-pause sequence so that they become a stationary before entering the VAR estimation. Next, the author selects the optimal AIC based latency (Akaike Information Criterion). The optimal lag of this VAR model is 4. This means that, in the lag range of 1 to 4, the result is statistically the most significant. Therefore, the author will only focuses on the results in this lag range. The study will present the results from the VAR models described above.

4.1 Monetary policy and liquidity

In this section, the author presents the responses of liquidity measures to shocks from monetary policy. Monetary policy represents money supply and interbank interest rates a month. Figure 17 shows that an increase in money supply leads to a sharp decrease in turnovers at one-month lag. This effect continues at two-months lag and decreases to 0 at three-month lag. The rise of interest rates has no impact on Turnover

at a one-month lag. However, it increases Turnover at two-month lag, drops to 0 at three-month lag and reduces Turnover at four-month lag.

Figure 2 shows that an increase in money supply drastically reduces DZeros at one-month lag, continued to stay at two-month lag and diminishes at four-month lag. The rise of interest rates has no impact on DZeros at one-month lag. However, it increases DZeros at two-month lag, continues to increase at three-month lag and gradually decreases to 0 at four-month lag.

In Figure 3, the rise of money supply increases Amihud at one-month lag. However, it reduces Amihud at two-month lag, continues to stay at three-month lag and progresses to 0 at four-month lag. An increase in interest rates leads to a decrease in Amihud at the one-month lag. However, it increases Amihud at two-month lag and continues to rise and is statistically significant to a four-month lag.
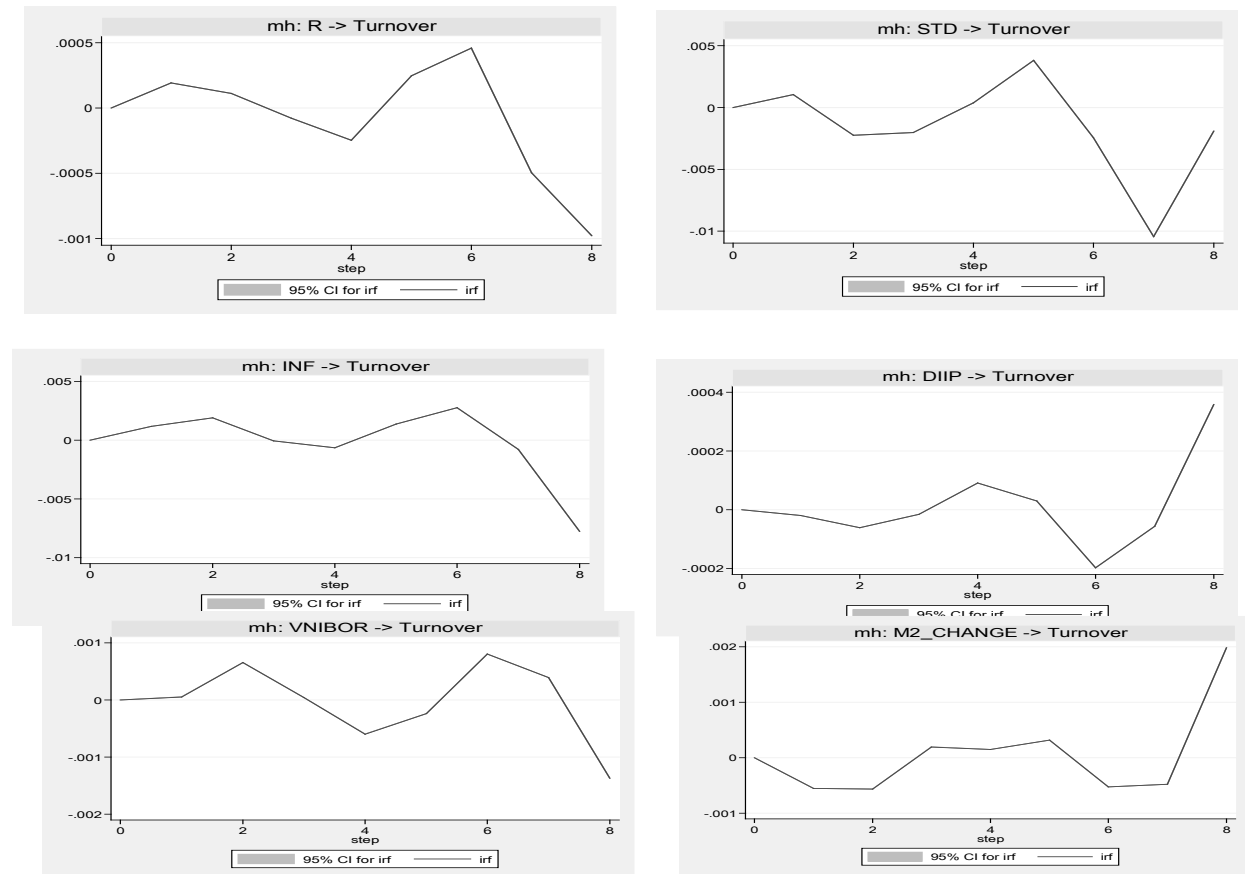
Figure 1: Turnover's impulse response

4.2 Macroeconomic variables and liquidity

Figure 1 shows that an increase in industrial productivity growth does not produce any significant response to Turnover at one to three-month lag. However, at the four-month lag, an increase in industrial output leads to an increase in Turnover. On the other hand, the rise of inflation triggers the same response to turnovers at one and two-month lags, but weakens at the later lags.

Results of impulse response of DZeros (Figure 2) shows that the rise of industrial output growth contributes to a decrease in DZeros one, two, three and four-month lag. An increase in inflation has no significant reaction to DZeros at one-month lag, but DZeros increases sharply at two-months lag and remains stable at three-month lag before weakening at a later lag.

Figure 3 shows the impulse response of Amihud. The rise of industrial output causes quite a strong reaction in Amihud. However, it is interesting to note that these reactions vary greatly in lags. An increase in industrial ouput increases Amihud at one-month lag, decrease Amihud at two-month lag, then raises Amihud at three-month lag and tapers later. An increase in inflation raises Amihud in most lags.
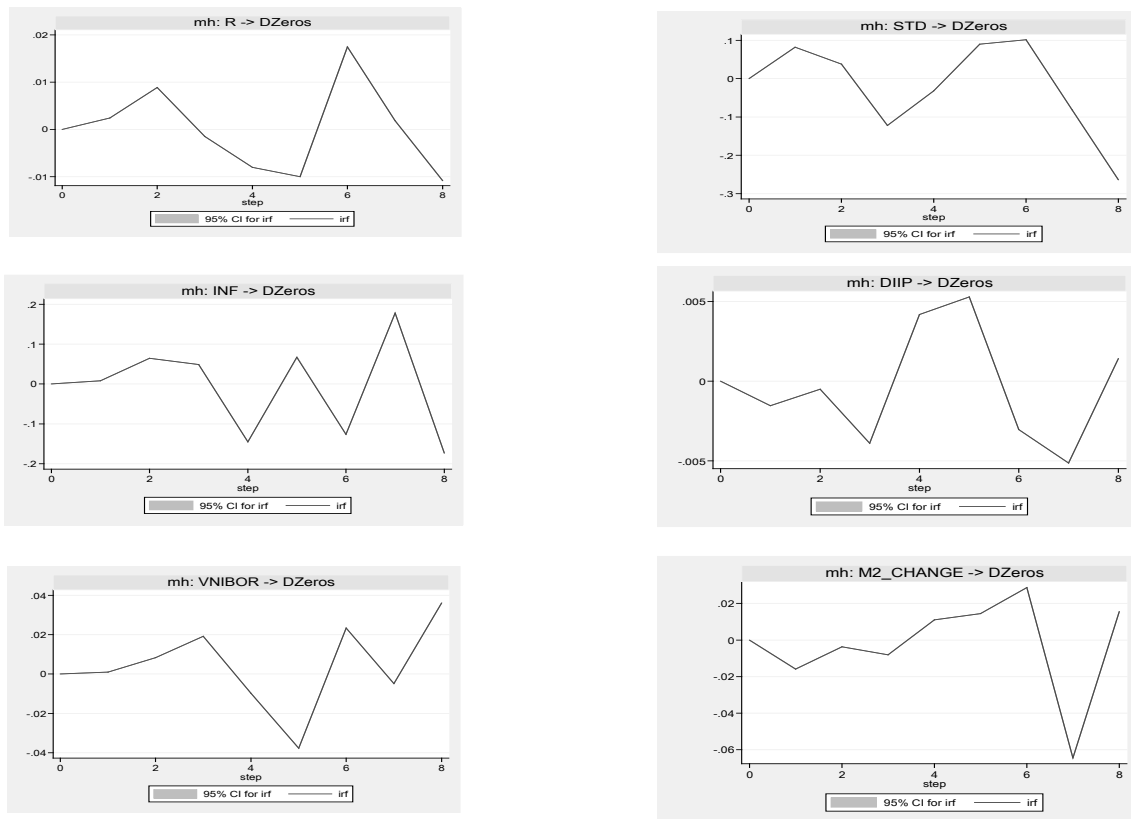
Figure 2: DZeros' impulse response

4.3 Market variables and liquidity

The impulse response function shows that the increase in profitability increases Turnover at one-month lag. This response continues to be stayed for two-month and three-month lag before increasingly decreasing at four-month lag. Meanwhile, profitability rate fluctuations have the effect on Turnover which matches expectation. Specifically, when there is a sharp increase in the rate of return of the stock market, the author sees a drop in Turnover. This response is most pronounced in two-month lag until four-month lag.

For the DZeros scale, the rise of the profitability ratio has almost no response at one-month lag. Next, it increases DZeros at two-month lag. However, this rise drastically reduces DZeros at three-month and four-month lag. An increase in the volatility of the rate of return makes Dzeros rise at one-month lag, continues to stay at two-month lag, and diminishes in later lags.

In the Amihud scale, the rise of the stock market return rate reduces Amihud at one-month lag, progresses to zero at two-month and three-month lag, and then drastically reduces Amihud at four-month lag later.
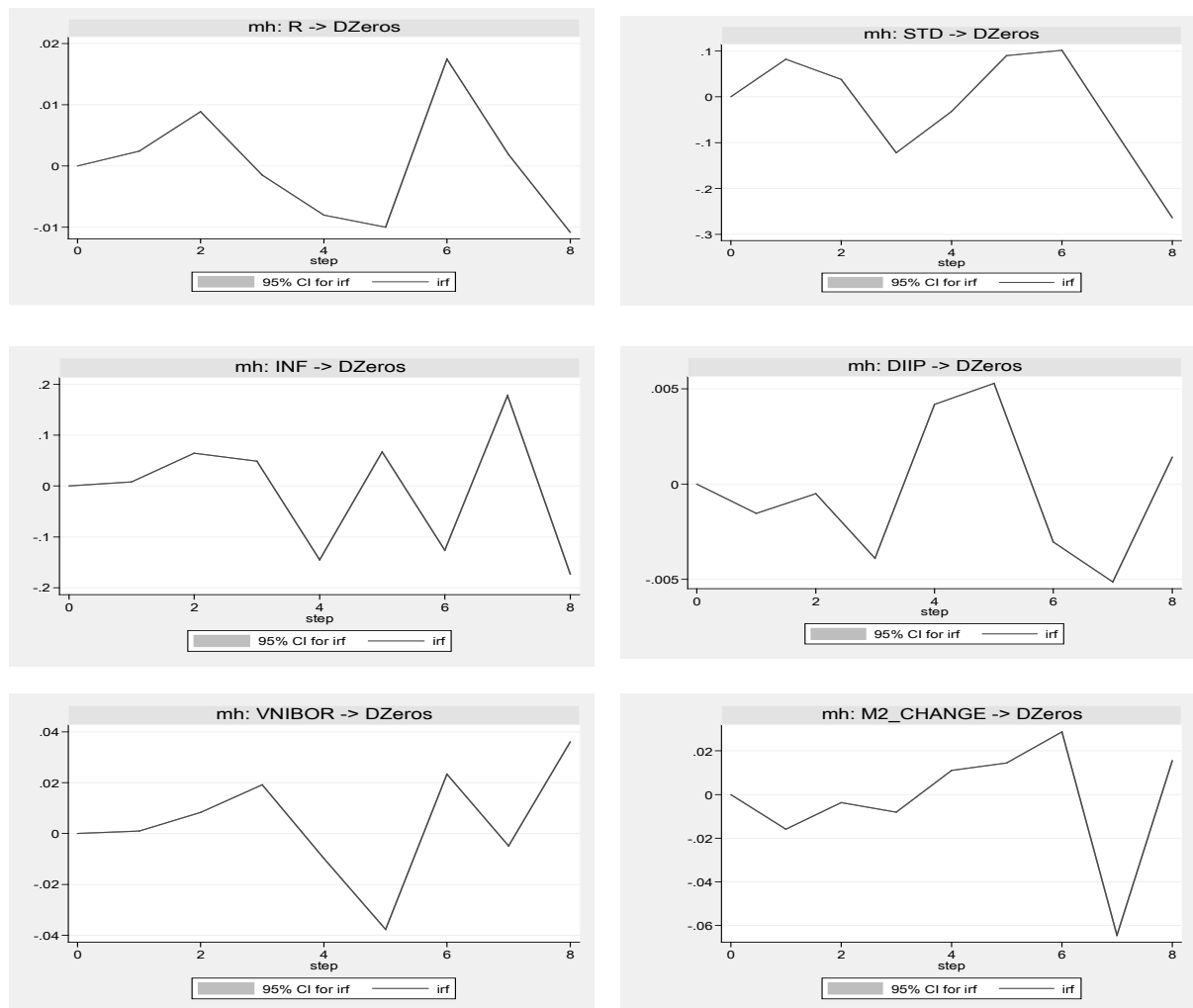
Figure 3: Amihud's impulse response

5. CONCLUSION AND RECOMMENDATION

The liquidity of the stock market has always been an interesting topic, especially the impact of monetary policy and macro variables on the liquidity of the stock market. Given the data on the prices listed on the Vietnam stock market together with the data of macro and monetary variables, the study on the effect of monetary policy on the market liquidity Vietnam stock market has been conducted. From the analysis of the above mentioned liquidity measures, this study draws some conclusions as follows.

The shocks that occur in the variables representing monetary policy have had a significant and correct impact on the liquidity of the Vietnamese stock market in two of the three liquidity measures. In particular, a positive shock in a change in money supply can increase the liquidity of the stock market and vice versa. Meanwhile, the rise in interest rates reduces the liquidity of the market and vice versa. This result is considered consistent with most studies of many previous authors in the world such as Goyenko & Ukhov (2009), Chordia, et al. (2005) and Fernández-Amador, et al. (2011). Therefore, the expectation of adjustments and changes in monetary policy to improve the liquidity of the stock market in Vietnam is quite real.

The information outside the expected inflation also has an impact on market liquidity. This effect was found to be significant in two of the three liquidity measures. The rise of inflation reduces the liquidity of the market and vice versa. This result is similar to conclusion of some authors such as Goyenko & Ukhov

(2009) or Fernández-Amador, et al.(2011). This suggests that curbing inflation is an important condition for maintaining liquidity in the stock market.

Shocks in volatility of profitability affect two liquidity measures. This result is quite consistent with each other and is consistent with initial expectations and other authors including Rhee & Wang (2009), Kale & Loon (2011) and Copeland & Galai (1983). Shocks in the volatility of profitability reduce the liquidity of the stock market and vice versa.

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THE IMPACT OF SOVEREIGN SPLIT RATINGS BETWEEN GLOBAL CREDIT RATING AGENCIES ON FOREIGN EXCHANGE MARKET

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ABSTRACT: *The behaviour of foreign exchange market in reaction to split sovereign ratings, which is hardly mentioned on recent studies, is a topic of concern, especially in the post-crisis period. We analyse difference of opinion in sovereign credit ratings and their influence on currency market. The first question relates to the response of exchange rates to sovereign credit rating changes. Both negative and positive rating announcements have impacts on the market though the influence of the former events are much more significant than the later ones. The second question investigates how split sovereign ratings affect the information content of subsequent sovereign rating events for global foreign exchange market. The behaviours of spot exchange rate are concerned. The findings reveal that exchange rate spreads are significantly responsive to S&P negative events with lower pre-event ratings than either Moody's and Fitch, while only Moody's positive events with prior split ratings versus S&P significantly influence the foreign exchange rates. Also, Fitch actions play as a "tie-breaker" in currency market, hence split ratings involved Fitch significantly reduce the market uncertainty and volatility. Additionally, exchange rate volatility is only responsive to S&P rating announcements with pre-event split ratings. Also, Fitch actions play as a "tie-breaker" in currency market, hence split ratings involved Fitch significantly reduce the market uncertainty and volatility.*

***Keywords:** Credit rating, foreign exchange market, sovereign rating*

1. INTRODUCTION

The 2007-2009 global financial crisis and the following European sovereign debt crisis has put credit rating agencies (CRAs) on spotlight of public attention. As the economic uncertainty has raised a huge demand for sovereign credit ratings, the crisis and post-crisis period witnessed more actions of sovereign credit rating compared with pre-crisis period (Böninghausen and Zabel, 2015). Also, during the Euro debt crisis, downgrade actions from CRAs are criticized to exacerbate the severity of the crisis (Alsakka and ap Gwilym, 2013).

These facts raise a question about the market impact of credit rating announcements, particularly the market response following sovereign rating changes, given their decisive role in credit rating market and the stability of global financial market (ESMA, 2013). The influences of sovereign ratings on bank and corporate ratings are analysed by Williams et al. (2013), and Borensztein et al. (2013) respectively. Prior studies also reveal empirical evidences of sovereign credit signals exerting significant impact on bond market, equity market and CDS market (e.g. Gande and Parsley, 2005; Ferreira and Gama, 2007; Hill and Faff, 2010; Alsakka et al., 2017).

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During the two crises, the behaviour of currency market in reaction to news is also a topic of debate. The foreign exchange rate is considered to be highly sensitive to news, therefore experiences unexpected volatility during crisis time (Evans and Lyons, 2015). Accordingly, the value of the US dollar during the global financial crisis - which is driven by negative news related to the US economy - has strong impact on global currency market (Fratzscher, 2009).

Most governments and corporates consult multiple rating assigned by at least two leading CRAs, in order to enhance their ranking in the market. This creates the phenomenon of split rating which is disagreement on rating opinions of two CRAs for the same issuers at the same time. However, prior empirical studies remain silent on the influence of split ratings on spot foreign exchange market – the largest and most liquid financial market in the world (BIS, 2013). These issues are addressed in this paper. The study analyses the sovereign credit actions including rating changes, outlook and watch signals from the big three global CRAs: Moody's, S&P, and Fitch. The study reveals the impact of rating actions on global foreign exchange market varies across CRAs. By using event study and fixed effect modelling approach, the investigation focuses on the effect of pre- event split rating on foreign exchange rates and volatility.

The first research question considers the response of foreign exchange market to sovereign credit rating announcements. Accordingly, negative rating events are found to exert stronger impact on exchange rates than positive events. The findings support prior literature that negative actions are more informative to financial markets, therefore generate stronger market reaction than positive ones. It is also revealed that the most significant dynamic of the foreign exchange rate is recorded after negative events from S&P, and positive events by Moody. This is in line with Alsakka and ap Gwilym's (2010) suggestion that S&P tends to be the "first mover" in downgrade actions, whereas Moody's positive actions likely lead the reaction of the market.

Arising from the first baseline question in the perspective of split ratings, the second question addresses the issue of whether split ratings contain valuable information, whereby they influence the impact of subsequent rating events on foreign exchange market. The pre-event inferior rating of S&P than Moody's and Fitch is found to substantially affect the information content of S&P negative actions. Also, the market impact of Moody's positive events is significantly affected by Moody's prior rating which is superior than S&P action. The study reveals indicative evidences that split rating across CRAs is informative and affects the response of exchange rate volatility to following rating events. The magnitude of the effect depends on the level of market's uncertainty after rating events. The more the event is predicted, the stronger the influence of pre-event split rating is.

2. LITERATURE REVIEW

2.1. Sovereign credit ratings and market impacts

Sovereign ratings are the credit ratings for sovereign issuers. It reflects the long-term default risk of a sovereign. In other words, it measures the ability and the willingness to make payments of a government. According to SEC (2016), credit ratings for government securities accounted for 80.95%, 81.13% and 72.06% of total ratings of Moody's, S&P and Fitch, respectively.

Prior studies for emerging countries show that sovereign credit signals can affect the international bank flow into stock and bond markets (Kim and Wu, 2011). Also, sovereign credit ratings are able to attract attention of foreign investors and help the emerging governments to present financial transparency, whereby sovereign ratings make ways for private sectors to enter global capital market (Alsakka and ap Gwilym, 2009).

In addition, sovereign credit ratings impose 'ceiling effect' in the credit rating industry. It act as an upper bound and a determinant of credit rating for corporates and banks (Borensztein et al., 2013, Almeida et al., 2017). Tran et al. (2014) show that CRAs have downgraded numbers of European banks during years from 2011 to 2013, which is explained directly from the descent in the Europe governments' financial capacities.

In terms of empirical studies, the research attention is brought to the linkage between sovereign rating events and the pricing of debt instrument such as derivatives (Afonso et al., 2012), spot foreign exchange rate (Alsakka and ap Gwilym, 2012b) and stock index option (Tran et al., 2014. Prior literatures distinguish between negative and positive rating signals. Following that, the former signals have significant impact on stock and bond markets, while the market impact of the latter one is negligible. For instance, Brooks et al. (2004) show that the stock market indices are only responsive to sovereign rating downgrades while there is no evidence about abnormal returns triggered by upgrade events. The asymmetric effect of these signals is thought to be due to stronger negative reputational impacts for a CRA which gives a later downgrade announcement compared with other CRAs (Alsakka and ap Gwilym, 2010). In fact, debt issuers are more likely to publish positive news prior to an upgrade rather than showing a potential downgrade by leaking negative information to the market, therefore the negative credit announcements become more informative than the positive news (Ganda and Parcel, 2005).

Furthermore, the cross-border transmission effect, that is, a sovereign rating change in one country significantly influences sovereign credit spreads of other countries, is found by Gande and Parsley (2005), and Ferreira and Gama (2007). The cross-country spill-over effect whch is only triggered by negative rating event (but not positive new) is confirmed to be asymmetric (Gande and Parsley, 2005)

2.2. Split ratings and market impacts

Split rating denotes the situation when a specific sovereign is assigned different ratings by CRAs. In case of split rating, the rating of a CRA can be either higher or lower than others. Livingston et al. (2010) use 'superior' and 'inferior' to refer this comparison.

As far as the market impact of corporate split ratings is concerned, Livingston et al. (2010) indicates that, to price the corporate credit risk, the CRA's rating are separately considered but the opinion of the more conservative CRA (Moody) is more heavily weighted. Bongaerts et al. (2012) show that, in case where corporate issuers have divergence in credit opinions between S&P and Moody's, the third rating from Fitch is found as a 'tie-breaker' of split ratings. In addition, split rated bonds with higher level of risk are more expensive than the non-split rated bonds. Santos (2006) shows that split ratings significantly affect bond yields and the effect is dependent with general economy's condition and the credit quality of issuers. Particularly in adverse economic environment, issuers with average credit quality may incur additional cost which increase the bond's price. Also, in case of split ratings caused by information opacity in the corporate bond market, Fitch ratings add information which is valued and priced by both investors and issuing firms (Livingston et al., 2016).

In terms of sovereign split ratings, Vu et al. (2015) find empirical evidences about the strong impact of split sovereign rating on bond spreads. The study separates split rating event into 2 groups which is (i) positive (negative) events on the superior ratings (inferior ratings) and (ii) positive (negative) events on the inferior ratings (superior rating). It is suggested that the former types of events convey information which is more valuable to the market participants than the latter types of event, therefore have stronger impact on

bond market. Generally explaining for the effect of split sovereign ratings on bond spread, Vu et al. (2015) suggests that split ratings which widen following a downgrade event on inferior ratings are associated with an increase in uncertainty about sovereign default risk, then the market reacts to inconsistent information as a result. This suggestion is consistent with a viewpoint of investors' behaviour under uncertain- quality news and ambiguity aversion in Epstein and Schneider (2008). It is shown that when market information is put in uncertainty, investors acts as if they take a worst-case earnings forecast returns, hence bad news often induce stronger investors' reactions than good news.

2.3. Empirical evidences for an existence of credit rating event's impacts on spot foreign exchange market

Alsakka and ap Gwilym (2012b) analyse the response of foreign exchange spot market to sovereign credit signals during 1994- 2010. Focusing on emerging countries, they indicate the different reaction to sovereign credit signal of foreign exchange market compared with stock and bond markets. Significant responses of exchange rate to upgrade announcements and positive watch signals is found in emerging exchange markets, while all other empirical studies find little evidence about the response of bond and stock markets to upgrades (e.g. Sy, 2002; Ferreira and Gama, 2007). Furthermore, the strongest reactions of the foreign exchange market are in response to Fitch ratings. This opposes with Brooks et al. (2004) suggestion that S&P actions give greatest influences over stock market, while the effect of Fitch ratings is minimal. The asymmetric influence of CRAs to spot foreign exchange market (particularly to developed markets) are affirmed by Alsakka and ap Gwilym (2013). It is also indicated that the magnitudes of effects during crisis period are far stronger compared to pre-crisis time.

Furthermore, sovereign creditworthiness is a strong explanatory variable for foreign exchange volatility (Bisoondoyal-Bheenick et al., 2011). Tran et al. (2014) offers new insights by estimating the impact of multiple sovereign ratings on market volatility including the movement of spot foreign exchange market and forward exchange market. Accordingly, sovereign rating news have a statistically significant impact on the market volatility, and additional rating signals are able to help reduce the market uncertainty.

About the economic rationale of sovereign rating impact on foreign exchange market, Tran et al. (2014) suggest that, the casual linkages between sovereign credit ratings, the fiscal indices of a country and its exchange rate is the main rationale for sovereign rating to have impact on a country's foreign exchange market. Despite using different method to rate the creditworthiness of a government, CRAs generally determine their sovereign rating based on a country's fiscal condition (Moody's, 2016; S&P, 2016). Taking S&P for example, there are five main criteria considered to determine a sovereign credit rating, which are political, external, economic, monetary and fiscal factors. In another words, changes in a country's economic condition are associated directly with its rating level assigned by CRAs (Bennell et al., 2006; Afonso et al., 2011). On the other hands, the sovereign rating level is considered to influence back to fiscal indices of a country. For example, empirical studies emphasize that sovereign ratings are an important factor explaining the change of sovereign bond yields which are benchmarks to a country's market risk (Kaminsky and Schmukler, 2002).

In addition, theoretical models predict a positive relationship between a fiscal expansion and the real exchange rate (Erceg et al., 2005). Particularly, a government budget in balance is expected to appreciate the real exchange rate. Empirical studies also take the economic linkage between exchange rate and fiscal health of a country into consideration. As opposed to other theoretical models, Kim and Roubini (2008)

empirically evidence that a fiscal policy shock, or a national budget deficit shock in the USA can appreciate the US dollar, hence depreciating the real exchange rate. In general, based on the given economic interaction between sovereign credit rating, fiscal conditions and exchange rate, the study aims to find out a strong impact of sovereign rating signals on the foreign exchange market.

3. DATA SAMPLE

The chosen dataset is an unbalanced data panel of 52 countries with a period ranging from January 2008 to July 2017. The disagreement in sovereign rating opinion of three world leading CRAs (Moody's, Standard and Poor's and Fitch) is examined.

There are 2 numerical rating scales which are (i) 18-notch rating scale which only considers changes in rating levels (ii) 52-point comprehensive credit rating scale (CRR) that counts outlook and watch in addition to actual rating. Following CCR scale, rating symbols are transformed into number as from 1 to 52. Then, 1 and 2 are added as adjustment for positive outlook and watch status respectively. In contrast, for negative outlook and watch announcement, the actual rating point is substracted 1 and 2 respectively. Accordingly, for every solo downgrade or upgrade, the CCR is adjusted by 3 points, whereas, combined events of rating changes and outlook (watch) signals might cause a change of 4 to 5 units in CCR point.

Generally, negative events and positives events are respectively attributed to the decreases and increases in the CCR measured using the 52-point rating scale. There are 4 different types of events. The first type including solo downgrades and upgrades reveal the changes of ratings expressed by number of notches only. The next two types are the solo events of outlook and watch without any changes in rating level. Negative (positive) outlook signals covers the cases of (i) a sovereign's outlook changes from stable to negative (positive) and (ii) a sovereign's outlook changes from positive (negative) to stable. Negative (positive) watch signals arise from (i) cases when a sovereign is under a review for possible downgrade (upgrade), and (ii) the action of confirming rating of a sovereign which is on watch for potential downgrade (upgrade). The forth type is combined events of downgrades (upgrades) with outlooks or watch signals.

Table 1. Summary of the sovereign rating data sample

		January 2008 - July 2017			
		Moody's	Fitch	S&P	Total
1	Solo rating downgrades	21	29	32	82
2	Solo negative watch signals	27	16	37	80
3	Solo negative outlook signals	40	52	57	149
4	Combined events of rating downgrades and watch	8	5	12	25
5	Combined events of rating downgrades and outlook	45	45	54	144
6	**Negative events**	**141**	**147**	**192**	**480**
7	Solo rating upgrades	39	45	54	138
8	Solo positive watch signals	7	4	1	12
9	Solo positive outlook signals	50	47	69	166
10	Combined events of rating upgrades and outlook	10	5	9	24
11	Combined events of rating upgrades and watch	1	0	0	1
12	Negative watch to negative outlook signal	5	3	11	19
13	**Positive events**	**112**	**104**	**144**	**360**
14	**Total credit events (rows 6 + 13)**	**253**	**251**	**336**	**840**
15	**All rating downgrades (rows 1 + 4 + 5)**	**74**	**79**	**98**	**251**
16	– of which by >1-notch (% row 15)	37.84%	27.85%	20.41%	

17	**All rating upgrades (rows 7 + 10 + 11)**	**50**	**50**	**63**	**163**
18	– of which by >1-notch (% row 17)	6%	14%	9.52%	
19	1-point negative action	55	64	82	201
20	2-point negative action	35	28	49	112
21	3-point negative action	14	27	37	78
22	>3-point negative action	37	28	24	89
23	**Negative actions using 52-point scale**	**141**	**147**	**192**	**480**
24	1-point positive action	61	51	81	193
25	2-point positive action	31	19	28	78
26	>2-point positive action	20	34	35	89
27	**Positive actions using 52-point scale**	**112**	**104**	**144**	**360**

Notes: This table presents summary statistics for the sovereign credit ratings data, which assigned by three CRAs. The sample consists of daily long-term foreign-currency sovereign rating, outlook and watch signals for 52 countries rated by each CRA. The period is from January 2008 to July 2017.

Table 2. Agreement/ disagreement on the 52 sovereign ratings.

	January 2008 - July 2017		
	S&P and Moody's	**S&P and Fitch**	**Moody's and Fitch**
Panel I –18-notch rating scale			
Daily observation	130000	130000	130000
Split % of whole sample	49.59%	46.85%	44.86%
Higher rating from first CRA; % of split	34.98%	44.74%	59.56%
1-notch higher rating from first CRA	18130	25456	27680
> 1-notch higher rating from first CRA	4424	1796	7052
1-notch lower rating from first CRA	32354	28377	18304
> 1-notch lower rating from first CRA	9565	5281	5277
Pane II – 52-point rating scale			
Daily observation	130000	130000	130000
Split % of whole sample	64%	59.61%	59.75%
Higher rating from first CRA; % of split	33.83%	43.81%	59.27%
1-point higher rating from first CRA	6246	6898	8994
2-point higher rating from first CRA	7983	5542	8184
3-point higher rating from first CRA	8688	17227	17389
4-point higher rating from first CRA	811	2542	4009
5-point higher rating from first CRA	680	733	1603
> 5-point higher rating from first CRA	3745	1007	5848
1-point lower rating from first CRA	13289	10399	8259
2-point lower rating from first CRA	7171	5185	6589
3-point lower rating from first CRA	21207	19587	9525
4-point lower rating from first CRA	4175	3584	1953
5-point lower rating from first CRA	1232	1218	1174
> 5-point lower rating from first CRA	7976	3576	4144

Notes: This table presents agreement and disagreement across three CRAs on 52 sovereign ratings using the 18–notch rating scale in Panel I and the 52-point rating scale in Panel II. The period is from January 2008 to July 2017

As can be seen in Table 1, there are more negative events (480 events) than positive events (360 events) issued by three CRAs throughout the sample period. S&P is also the most active CRAs with 336 events. Besides, Moody takes stronger actions than other CRAs in terms of downgrades, when 37.84% of rating downgrades assigned by Moody's is multiple-notch adjustments. Besides, multiple-notch downgrades occur more frequently than multiple-notch upgrades by all three of CRAs. For example, in Fitch, 27.85% of all rating downgrades is multiple-notch change, whereas the figure for multiple-notch upgrade is 14%.

Credit actions based on the 52-point scale are summarized in Row 19-27 of Table 1. As can be observed that, the majority of the action are 1-point change with 201 out of 480 negative actions (41.87%) and 193 out of 360 actions (53.61%).

Table 2 reports split ratings between CRAs. There are 130,000 daily observation for each CRAs. It can be seen from Row 2 of the Table 3.2 that split ratings occur frequently across CRAs. According to 18-notch rating scale, 49.59% (46.85%) of daily observation show the divergence in credit opinions between S&P and Moody's (Fitch), and the percentage of split ratings between Moody's and Fitch is 44.86%. As outlook and watch status are taken into consideration, using the 52-point rating scale reveals more rating disagreements across CRAs. The split rating between S&P and Moody's accounts for 64% of the whole sample. The average rating difference between two CRAs in each group is approximately 3 CCR units, which is equivalent to one notch difference on the 18-notch rating scale. The rating differences vary from one CCR unit to 18 CCR units (6 notches).

Table 2 shows that S&P appears to assign more inferior ratings than superior ratings compared with either Moody's or Fitch, therefore the S&P negative signals are expected to be more informative to the foreign exchange rate than the other two CRAs. Moody's is likely to assign higher ratings than the other CRAs and the number of positive ratings assigned by Moody's is highest of the three CRAs, therefore positive signals from Moody's are expected to trigger stronger impact on the foreign exchange rate than positive rating from S&P and Fitch.

The dataset of daily exchange rates comprises 52 currencies which are named in BIS (2016). Due to the dominance of US dollars which accounts for 88% of foreign exchange market's turnover (BIS, 2016), all the exchange rates is based on the US dollars. Daily data of exchange rate and exchange rate volatility are obtained from Data Stream (the primary source is Thomson Reuters).

The exchange rates are denoted with direct quotation which refers to domestic currency units per one US dollar. Also, the study use the natural logarithms of the exchange rates, following prior studies. The exchange rate per US dollar is measured over short window to control for the effect of event clustering (Gande and Parsley, 2005), and the exchange rate return is calculated in [-1,+1] window as follows:

$\Delta \mathbf{EXt} = 1000 \times (\text{Ln (Exchange rate)}_{t+1} - \text{Ln (Exchange rate)}_{t-1})$

The study also uses 1-month maturity volatility to capture the volatility of foreign exchange market. The return of exchange rate volatility is estimated as follows:

$\Delta \mathbf{EVt} = 1000 \times (\text{Ln (Exchange rate volatility)}_{t+1} - \text{Ln (Exchange rate volatility)}_{t-1})$

4. METHODOLOGY

To examine the behaviour of spot foreign exchange market in response to sovereign credit events with pre-event rating differences, the study employ a multivariate regression model framework, and a baseline regression model is constructed as follows:

$$\Delta \mathbf{EX}_{i,s} = \alpha + \beta \Delta \mathbf{CCRit} + \gamma_2 * \mathbf{CCRit\text{-}1} + \gamma_3 * \mathbf{PRIOREVENTSit} + \gamma_4 * \mathbf{VIXit} + \theta * \mathbf{y}_t + \mu * \mathbf{country}_i + \varepsilon_{it} \qquad (1)$$

$$\Delta EV_{i,s} = \alpha + \beta \Delta CCR_{it} + \gamma_2 * CCR_{it-1} + \gamma_3 * PRIOREVENTS_{it} + \gamma_4 * VIX_{it} + \theta * y_t + \mu * country_i + \varepsilon_{it} \quad (2)$$

The baseline Eq. (1) with the dependent variable is $\Delta EX_{i,s}$ measures the impact of sovereign credit rating change on the movement of exchange rate ($\Delta EX_{i,s}$), while the Eq.(2) caculates the effect on exchange rate volatility (σR_t).

$\Delta EX_{i,s}$ is the daily return of exchange rate of sovereign i around the event date t, in the [-1,+1] time windows where date -1 is the previous working day of the event date, and date +1 is the next working day of the event date. The exchange rate are denoted with direct quotation, hence the increase in $\Delta EX_{i,s}$ represents a depreciation of the domestic currency against US dollar.

$\Delta EV_{i,s}$ is the log-change in the interest rate volatility of sovereign i in [-1,1] time window

ΔCCR_{it} is the change of the sovereign ratings of country i at time t based on 52-point rating scale.

Slope β illustrates the movement of the exchange rate in response to one point change in CCR.

CCR_{it-1} is the comprehensive credit rating assigned to sovereign i before the day of credit event (day t). It is used as a control variable which refers to economic, political and market conditions of sovereign i.

$PRIOREVENTS_{it}$ is the cumulative change of CCR in one month prior to day t (30 days before a certain credit rating event). This is used as a variable controlling the event clustering. A high probability of upgrade is indicated through net positive changes of CCR in 30 days before even date, whereas net negative changes of CCR refer a downgrade trend. PRIOREVENTSit is equal to zero in case where events is not classified as downgrade or upgrade within one month horizon.

VIX_{it}: is a proxy of global risk aversion. It is defined as the contemporary logarithmic changes within the window of [0, +1] where date 0 is the event date and date +1 is the next trading day.

Finally, the model use year dummy variable y_t for the fixed-effect of time trends, and country dummy variable $country_{i,t}$ for the fixed-effect of countries.

The baseline models are applied in turn to negative events and positive events by each CRA. The models generally estimate whether the foreign exchange market is responsive to sovereign credit rating events, and whether the effect is heterogeneous across CRAs. This model does not account for the pre-event differences between ratings of CRAs. As been suggested in prior literatures, a pre-event split rating between CRAs is influential in the magnitude of how a rating change impact markets on the event date. The pre-event rating which is different from the rating of another CRA (second rating) can be inferior (lower) rating or superior (higher) rating than the second rating. To examine the effect of pre-event ratings on the market impact of rating events by three CRAs, the study estimates a 'differential model' as follows:

$$\Delta EX_{i,s} = \alpha + \beta_1 * \Delta CCR_{it} * SUP_{it} + \beta_2 * \Delta CCR_{it} * INF_{it} + \gamma_2 * CCR_{it-1} + \gamma_3 * PRIOREVENTS_{it} + \gamma_4 * VIX_{it} + \theta * y_t + \mu * country_i + \varepsilon_{it} \quad (3)$$

$$\Delta EV_{i,s} = \alpha + \beta_1 * \Delta CCR_{it} * SUP_{it} + \beta_2 * \Delta CCR_{it} * INF_{it} + \gamma_2 * CCR_{it-1} + \gamma_3 * PRIOREVENTS_{it} + \gamma_4 * VIX_{it} + \theta * y_t + \mu * country_i + \varepsilon_{it} \quad \mathbf{(4)}$$

Equation (3) measures the movement of spot exchange rate following split rating across CRAs, while the Equation (4) estimates the behaviour of exchange rate volatility. The rating change variable (ΔCCR_{it}) interacted with two dummy variables namely SUP_{it} and INF_{it} which respectively reflect superior rating (higher rating) and inferior rating (lower rating) compared with another CRA. SUP_{it} is equal to one (INF_{it} is equal to zero) if the CRA assigned a higher pre-event rating than another CRA, and if the CRA assigned an inferior rating before event date, the value of SUP_{it} is zero (INF_{it} is one). The variable CCR_{it} is defined as the average of ratings of two CRAs whose pre-event ratings are different.

Following prior literatures (Ferreira and Gama, 2007; Vu et al., 2015), non-event data is added in the sample. These data point is randomly collected during the horizon sample to match with event date. The 61-day window is employed to choose non-event days which are not preceded (followed) by a rating event within 30 days before (after) that non-event day. The number of non-event dates is equal to the event dates, whereby the number of observations is double.

5. EMPIRICAL RESULTS

5.1. The baseline model

The empirical results for Eq. (1) are summarized in Table 3. At 1% significance level, exchange rates are responsive to S&P negative signals, while Moody's negative signals explain the exchange rate movement at the significance level of 5%. As been shown in the data description, S&P tends to rate lower than Moody's and Fitch, therefore the result is consistent with Livingston et al. (2010) suggestion that the market perception of sovereign risk is driven by the most conservative CRA. Also, Fitch signals have insignificant impact on foreign exchange, which consistent with prior researches (e.g. Vu et al., 2015).

In terms of positive signals, only positive news assigned by Moody significantly induces market reactions. This is consistent with the result of Alsakka and ap Gwilym (2012b) that foreign exchange market significantly react to positive credit signals, while prior studies find little evidence about the response of bonds and stock market to upgrade signals (Gande and Parsley, 2005; Ferreira and Gama, 2007).

Table 4 represents the empirical result of Eq (2). It is noteworthy that exchange rate volatility is highly sensitive to negative credit events from CRAs. The consistent signs of coefficient estimates of S&P's and Moody's negative events is different from the results of Tran et al. (2014) that Moody's rating news tend to reduce the foreign exchange, as opposed to S&P. Tran et al. (2014) suggest that Moody's actions might serve as the confirmation of the market expect, therefore these signals are likely to reduce the market uncertainty. However, during crisis period when credit signals might not be predicted by the market, the "additional information" role of Moody's downgrade is mitigated, hence the market's volatility increase in reaction to either S&P and Moody's negative signals. Also, there is no evidence that positive announcements could significantly explain the dynamics of foreign exchange market. The result supports the prediction of the asymmetric market reaction to negative and positive events. Negative events associated with high level of sovereign risk might affect investor's sentiment and raise the market's uncertainty, as a result. Meanwhile, positive events is likely to convey less information than negative events hence insignificantly influence the market's dynamics.

5.2. Split rating effect

The results of Eq. (3) and Eq. (4) which compare the market effect of superior ratings and inferior rating on split rated sovereigns are presented from Table 5 to Table 10.

On the one hand, the model of S&P negative events assigned for sovereigns which are unequally rated by Moody's is in line with my prediction that exchange rate movement is more responsive to negative events on inferior ratings than those on superior rating. Table 5 illustrates that at 5% significance level, the market impact of S&P negative events are driven by pre-event disagreements between S&P and Moody (Fitch). Accordingly, the exchange rate immediately increases by 0.08% after 1- point CCR downgrade on inferior S&P rating (versus Moody's). Also, the pre-event split ratings between S&P and Fitch significantly explain the movement of exchange rate in response to S&P negative signals. However, the impact of pre-

event split rating between S&P and Fitch is stronger compared with the split pair of S&P and Moody's. To some extent, the market impact of split rating which have Fitch rating involved is unexpected. One justification might be that Fitch ratings play as additional information in case where market is disturbed by different opinions between S&P and Moody's (Tran et al., 2014).

On the other hand, in terms of positive events, only the positive events by Moody's on the superior ratings (versus S&P) impose a significant impact. In contrast, positive rating signals assigned by S&P and Fitch - under the effect of pre-event ratings which are split with another CRA - insignificantly affect the foreign exchange market. The result also supports the view that S&P tends to lead in sovereign downgrades while Moody's tends to be the 'first mover' in upgrades (e.g. Alsakka and ap Gwilym, 2010).

Table 8 to Table 10 report the results of Eq. (4) in the dynamics of foreign exchange market in reaction to credit rating announcements with pre-event split ratings. It should be noted that 1-unit changes in the CCR cause varying effect on the CCR depending on the investors' behaviours in response to market's uncertainty. Only the market impact of S&P ratings are affected by pre-event ratings which are unequally rated by Moody's and Fitch whereas there is no significant evidence that pre-event split ratings induce market volatility on and after the days of Moody's and Fitch news.

As been observed from Table 10, currency market's volatility also strongly reacts to S&P positive signals on the prior superior ratings than Fitch. The magnitude of reduction in volatility is 0.77% following one point CCR upgrade by S&P. This is in line with the result of Vu et al. (2015) that positive events on superior ratings and negative events on inferior ratings can strengthen the believe of investors in current movement of the market. These kinds of event break the inherent ambiguity in preceding split ratings between CRAs, hence trigger a strong reaction in foreign exchange rate market. Also, negative actions on inferior rating conveying a growing level of sovereign risk and uncertainty can instigate the market's volatility. In contrast, if a superior rating is confirmed by a positive event, the market tends to be stabilized due to a positive sign of sovereign creditworthiness. Interestingly, S&P downgrade on preceding superior rating than Fitch also significantly influence the market volatility. As been discussed in the market impact of Fitch ratings, especially during crisis period, Fitch actions play a confirmation role of S&P and Moody's announcements and split ratings between them. If Fitch rates a lower rating than S&P, investors are likely to expect a subsequent negative sign action. This is the reason why S&P downgrades following a superior rating (inferior rating of Fitch) can reduce the market uncertainty. It is consistent with the suggestion that "additional information" are likely to reduce the financial market volatility (Tran et al., 2014).

Table 3. OLS regression of the exchange rates' reactions to negative sovereign rating events on split rated sovereigns (Eq.1)

Panel A - Negative events						
	S&P		**Moody's**		**Fitch**	
	Coeff	**t-val**	**Coeff**	**t-val**	**Coeff**	**t-val**
Constant	0.4965	1.62	-0.3084	-0.6	0.4743	0.800
	(0.3061)		(0.5107)		(0.5923)	
ΔCCR	**0.0854*****	2.66	**0.0887****	2.38	-0.0061	-0.150
	(0.0321)		**(0.0373)**		(0.0405)	
CCR	-0.0030	-0.33	**0.0301****	2.53	0.0161	1.410
	(0.0090)		**(0.0119)**		(0.0114)	
PRIOEVENTS	-0.0702	-1.46	-0.0176	-0.15	-0.0034	-0.030
	(0.0482)		(0.1210)		(0.1224)	
VIX Index	**8.5865*****	3.95	10.4378	2.7	**6.6103****	2.120
	(2.1739)		(3.8670)		**(3.1122)**	
No of observations	384		282		294	
Adjusted R-squared (%)	29.66		11.6		9.57	
Panel B – positive events						
	S&P		**Moody's**		**Fitch**	
	Coeff	**t-val**	**Coeff**	**t-val**	**Coeff**	**t-val**
Constant	-0.1233	-0.3	-0.0529	-0.16	-0.0008	0
	(0.4088)		(0.3409)		(0.5499)	
ΔCCR	-0.1075	-1.81	**-0.1471*****	-2.88	-0.0072	-0.13
	(0.0595)		**(0.0510)**		(0.0543)	
CCR	-0.0008	-0.07	0.0160	1.61	0.0127	1.04
	(0.0122)		(0.0099)		(0.0122)	
PRIOEVENTS	-0.1144	-1.62	-0.1029	-1.19	-0.2216	-1.62
	(0.0705)		(0.0868)		(0.1368)	
VIX Index	13.8764	2.78	2.5600	0.69	**4.7847****	1.85
	(4.9995)		(3.6873)		**(2.5818)**	
No of observations	288		224		208	
Adjusted R-squared (%)	0.87		13.52		3.25	

The table presents the coefficient estimated of Eq. (1) using the sample of 52 sovereigns rated by each agency. Year dummies and country dummies are included. The 'bold' coefficients are significant at the 10% level or less.

***: significant at 1% level **: significant at 5% level *: significant at 10% level.

Table 4. OLS regression of the exchange rate volatility's reactions to negative sovereign

rating events on split rated sovereigns (Eq.2)

Panel A - Negative events						
	S&P		**Moody's**		**Fitch**	
	Coeff	**t-val**	**Coeff**	**t-val**	**Coeff**	**t-val**
Constant	**-6.0408*****	-2.73	-1.2768	-0.43	0.7247	0.18
	(2.2161)		(2.9703)		(3.9182)	
ΔCCR	**0.3924****	1.69	**0.3623***	1.67	0.3382	1.26
	(0.2327)		**(0.2169)**		(0.2676)	
CCR	0.0656	1	0.0545	0.79	0.0793	1.05
	(0.0654)		(0.0690)		(0.0756)	
PRIOEVENTS	-0.5045	-1.45	-0.4329	-0.62	-0.8381	-1.04
	(0.3491)		(0.7036)		(0.8097)	
VIX Index	**75.2177*****	4.78	**61.4129*****	2.73	101.6488	4.94
	(15.7383)		**(22.4904)**		(20.5863)	
No of observations	384		282		294	
Adjusted R-squared (%)	7.25		8.24		13.5	
Panel B – positive events						
	S&P		**Moody's**		**Fitch**	
	Coeff	**t-val**	**Coeff**	**t-val**	**Coeff**	**t-val**
Constant	0.9874	0.43	-1.1481	-0.38	-2.9611	-1.05
	(2.3006)		(3.0203)		(2.8264)	
ΔCCR	-0.3195	-0.93	0.0425	0.1	0.4011	1.44
	(0.3442)		(0.4393)		(0.2791)	
CCR	-0.0194	-0.29	0.0947	1.05	0.0219	0.35
	(0.0668)		(0.0900)		(0.0625)	
PRIOEVENTS	-0.0363	-0.06	-0.1106	-0.21	0.1706	0.24
	(0.5857)		(0.5206)		(0.7034)	
VIX Index	39.8893	1.6	38.2896	1.04	**34.7684****	2.62
	(24.8837)		(36.9348)		**(13.2703)**	
No of observations	288		224		208	
Adjusted R-squared (%)	0.19		-1.05		11.83	

The table presents the coefficient estimated of Eq. (2) using the sample of 52 sovereigns rated by each agency.

Year dummies and country dummies are included. The 'bold' coefficients are significant at the 10% level or less.

***: significant at 1% level **: significant at 5% level *: significant at 10% level.

Table 5. OLS panel regressions of exchange rate's reactions to S&P's sovereign rating events on split rated sovereigns (Eq.3)

Explanatory Variables	S&P's negative events				S&P's positive events			
	S&P vs. Moody's		S&P vs. Fitch		S&P vs. Moody's		S&P vs. Fitch	
	Coeff	t-val	Coeff	t-val	Coeff	t-val	Coeff	t-val
Constant	**0.2596***	0.81	0.0440	0.14	-0.2006	-0.710	-0.0558	-0.1
	(0.3194)		(0.3067)		(0.2818)		(-0.0558)	
ΔCCR*SUP	0.0616	1	-0.0579	-0.52	0.0183	0.320	-0.0551	-0.75
	(0.0616)		(0.1111)		(0.0579)		(0.0732)	
ΔCCR*INF	**0.0802****	2.5	**0.1246*****	3.73	0.0553	0.630	-0.0597	-0.48
	(0.0320)		**(0.0334)**		(0.0873)		(0.1253)	
CCR	**0.0192****	2.19	0.0189	1.86	0.0055	0.710	-0.0010	-0.1
	(0.0088)		(0.0102)		(0.0078)		(0.0104)	
PRIOEVENTS	**-0.0463***	-1.78	-0.0030	-2.03	-0.0210	-0.500	-0.0013	-0.49
	(0.0261)		(0.0015)		(0.0419)		(0.0026)	
VIX Index	5.1054	2.62	**13.1845*****	5.37	2.5636	1.470	**7.4411****	2.44
	(1.9458)		**(2.4530)**		(1.7441)		**(3.0535)**	
No of observations	348		350		204		204	
Adjusted R-squared (%)	38.9		33.77		11.46		3.46	

The model is controlled for year and country dummies. The 'bold' coefficients are significant at the 10% level or less.

***: significant at 1% level **: significant at 5% level *: significant at 10% level.

Table 6. OLS panel regressions of exchange rate's reactions to Moody's sovereign rating events on split rated sovereigns (Eq.3)

Explanatory Variables	Moody's negative events				Moody's positive events			
	Moody's vs. S&P		Moody's vs. Fitch		Moody's vs. S&P		Moody's vs. Fitch	
	Coeff	t-val	Coeff	t-val	Coeff	t-val	Coeff	t-val
Constant	0.0723	0.14	-0.0107	-0.02	0.0821	0.250	-0.1085	-0.3
	(0.5308)		(0.4709)		(0.3266)		(0.3579)	
ΔCCR*SUP	**0.1535***	1.73	0.1434	1.36	**-0.1651****	-2.130	-0.0484	-0.56
	(0.0886)		(0.1057)		**(0.0775)**		(0.0869)	
ΔCCR*INF	0.0061	0.13	-0.0173	-0.45	0.0495	0.700	0.0250	0.38
	(0.0479)		(0.0388)		(0.0710)		(0.0664)	
CCR	-0.0008	-0.05	0.0283	1.9	0.0030	0.230	0.0138	0.93
	(0.0170)		(0.0149)		(0.0130)		(0.0149)	
PRIOEVENTS	0.0209	0.48	0.0389	1.06	0.0799	1.280	0.0388	0.69
	(0.0435)		(0.0368)		(0.0626)		(0.0566)	
VIX Index	**9.3786*****	3	17.1890	4.44	**7.3175****	2.200	**13.8478****	2.54
	(3.1215)		(3.8673)		**(3.3217)**		**(5.4626)**	
No of observations	244		240		174		158	
Adjusted R-squared (%)	15.05		10.92		-3.01		-3.78	

The model is controlled for year and country dummies. The 'bold' coefficients are significant at the 10% level or less.

***: significant at 1% level **: significant at 5% level *: significant at 10% level.

Table 7. *OLS panel regressions of exchange rate's reactions to Fitch's sovereign rating events on split rated sovereigns (Eq.3)*

Explanatory Variables	Fitch's negative events				Fitch's positive events			
	Fitch vs. S&P		Fitch vs. Moody's		Fitch vs. S&P		Fitch vs. Moody's	
	Coeff	t-val	Coeff	t-val	Coeff	t-val	Coeff	t-val
Constant	-0.1417	-0.27	-0.1009	-0.19	-0.2463	-0.610	-0.0059	-0.15
	(0.5193)		(0.5347)		(0.4046)		(0.0401)	
ΔCCR*SUP	-0.0745	-1.19	0.0517	0.73	0.0199	0.400	0.0002	0.04
	(0.0626)		(0.0703)		(0.0502)		(0.0049)	
ΔCCR*INF	0.0143	0.29	-0.0169	-0.43	-0.1060	-1.060	-0.0145	-1.4
	(0.0490)		(0.0390)		(0.1000)		(0.0103)	
CCR	0.0198	1.42	0.0004	0.04	-0.0148	-1.270	-0.0015	-1.52
	(0.0139)		(0.0119)		(0.0116)		(0.0010)	
PRIOEVENTS	-0.0189	-0.44	0.0422	1.15	0.0173	0.310	0.0004	0.1
	(0.0432)		(0.0369)		(0.0564)		(0.0043)	
VIX Index	**8.6009*****	2.65	5.0082	1.89	**6.0566***	1.850	0.3045	1.16
	(3.2418)		(2.6555)		**(3.2801)**		(0.2635)	
No of observations	204		294		164		176	
Adjusted R-squared (%)	18.94		5.48		6.51		1.26	

The model is controlled for year and country dummies. The 'bold' coefficients are significant at the 10% level or less.

***: significant at 1% level **: significant at 5% level *: significant at 10% level.*

Table 8. OLS panel regressions of exchange rate volatility reactions to S&P's sovereign rating events on split rated sovereigns (Eq.4)

Explanatory Variables	S&P's negative events				S&P's positive events			
	S&P vs. Moody's		S&P vs. Fitch		S&P vs. Moody's		S&P vs. Fitch	
	Coeff	t-val	Coeff	t-val	Coeff	t-val	Coeff	t-val
Constant	1.8734	0.81	3.2494	1.53	**-4.935***	-1.810	**8.8806*****	2.71
	(2.3083)		(2.1215)		(2.7282)		(3.2829)	
ΔCCR*SUP	0.3978	0.89	**-1.8048****	-2.35	0.4206	0.750	**-0.7707***	-1.73
	(0.4453)		**(0.7687)**		(0.5601)		**(0.4453)**	
ΔCCR*INF	**0.4328***	1.87	-0.1209	-0.52	-0.2393	-0.280	-1.1535	-1.51
	(0.2312)		(0.2310)		(0.8451)		(0.7620)	
CCR	0.0263	0.41	0.0076	0.11	-0.0338	-0.450	-0.0113	-0.18
	(0.0634)		(0.0703)		(0.0758)		(0.0632)	
PRIOEVENTS	-0.0773	-0.41	-0.0090	-0.87	0.3841	0.950	-0.0183	-1.14
	(0.1883)		(0.0104)		(0.4054)		(0.0161)	
VIX Index	**70.3740*****	5	**92.906*****	5.48	**83.5818*****	4.950	**41.1053****	2.21
	(14.0636)		**(16.9689)**		**(16.8841)**		**(18.5674)**	
No of observations	348		350		204		204	
Adjusted R-squared (%)	12.39		10.87		16.16		13.73	

The model is controlled for year and country dummies. The 'bold' coefficients are significant at the 10% level or less.

***: significant at 1% level **: significant at 5% level *: significant at 10% level.*

Table 9. OLS panel regressions of exchange rate volatility reactions to Moody's sovereign rating events on split rated sovereigns (Eq.4)

Explanatory Variables	Moody's negative events				Moody's positive events			
	Moody's vs. S&P		Moody's vs. Fitch		Moody's vs. S&P		Moody's vs. Fitch	
	Coeff	t-val	Coeff	t-val	Coeff	t-val	Coeff	t-val
Constant	-3.4436	-1.14	**-4.3023***	-1.76	1.0473	0.290	0.3842	0.15
	(3.0310)		**(2.4418)**		(3.6573)		(2.5553)	
ΔCCR*SUP	-0.1229	-0.24	-0.8607	-1.57	-0.2934	-0.340	-0.5629	-0.91
	(0.5057)		(0.5482)		(0.8682)		(0.6206)	
ΔCCR*INF	-0.1070	-0.39	-0.0927	-0.46	0.1524	0.190	0.6216	1.31
	(0.2735)		(0.2014)		0.7950		0.4737	
CCR	0.1709	1.76	0.1458	1.88	-0.0080	-0.050	0.0139	0.13
	(0.0973)		(0.0775)		0.1458		0.1062	
PRIOEVENTS	-0.1050	-0.42	0.1602	0.84	0.6595	0.940	0.3881	0.96
	(0.2484)		(0.1910)		0.7011		0.4038	
VIX Index	**61.3976***	3.44	**124.7874***	6.22	**-141.4684***	-3.800	**76.8198***	1.97
	(17.8247)		**(20.0515)**		37.1948		38.9968	
No of observations	244		240		174		158	
Adjusted R-squared (%)	11.72		20.53		0.17		3.98	

The model is controlled for year and country dummies. The 'bold' coefficients are significant at the 10% level or less.

***: significant at 1% level **: significant at 5% level *: significant at 10% level.

Table 10. OLS panel regressions of exchange rate volatility reactions to Fitch's sovereign rating events on split rated sovereigns (Eq.4)

Explanatory Variables	Fitch's negative events				Fitch's positive events			
	Fitch vs. S&P		Fitch vs. Moody's		Fitch vs. S&P		Fitch vs. Moody's	
	Coeff	t-val	Coeff	t-val	Coeff	t-val	Coeff	t-val
Constant	-3.1104	-0.72	-2.4005	-0.54	-4.4975	-1.200	-0.0123	-0.33
	4.3090		4.4205		3.7391		0.0374	
ΔCCR*SUP	0.0487	0.09	0.4387	0.75	0.7083	1.530	0.0044	0.96
	0.5195		0.5816		0.4640		0.0046	
ΔCCR*INF	0.3352	0.82	0.4663	1.45	0.1673	-1.060	0.0056	0.58
	0.4070		0.3227		0.1000		0.0096	
CCR	0.0930	0.8	0.1154	1.18	-0.1373	-1.280	-0.0005	-0.52
	0.1157		0.0982		0.1072		0.0009	
PRIOEVENTS	-0.4109	-1.15	-0.0236	-0.08	0.2320	0.450	-0.0014	-0.35
	0.3582		0.3047		0.5208		0.0040	
VIX Index	**72.7932***	2.71	**108.5484***	4.94	**57.73348***	1.900	**0.5298****	2.15
	26.8991		**21.9548**		**30.3151**		**0.2460**	
No of observations	204		294		164		176	
Adjusted R-squared (%)	12.97		5.46		-1.86		-6.24	

The model is controlled for year and country dummies. The 'bold' coefficients are significant at the 10% level or less.

***: significant at 1% level **: significant at 5% level *: significant at 10% level.

6. CONCLUSION

There is wide interest in sovereign credit ratings and split ratings and their impact on financial markets, but the relation between sovereign rating actions and foreign exchange rates attracts little attention. However, the economic rationale of sovereign rating impact on the currency market can be inferred from the casual linkages between sovereign credit ratings and fiscal indices of a country, as well as the direct influence of a sovereign fiscal health over its currency and exchange rate. Prior papers exhibit evidences about these relations, but empirical studies remain silent on the information content of split ratings to foreign exchange market, and particular to exchange rate volatility. This question is empirically addressed in this paper.

The sample reveals a high probability of split ratings occurred during the study period. The results provide empirical insight on the information content of sovereign credit rating changes and split ratings for the foreign exchange market. There are empirical evidences about the market's asymmetric responses not only between negative and positive rating signals but also across CRAs. Particularly, S&P negative rating announcements appear to demonstrate a 'first mover' feature in global currency markets, whereas Moody's is likely to lead the market reaction to positive credit events. This offers a considerable contribution to prior literatures on market impacts of sovereign credit ratings. Furthermore, the study analyses the currency market impact of certain types of rating announcements from the perspective of split ratings. Particularly, the distinct significant effect of inferior (superior) ratings on negative (positive) events, which was found in bond and stock markets by Vu et al. (2015), is confirmed in this study when it comes to foreign exchange rate. The effect of split rating on reaction of foreign exchange rate to rating events is in line with the viewpoint of Epstein and Schneider (2008) about trading attitude under ambiguity aversion. Specifically, the influence of split ratings which raise uncertainty about sovereign default risk is driven by how ambiguous the market is after the events concerning prior split ratings. Ambiguity increases when inferior ratings are downgraded and superior ratings are upgraded, hence risk – averse market participants react strongly to negative rating changes on prior inferior ratings and positive announcement on pre-event superior ratings. Further, the study shows a significant relation between exchange rate volatility and split ratings across CRAs, which has not been considered in prior papers regarding the market impacts of split ratings. Only the information content of S&P events to exchange rate volatility are affected by prior split ratings (with Moody's and Fitch). Particularly, the action of downgrading S&P superior ratings versus Fitch's, which is unexpected, strongly give rise to currency market's ambiguity.

Although the study contributes to literature in a number of respects and also have practical implications for financial institutions, there remains some limitations. The sample is based on the biggest currency markets with 17 out of 52 countries using Euro, therefore the findings seem inclined to the European market while the reactions of developing foreign exchange markets is not the focus. Moreover, other econometric models which account for both the behaviours of exchange rate and exchange rate volatility (e.g. GARCH family) could be employed as robustness tests. In addition, investigations on split ratings assigned for corporate and banking sectors are potential suggestion for future studies. Also, the question of whether split ratings have spill-over effects on global foreign exchange markets should be considered in future studies.

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APPENDICES

APPENDIX A. COUNTRIES SAMPLE

Argentina	Estonia	Korea	Russia
Australia	Finland	Latvia	Saudi Arabia
Austria	France	Lithuania	Singapore
Bahrain	Germany	Malaysia	Slovakia
Belgium	Greece	Malta	Slovenia
Brazil	Hong Kong SAR	Mexico	South Africa
Bulgaria	Hungary	Netherlands	Spain
Chile	India	New Zealand	Sweden
China	Indonesia	Peru	Switzerland
Colombia	Ireland	Philippines	Thailand
Croatia	Israel	Poland	Turkey
Cyprus	Italy	Portugal	United Kingdom
Czech Republic	Japan	Romania	

Appendix B. How the ratings are mapped to an 18 notch rating scale and the 52 point CCR.

S&P Rating	Moody's Rating	Fitch Rating	18-notch scale	52 point CCR scale
AAA	Aaa	AAA	18	52
AA+	Aa1	AA+	17	49
AA	Aa2	AA	16	46
AA-	Aa3	AA-	15	43
A+	A1	A+	14	40
A	A2	A	13	37
A-	A3	A-	12	34
BBB+	Baa1	BBB+	11	31
BBB	Baa2	BBB	10	28
BBB-	Baa3	BBB-	9	25
BB+	Ba1	BB+	8	22
BB	Ba2	BB	7	19
BB-	Ba3	BB-	6	16
B+	B1	B+	5	13
B	B2	B	4	10
B-	B3	B-	3	7
CCC+/CCC/CCC-	Caa1/Caa2/Caa3	CCC	2	4
CC/C/SD	Ca/C/D	CC/C/D	1	1

THE IMPACT OF FINANCIAL DEVELOPMENT ON ECONOMIC GROWTH: EVIDENCE FROM VIETNAM

Bui Thi Le Thuy[*] - Nguyen Thi Ngoc Mien[**]

ABSTRACT: *This paper investigates the effect of financial development to economic growth in Vietnam for the period 1990 – 2017. Using the Autoregressive Distributed Lag (ARDL) Bounds test approach, we find that financial development has a long-run positive impact on the growth of economic. Besides, the error correction model indicates that although there exists the disequilibrium in the relationship between financial development and economic growth in the short-run, the economy will converge back to the long-run equilibrium in the current year.*

Keywords: *financial development; economic growth; ARDL bound test; error correction model.*

1. INTRODUCTION

In recent year, there has been a vast empirical work on the role of the development of a country's financial sector to economic growth. However, there is no consensus on the relationship between financial development and economic growth. The first school of thought argues that financial development is the important factors for the growth of the economic by influencing the investment, saving and technological innovations (Beck & Demirguc-Kunt, 2006; Levine & Zervos, 1999). The empirical results of some studies have been advocated this school of thought when they conclude that financial development has the positive effect to economic growth, for instance, Benhabib and Spiegel (2000), Levine et al. (2000), Hermes and Lensink (2013). Another school of thought argues that financial is not the primary source of economic growth and the relationship between financial development and economic growth has been overstressed in literature (Jayaratne & Strahan, 1996; Lucas Jr, 1988). The third view is one of the negative relationship between finance and growth. The high level of liberalization of the financial sector results in decrease the total real credit to the domestic firms, and thereby lowers investments and slows economic growth (Al-Malkawi & Abdullah, 2011; Boyreau-Debray, 2003; De Gregorio & Guidotti, 1995). The finance-growth nexus continues becoming the highly debated issues in financial economics nowadays.

According to the Asia Development Outlook reported by Asian Development Bank (2018), Vietnam is expected to continue strong growth with a forecasted GDP growth of 7.1% in 2018 and become one of the three fastest growing economies in the region. As the frontier market and with spurred rapid economic growth, Vietnam presents an interesting case to study. Understanding which factors affecting Vietnamese economic growth is the imperative task.

Besides, twenty years after "Doi Moi" policy, the Vietnamese financial sector has developed strongly both in breadth and in depth. Starting from only four State Owned Commercial Banks and a small number of credit cooperatives in 1990, in 2017, the number has increased to 44, including 4 State Owned Commercial Banks, 31 shareholding and joint venture banks and 9 wholly-owned foreign banks. As the result, banking

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networks and services have been expanding rapidly and created great potential for banks to grow their retail banking business. By the year 2017, the capital supply to the economy from the financial system is estimated at 198% of GDP (National Financial Supervisory Commission, 2017). The Vietnamese stock market develops at the high level, attracting lots of foreign investment. In the Vietnamese financial report, the National Financial Supervisory Commission (2016) concludes that the financial system has performed well its function of providing capital for the economy thanks to stable macroeconomics, liquidity of the banking sector and positive developments of the stock market.

It is seemed that the financial development accompanies with economic growth, which leads the question whether the financial development has directly impacted to the economic growth. To the best of our knowledge, there is limited study investigating about the directly impact of financial development to economic growth in the case of Vietnam. This study attempts to fill the literature gap by exploring the Vietnamese finance–growth relationship.

The rest of the paper proceeds as follows. Section 2 reviews the empirical literature on the relationship between financial development and economic growth. Section 3 outlines describes the set of explanatory variables measuring the financial sector development; some control variables and the dependence variables. In Section 4, we outline the major methodologies utilized in this study. Section 5 reports the results and discussion of results. Finally, Section 6 concludes the paper.

2. LITERATURE REVIEW

There is a substantial amount of literature that tries to explore the relationship between financial development and economic growth. Levine et al. (2000) apply the general moment method using a country's legal origin as the valid instrumental variable to answer whether financial development impact directly to economic growth. Their result shows that financial development is significantly and positively associated with economic growth. Beck et al. (2000) use the variables of banking sector development as the proxy of the financial development. In their study, they conclude that the difference in financial infrastructure across countries has a strong impact on the growth of the economic. A well-developed banking system will improve the legal and accounting standards of the banking sector, which will facilitate financial development and therefore boost the economic growth. Using stock market liquidity and bank credit as the measures of financial development, Beck and Levine (2004) confirm that these two variables are positively correlated with the current and future rates of economic growth. Also using banking system as the proxy for the financial development of the United State, Dehejia and Lleras-Muney (2003) show that well-function banking systems boost economic growth through improving capital allocation. Hermes and Lensink (2013) confirm the importance of domestic financial market when it contribute to mobilizing saving, screen and monitor investment projects, which lead to higher economic growth.

Despite of strong evidence of the effect of finance to growth, recent literature begins to question the magnitude and sign of the effect of financial development to economic growth in previous studies. Graff (2003) points out that when economic growth increases at the same rate as that of financial development, there is no causal relationship between them. Besides, when in some case of destabilizing situation such as financial crises, financial development has a negative impact on economic growth. Christopoulos and Tsionas (2004) criticize some previous studies using dynamic panel model to explore the causality running from financial development to economic growth that they ignore the integration and cointegration properties of the data. Therefore, the estimated model can represent a spurious long-run equilibrium relationship. Naceur and Ghazouani (2007) support the idea of no significant relationship between banking and stock market development, and growth. Law and Singh (2014) apply the innovative dynamic panel threshold technique for the data of 87 developed and developing countries and they reveal that more finance is not necessarily

good for economic growth. Samargandi et al. (2014) collect time series data in 42 years for the Saudi Arabia and apply an ARDL bound test to examine the long and short-run impact of finance to economy. The effect of financial development on oil-sector growth is either statistical insignificant or negative and significant. Ductor and Grechyna (2015) use panel data for 101 developed and developing countries over the period 1970 to 2010 and they point out that the effect of financial development on growth becomes negative, if private credit grows rapidly but it does not accompany by growth in real output.

For the case of Vietnam, Anwar and Nguyen (2011) apply the generalized method of moments for the data on 61 provinces of Vietnam in the period 1997 to 2006. They use many alternative measures of financial development and find a strong positive link between financial development and economic growth. In our best knowledge, there is no more study investigating about the relationship of Vietnamese finance – growth.

3. VARIABLES AND DATA

3.1. Data description

We use annual data covering the period from 1990 to 2017. The Vietnamese annual growth rate of real GDP per capital plays the role as the dependence variable. Some potentially important determinants of economic growth are also collected. The independent variables included in this study consists of annual observations on various measures of financial development, trade openness and the annual average global oil price. We use the principle component analysis to construct a single measure of financial development. The trade openness is measured by imports plus exports to GDP presents the actual status of economic activities within a country. The Brent crude oil spot price – in USD per barrel (Oprice), which is considered as a world benchmark for oil price, is used.

3.2. The construction of financial development variable

We collect data on the following three indicators of financial development: The ratio of broad money (M2) to nominal GDP is the first measure to be considered. However, this measure is more related to the ability of the financial system to provide transaction services than its ability to channel the fund from savers to borrowers (Khan & Semlali, 2000). We also use the credit to private sector to nominal GDP as the proxy for financial development, following Beck et al. (2000). Finally, the domestic credit provided by financial sector divided to GDP represents the importance of banking sector, which is the suitable description for financial development (Saci & Holden, 2008).

We apply the principal component analysis to construct a single measure of financial development. The main objective of principal component analysis is to decrease the dimensionality in data. According to Ang and McKibbin (2007), this will help to address the problem of multicollinearity or the high correlation between indicators of finance. Second, it cannot be said that any indicator is the best measure of financial development. Therefore, having the summary measure that includes all the financial indicators will provide better information on financial development.

Table 1. *Principle component analysis*

Component	Eigenvalue	Proportion	Cumulative	Score coefficient matrix		
				Broad money	Credit to private sectore	Credit provided by financial sector
Comp1	2.986	0.995	0.995	0.576	0.578	0.578
Comp2	0.013	0.004	0.999	0.817	-0.432	-0.383
Comp3	0.002	0.001	1.000	0.029	0.693	-0.721

Number of observation = 28

Table 1 presents the result of principal component analysis with the three of financial development indicators mentioned above. The eigenvalue of the first component is larger than one and explains 99.52% of the standardized variance. Hence, the first component is the best measure of financial development in this case.

4. METHODOLOGY

In applied econometrics, there are three commonly used techniques to determine the long-run relationship between series that are non-stationary: Engle and Granger (1987) cointegration technique and Autoregressive Distributed Lag (ARDL) cointegration technique or bounds test of cointegration (Pesaran et al., 2001).

In this study, we use the ARDL bounds test to investigate the effect of financial development on economic growth because this technique has some advantages in comparison with other previous methods. First, it is possible to test the cointegrating association between the variables regardless of different orders of integration (Pesaran et al., 2001) while the validity of Engle – Granger and Johansen techniques requires that all the variables be integrated of order one, I(1). The second improvement to the ARDL technique is that it is appropriate to test long-run associations among the series if the sample period is small and it can also correct for probable endogeneity (Pesaran et al., 2001). Moreover, applying the ARDL technique helps us to obtain unbiased estimates of the long-run model (Harris & Sollis, 2003).

The ARDL model used in this study is expressed as follows:

$$\Delta lGDP_t = \beta_0 + \beta_1 lGDP_{t-1} + \beta_2 FD_{t-1} + \beta_3 lTRD_{t-1} + \beta_4 lOILP_{t-1}$$
$$+ \sum_{i=1}^{p} \gamma_i \Delta lGDP_{t-i} + \sum_{j=1}^{q_1} \delta_j \Delta FD_{t-j} + \sum_{k=1}^{q_2} \varphi_k \Delta lTRD_{t-k} + \sum_{m=1}^{q_3} \eta_m \Delta lOILP_{t-m} + \varepsilon_t \quad (1)$$

In this equation, lGDP is the natural logarithm of real gross domestic product per capita, FD stands for financial development, lTRD is the natural logarithm of trade openness, lOILP is the natural logarithm of annual average global oil price, and ε is the error term.

$\beta_1, \beta_2, \beta_3, \beta_4$ measure long term relationships. For the purpose of examining the existence of a long-run relationship, we test the null of no long-run cointegration:

$$H_0 : \beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$$

against the alternative hypothesis which states the presence of a long-run association. We then compare the F-statistic with the critical values (upper and lower bound) given by Pesaran et al. (2001). The null hypothesis is rejected if the F-statistic is above the upper critical value. In this case, the long-run relationship exists between the variables.

After testing the relationship among the variables, we estimate the long-run coefficients of the following ARDL model:

$$lGDP_t = \beta_0 + \sum_{i=1}^{p} \gamma_i lGDP_{t-i} + \sum_{j=0}^{q_1} \delta_j \Delta FD_{t-j} + \sum_{k=0}^{q_2} \varphi_k lTRD_{t-k} + \sum_{m=0}^{q_3} \eta_m lOILP_{t-m} + \varepsilon_t \quad (2)$$

The most appropriate lag length for all the variables are chosen by using Schwarz Bayesian Information criteria. We keep going to estimate the short-run dynamics by using the following error correction model:

$$\Delta lGDP_t = \beta_0 + \sum_{i}^{p} \gamma_i \Delta lGDP_{t-i} + \sum_{j}^{q'_1} \delta_j \Delta FD_{t-j} + \sum_{k}^{q'_2} \varphi_k \Delta lTRD_{t-k} + \sum_{m}^{q'_3} \eta_m \Delta lOILP_{t-m} + \alpha ECM_{t-1} + \varepsilon_t \quad (3)$$

Finally, we apply number of diagnostic tests to the model to check for the presence of serial correlation, multicollinearity, error in functional form, heteroskedasticity and the stability of long-run coefficients together with the short-run dynamics.

5. RESULTS AND DISCUSSION

5.1. Unit-root test

As discussed previously, the ARDL bounds testing approach can be applied, regardless of the order of integration. The series can be integrated at I(0) or I(1) or I(0)/I(1). However, it must be ensured that none of them are I(2) as the computation process for F-statistics is invalid if this is the case. The ADF unit-root test is used to indicate whether or not the ARDL model should be used and the results are shown in Table 2.

Table 2. *Unit-root test*

Variables	ADF test			
	In level I(0)		First Difference I(1)	
	Intercept	**Intercept and trend**	**Intercept**	**Intercept a Trend**
lGDP	-2.219	-2.544	-5.456 ***	-5.416***
FD	0.045	-3.019	-6.314***	-6.253***
lTRD	-0.219	-3.918**	-9.195 ***	-8.967 ***
lOILP	-0.995	-1.701	-4.386 ***	-4.320 ***

***, **, * denotes statistical significance at 1%, 5% and 10% level respectively.

As can be seen from this table, only lTRD is stationary at the 5% significant level, whereas the others are stationary after first differencing. This implies that using the ARDL bounds test technique to explore the impact of financial development on the economic growth is more appropriate than the Engle – Granger or Johansen methods as we mentioned before.

5.2. Cointegration test

Table 3 displays the results from bounds test including the F-statistic, probability and the corresponding outcomes. Based on the bounds test, there is a cointegration relationship among the variables of the first model because the F – statistic, 15.935, is higher than the upper bound critical value at the 1% level of significance. We also have the same outcomes for the second and the fourth model in which FD and lOILP are dependent variables respectively. However, with the third model, the F-statistic from bounds test is just 2,117, less than the lower bound critical value. This means we cannot reject the null hypothesis of no cointegration among those variables. In summary, the result suggests the presence of cointegrating relationship between lGDP and all independent variables.

Table 3. *Result from Bounds test*

Dependent Variable	F – statistics	Probability	Outcome
F_{lGDP}(lGDP|FD, lTRD, lOILP)	15.935	0.000***	Cointegration
F_{FD}(FD| lGDP, lTRD, lOILP)	8.956	0.008***	Cointegration
F_{lTRD}(lTRD|FD, lGDP, lOILP)	2.117	0.484	No Cointegration
F_{lOILP}(lOILP|FD, lTRD, lGDP)	7.239	0.020**	Cointegration

***, **, * denotes statistical significance at 1%, 5% and 10% level respectively.

5.3. Long-run impact.

Table 4. *Estimated long-run coefficients using the ARDL approach*

ARDL(2, 3, 2, 3) selected based on Schwarz Bayesian Criterion				
Dependent variable is lGDP				
Regressor	**Coefficient**	**Standard error**	**T-ratio**	**Probability**
Constant	0.8227 *	0.4221	1.95	0.077
FD	0.0069***	0.0016	4.43	0.001
lTRD	0.5742 *	0.2772	2.07	0.063
lOILP	0.2251**	0.0959	2.35	0.039

*****, **, * *denotes statistical significance at 1%, 5% and 10% level respectively.*

The long-run impact of FD, lTRD and lOILP on lGDP is reported in the Table 4 after estimating the equation (2). From this table, we can see that financial development, the annual average oil price and the trade openess have positive and significant effects on overall economic growth at the 1%, 5% and 10% significance levels respectively

5.4. Short-run impact and adjustment

We present the results of estimated coefficients of the error correction model in the Table 5. In the short-run, only oil price is significant at 5% level and has an important positive impact on GDP. Financial development and trade openess have a negative impact but not significant.

Besides, the ECM variable has the negative sign. This implies that short-run adjustment, which occurs at a high speed in the negative direction, is statistically significant. This also confirms the cointegration relationship among lGDP, FD, lTRD and lOILP. Moreover, thanks to the value of ECM coefficient, we can see that the disequilibrium caused by the previous year's shocks dissipates and the economy converges back to the long-run equilibrium. The short-run deviations for the long-run are corrected about 36%.

Table 5. *Error correction representation for the selected ARDL model*

ARDL(2, 3, 2, 3) selected based on Schwarz Bayesian Criterion.				
Dependent variable is ΔlGDP				
Regressor	**Coefficient**	**Standard error**	**T-ratio**	**Probability**
Constant	0.8227 *	0.4221	1.95	0.077
ΔFD	-0.0002	0.0005	-0.43	0.673
ΔlTRD	-0.0466	0.1249	-0.37	0.716
ΔlOILP	0.0667**	0.0275	2.42	0.034
ECM(-1)	-0.3596***	0.0548	-6.57	0.000
$R^2 = 0.9467$				

*****, **, * *denotes statistical significance at 1%, 5% and 10% level respectively.*

5.5. Diagnostic test

A number of diagnostic tests are applied to the error correction model above. This model passes all the tests against serial correlation (Breusch-Godfrey serial correlation test), heteroskedasticity (White heteroskedasticity test), and normality of errors (Jarque-Bera test). The Ramsey RESET test also suggests that the model is well specified. All the results are summarized in the Table 6

CUSUM and CUSUMSQ stability test results are shown in the Figure 1. The results indicate

the absence of any instability of the coefficients because the plot of the CUSUM and CUSUMSQ statistic fall inside the critical bands of the 5% confidence interval of parameter stability.
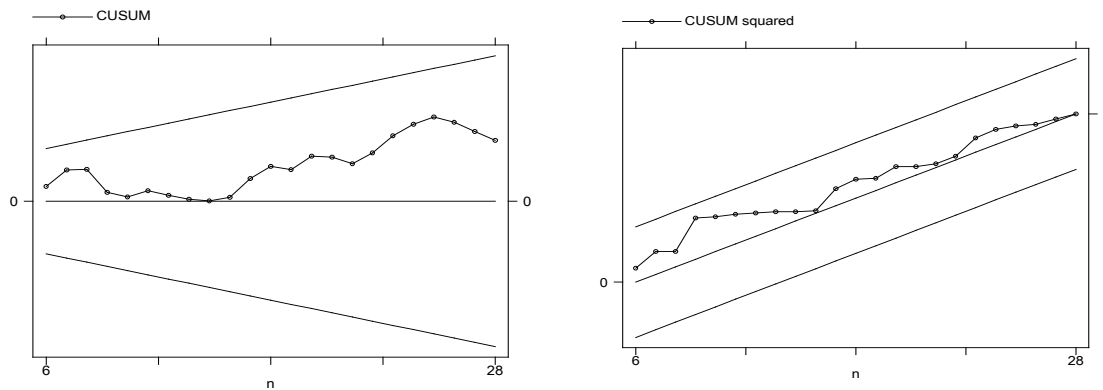
Figure 1. *Plot of CUSUM and CUSUMSQ for coefficient stability for ECM model (1)*

Table 6. *ARDL-ECM model diagnostic tests*

	Test statistic	Probability
Breusch-Godfrey Serial Correlation test	1.237	0.2661
White Heteroskedasticity test	25.00	0.4058
Jarque-Bera test	5.11	0.0779
Ramsey RESET Test (log likelihood ratio)	1.27	0.3477

6. CONCLUSION

The core objective of this study is to scrutinize the impact of financial development on the economic growth of Viet Nam by using the recent time series technique of the ARDL procedure. We found that there is a cointegration relationship between overall economic growth, financial development, trade openness and annual average oil price. In the long-run, economic growth is positively affected by financial development. This result is in line with the results of Levine et al (2000), Beck et al. (2000), Beck Levine (2004), Liesa- Muney (2003), Hermes and Lensink (2003) as we mentioned before.

Based on these findings, we realize the important role of financial sector in economic development. We hope that the Vietnamese Government will have good strategies to develop the financial system step by step so that it can help to increase the economic growth in the future.

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THE VALUATION IMPACT OF ASSETS ELEMENTS IN KOREAN STOCK MARKETS

Gee-Jung Kwon*

ABSTRACT: *This study investigates the valuation impact of asset elements on firm value in listed Korean stock markets during the period of 2000-2015. This paper extends conventional studies on firm valuation by including asset elements in an Ohlson (1995) model.*

Analysis results show that every asset element such as current assets, noncurrent assets, quick current assets, inventory assets, tangible assets, intangible assets, investment assets, and other noncurrent assets have significantly positive impact on firm value. However, performance variables such as net income, operating income, and operating cash flows are negatively associated with business value at the 1% significance level.

The results of this study show that the asset element on the balance sheet has a more positive effect on the increase in corporate value than the profitability and performance variables on the income statement and the cash flow statement. The empirical evidence of this study suggests that asset elements should be regarded as major corporate value related variables in Korean stock market. This study also suggests that intangible assets are the most important factors among accounting information should be considered in evaluating firm value.

Keywords: *Valuation impact; Asset elements; Assets Elements*

1. INTRODUCTION

In the past decades, there have been many studies on the usefulness of accounting information (Easton and Harris, 1991; Barth et al., 1997; Collins, Maydew, and Weiss, 1997; Han, 1998; Brown et al., 1999; Lev and Zarowin, 1999; Schipper, 1999; Zarowin, 1999; Blair and Wallman, 2001; Hand, 2001a, 2001b; Lee, 2009). Some of these studies argue that the usefulness of accounting information has been seriously degraded, as the accounting system does not properly reflect changes in the economic environment. Others have reported the contradictory result that the usefulness of accounting information has increased.

For example, Lev and Zarowin (1999) argue that the usefulness of accounting information is deteriorating, and this is one of the causes of the change in management environment. Brown et al. (1999) documents the change in the value relevance of accounting information is really happened. Moreover, Blair and Wallman (2001) argue that overall corporate value relevance of accounting information has declined over the last decades. Han (1998) reports that the usefulness of accounting information has deteriorated in the Republic of Korea.

However, unlike these studies, Collins, Maydew, and Weiss (1997) report that the combined value relevance of accounting earnings and book value increased over the past 40 years and that these findings are contrary to previous studies. They argue that the value relevance of accounting earnings decline with time, while the value relevance of capital increases with time. Francis and Schipper (1999) also report that, as the period elapsed, the value relevance of profits decreased, while the value relevance of book value of equity

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did not decrease. In Korea, Lee (2009) argues that the value relevance of accounting information after the financial crisis of 1997 has increased compared to before.

Previous research that analyzes whether the value relevance of accounting information has changed has argued that the value relevance of accounting information is changing because the accounting system does not adequately reflect changes in the environment. However, most of these studies have focused on accounting earning, operating income, and cash flows, which are components of profit and loss statements and cash flow statements. Relatively little researches have been conducted on the components of assets on the balance sheet.

However, the assets shown on the balance sheet may vary in extent to reflect changes in the environment, depending on the nature of the components. Additionally, in terms of future cash generating ability, which determines corporate value, it can be expected that each asset category will show a difference. Therefore, it can be assumed that the value relevance of accounting information will vary depending on the components of assets.

This study analyzes whether there is a difference in the value relevance of accounting information according to the asset composition, which is information on the balance sheet. Although there are prior studies analyzing the difference in the value relevance of accounting information according to stability, represented by the debt ratio, there is few studies analyzing the difference in the value relevance of accounting information according to asset elements in the balance sheet.

This study classifies asset items into current assets, noncurrent assets, quick current assets, inventory assets, tangible assets, intangible assets, investment assets, and other noncurrent assets according to the asset element of domestic listed companies in Korean stock markets. In particular, this study analyzes the effects of the components of assets on corporate value by classifying them according to the stock market, size of company, and technology level. Through this analysis, this study verifies how the value relevance of asset elements varies depending on the nature of the firm.

Analysis results show that every asset element such as current assets, noncurrent assets, quick current assets, inventory assets, tangible assets, intangible assets, investment assets, and other noncurrent assets have significantly positive impact on firm value. However, performance variables such as net income, operating income, and operating cash flows are negatively associated with business value at the 1% significance level.

The results of this study show that the asset element on the balance sheet has a more positive effect on the increase in corporate value than the profitability and performance variables on the income statement and the cash flow statement. The empirical evidence of this study suggests that asset elements should be regarded as major corporate value related variables in Korean stock market. This study also suggests that intangible assets are the most important factors among accounting information should be considered in evaluating firm value.

This paper is composed as follows. Chapter 2 reviews the previous research, which is the theoretical background of this study. Chapter 3 explains the methodology of this study. Chapter 4 presents the results of the empirical analysis. Finally, the summary and conclusion of this study are presented in Chapter 5.

2. Literature Review

Over the past several decades, much research has been conducted on the value relevance of accounting information. However, most of these studies have focused on analyzing the value relevance of profitability and performance variables on the income statement and the cash flow statement. However, there is little analysis of the value relevance of accumulated asset elements on the balance sheet. In this section, this paper reviews some of the major studies on the value relevance of accounting information so far.

First, Easton and Harris (1991) analyze whether accounting earning and book value have complementary value relevance. Weight of book value is lower when the weight is high for the verification results, and the results are similar for the opposite cases. In addition, the weight of profit is larger when the persistence of profit is larger, and the weight of book value is larger when the persistence of profit is smaller. This is because the value relevance of accounting earnings has decreased. The explanatory power of the book value on the balance sheet has increased rather than the decrease in the value relevance of accounting information due to changes in the industrial environment.

Barth et al. (1997) argues that as the firm's financial soundness deteriorated, the pricing multiples and additional explanatory power of the book value increased and the pricing multiple of accounting earnings and the additional explanatory power decreased. In this study, the financial soundness of the bond is determined by the credit rating of the bond. Collins et al. (1999) have shown that accounting earning is the dominant determinant of firm value for profit firms, while book value is the dominant determinant for loss firms. This is because the book value of the liquidation value is relatively more important than the accounting earnings because it is more likely to liquidate the business, reporting the loss. Book value is used as a surrogate for expected future normal earnings in the case of profit reporting companies and in the case of loss reporting firms as a substitute for liquidation value. Anderson and Alexandros (1999) also argue that investment in intangible assets indirectly increases the value of tangible assets and contributes significantly to ensuring debt repayment capacity and cash liquidity.

Choi, Kwon & Lobo (2000) report that the intangible asset value reported in the balance sheet is related to the enterprise value. Hand (2001a) focused on the biotechnology industry and analyzed the value relevance of R&D investment, the growth rate of R&D investment, the size of R&D investment, the value of human assets, and the history of the company. According to his empirical analysis, the relationship between corporate value and accounting information in the biotechnology industry is not linear, unlike manufacturing firms. In addition, he showed that research and development expenditure and its growth rate showed a significant positive correlation with corporate value, while corporate history and human resources did not affect corporate value increase. Additionally, Hand (2001b) reports that the PB ratio is increasing due to the increase in R&D investment in technology, the growth of the US economy, and the stock market surge. R&D investment continued to increase in the 1990s compared to the 1980s, while investment in advertising and tangible assets continued to decline in the 1990s compared to the 1980s.

Jung et al. (2003) analyzes whether there is a difference in the usefulness of accounting information related to research and development expenses between the information and communication industry with high R&D concentration and the companies belonging to the non-information and communication industry. According to their research results, in the case of non-information and telecommunication companies, only the development cost information processed by the assets showed value relevance. However, both the processed ordinary development cost information and the development cost information processed by assets showed a positive correlation with the enterprise value. They also report that, in the case of companies belonging to the information and communication industry, the explanatory power of the enterprise value of profit and book value was significantly increased in the case of capitalization compared to the case of the ordinary development cost.

Baek (2003) analyzes the industry-specific differences in the value relevance of R&D expenditures. He points out that the relationship between R&D expenditure and stock price is significantly positive in information and communication technology firms, but not in non-financial manufacturing firms.

Baek and Jeong (2004) analyze the effect of capitalization of intangible asset expenditures on the value relevance of these expenditures. As a result of the analysis, it is found that the continuous coefficient of excess profit calculated by capitalization of intangible asset expenditure is larger than the continuous coefficient of excess profit calculated by costing the expenditure. As a result of analyzing the relationship between intangible assets and other items in the balance sheet, Jung et al. (2004) report that intangible assets are not as relevant as other items. However, per the detailed analysis of intangible assets, it is reported that there is a difference in enterprise value relevance by item.

Kwon and Choi (2005) verify that accounting earning is the main variable explaining firm value in the KOSDAQ capital market, while book value of loss firms is a better explanatory variable of firm value. Additionally, they report empirical results that the value relevance of accounting earnings and book value differs depending on the size of the firm and the debt ratio.

Kim, et al., (2006) analyze the value relevance of tangible assets, investment assets, and intangible assets in listed manufacturing industries. They report that tangible assets, investment assets, and intangible assets all have a significantly positive (+) impact on firm value.

Kim et al., (2009) analyze the value relevance of accounting information, focusing on the asset composition ratio of the balance sheet among the financial characteristics of publicly traded manufacturing companies. In the case of liquid assets ratio, firms with a bigger median value had a negative and those with a median value had a positive effect. For investment assets, tangible and intangible assets, the positive effect of firm is also analyzed. They argue that liquidity improves as the liquidity ratio increases, but profitability may deteriorate as the proportion of noncurrent assets such as investment assets, tangible assets, and intangible assets increases.

3. HYPOTHESES AND RESEARCH MODEL

3.1 Research Hypotheses

The purpose of this study is to analyze the value relevance of asset elements, which has been neglected in the valuation research sector so far. This study divides the components of assets into current assets, noncurrent assets, quick current assets, inventory assets, tangible assets, intangible assets, investment assets, and other noncurrent assets and analyzes the value relevance of each asset element. To this end, this study attempts to set the following hypothesis.

H1: The current assets are significantly related to the enterprise value in the Korean capital market.

H2: The noncurrent assets are significantly related to the enterprise value in the Korean capital market.

H3: The quick current assets are significantly related to the enterprise value in the Korean capital market.

H4: The inventory assets are significantly related to the enterprise value in the Korean capital market.

H5: The tangible assets are significantly related to the enterprise value in the Korean capital market.

H6: The intangible assets are significantly related to the enterprise value in the Korean capital market.

H7: The investment assets are significantly related to the enterprise value in the Korean capital market.

H8: The other noncurrent assets are significantly related to the enterprise value in the Korean capital market.

3.2. Empirical Model

This study uses the Olson (1995) valuation model to analyze the value relevance of asset elements, such as current assets, noncurrent assets, quick current assets, inventory assets, tangible assets, intangible assets, investment assets, and other noncurrent assets. Figure 1 shows the conceptual framework of this study.
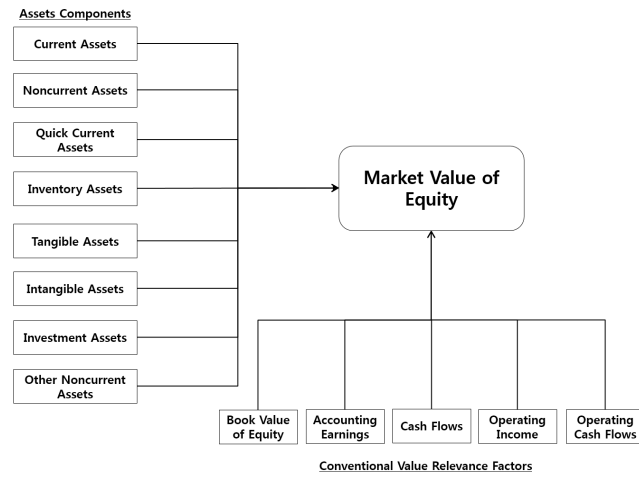
Figure 1. *Conceptual Framework*

To analyze the value relevance of asset elements, this study modifies the Olson (1995) model as follows and verifies the hypothesis of this study.

$$\frac{MV_{i,t}}{S_{i,t}} = a_0 + a_1 \frac{BV_{i,t-1}}{S_{i,t}} + a_2 \frac{NI_{i,t}}{S_{i,t}} + \varepsilon_{i,t} \tag{1}$$

$$\frac{MV_{i,t}}{S_{i,t}} = a_0 + a_1 \frac{BV_{i,t-1}}{S_{i,t}} + a_2 \frac{OI_{i,t}}{S_{i,t}} + \varepsilon_{i,t} \tag{2}$$

$$\frac{MV_{i,t}}{S_{i,t}} = a_0 + a_1 \frac{BV_{i,t-1}}{S_{i,t}} + a_2 \frac{CF_{i,t}}{S_{i,t}} + \varepsilon_{i,t} \tag{3}$$

$$\frac{MV_{i,t}}{S_{i,t}} = a_0 + a_1 \frac{BV_{i,t-1}}{S_{i,t}} + a_2 \frac{OCF_{i,t}}{S_{i,t}} + \varepsilon_{i,t} \tag{4}$$

$$\frac{MV_{i,t}+L_{i,t}}{S_{i,t}} = a_0 + a_1 \frac{CU_{i,t}}{S_{i,t}} + a_2 \frac{NCU_{i,t}}{S_{i,t}} + a_3 \frac{NI_{i,t}}{S_{i,t}} + \varepsilon_{i,t} \tag{5}$$

$$\frac{MV_{i,t}+L_{i,t}}{S_{i,t}} = a_0 + a_1 \frac{CU_{i,t}}{S_{i,t}} + a_2 \frac{NCU_{i,t}}{S_{i,t}} + a_3 \frac{OI_{i,t}}{S_{i,t}} + \varepsilon_{i,t} \tag{6}$$

$$\frac{MV_{i,t}+L_{i,t}}{S_{i,t}} = a_0 + a_1 \frac{CU_{i,t}}{S_{i,t}} + a_2 \frac{NCU_{i,t}}{S_{i,t}} + a_3 \frac{CF_{i,t}}{S_{i,t}} + \varepsilon_{i,t} \tag{7}$$

$$\frac{MV_{i,t}+L_{i,t}}{S_{i,t}} = a_0 + a_1 \frac{CU_{i,t}}{S_{i,t}} + a_2 \frac{NCU_{i,t}}{S_{i,t}} + a_3 \frac{OCF_{i,t}}{S_{i,t}} + \varepsilon_{i,t} \tag{8}$$

$$\frac{MV_{i,t}+L_{i,t}}{S_{i,t}} = a_0 + a_1 \frac{QU_{i,t}}{S_{i,t}} + a_2 \frac{IN_{i,t}}{S_{i,t}} + a_3 \frac{TA_{i,t}}{S_{i,t}} + a_4 \frac{INTA_{i,t}}{S_{i,t}} + a_5 \frac{INV_{i,t}}{S_{i,t}} + a_6 \frac{ONCU_{i,t}}{S_{i,t}} + a_7 \frac{NI_{i,t}}{S_{i,t}} + \varepsilon_{i,t} \tag{9}$$

$$\frac{MV_{i,t}+L_{i,t}}{S_{i,t}} = a_0 + a_1 \frac{QU_{i,t}}{S_{i,t}} + a_2 \frac{IN_{i,t}}{S_{i,t}} + a_3 \frac{TA_{i,t}}{S_{i,t}} + a_4 \frac{INTA_{i,t}}{S_{i,t}} + a_5 \frac{INV_{i,t}}{S_{i,t}} + a_6 \frac{ONCU_{i,t}}{S_{i,t}} + a_7 \frac{CF_{i,t}}{S_{i,t}} + \varepsilon_{i,t} \tag{10}$$

$$\frac{MV_{i,t}+L_{i,t}}{S_{i,t}} = a_0 + a_1 \frac{QU_{i,t}}{S_{i,t}} + a_2 \frac{IN_{i,t}}{S_{i,t}} + a_3 \frac{TA_{i,t}}{S_{i,t}} + a_4 \frac{INTA_{i,t}}{S_{i,t}} + a_5 \frac{INV_{i,t}}{S_{i,t}} + a_6 \frac{ONCU_{i,t}}{S_{i,t}} + a_7 \frac{OI_{i,t}}{S_{i,t}} + \varepsilon_{i,t} \tag{11}$$

$$\frac{MV_{i,t}+L_{i,t}}{S_{i,t}} = a_0 + a_1 \frac{QU_{i,t}}{S_{i,t}} + a_2 \frac{IN_{i,t}}{S_{i,t}} + a_3 \frac{TA_{i,t}}{S_{i,t}} + a_4 \frac{INTA_{i,t}}{S_{i,t}} + a_5 \frac{INV_{i,t}}{S_{i,t}} + a_6 \frac{ONCU_{i,t}}{S_{i,t}} + a_7 \frac{OCF_{i,t}}{S_{i,t}} + \varepsilon_{i,t} \tag{12}$$

Here, $MV_{i,t}$=market value of equity 3 months after in year t, $L_{i,t}$=book value of liability in the end of year t; $CU_{i,t}$=book value of currents assets in the end of year t; $NCU_{i,t}$=book value of noncurrent assets in the end of year t; $ONCU_{i,t}$=book value of other noncurrent assets in the end of year t; $QU_{i,t}$=book value of quick currents assets in the end of year t; $IN_{i,t}$=book value of inventory in the end of year t; $TA_{i,t}$=book value of tangible assets in the end of year t; $INTA_{i,t}$=book value of intangible assets in the end of year t; $INV_{i,t}$= book value of investment assets in the end of year t; $S_{i,t}$=total sales in period t; $NI_{i,t}$=net income in period t; $OI_{i,t}$=operating income in period t; $CF_{i,t}$=total cash flows in period t; $OCF_{i,t}$=operating income in period t; ε =error term.

The research equations assume linear functions between dependent and independent variables, and all variables are standardized by total sales in period t. To examine precise influence of asset elements on firm value, this paper splits sample data into various subgroups according to characteristics of individual companies.

4. EMPIRICAL ANALYSIS

4.1 Sample Selection

The sample used in the empirical analysis of this study is restricted to companies that meet the following requirements targeting public companies listed in the database of the KIS-VALUE Korea Investors Service Inc. from 2000 to 2015.

(1) It should be a settlement corporation at the end of December.

(2) It will not be included in the financial sector, including banking, investment banking, securities, and insurance. This is because the financial industry is largely different from other industries in terms of sales activities, financial structure, or accounting policies. Therefore, the sample companies included in this study include the food, construction, and transportation industries, while focusing on the manufacturing industry.

(3) It has never been incorporated into the management subject matter during the sample period. This requirement is due to the continuity of the data because the stocks classified as managed stock tend to be sluggish or even suspended for a certain period.

(4) All data necessary for empirical analysis should be available.

(5) It has Cook's Distance smaller than 0.5 and absolute value of studentized residuals smaller than 1.

Table 1. *Sample data selection*

Sample companies from KIS-VALUE DB over the period from 2000 to 2015 (firm-year)	35,040
Minus (-):	19,770
Companies that are not finalized at the end of December Companies not in the financial industry (banking, investment, insurance) Companies that are not subject to stock exchange management Companies whose capital has not been impaired Companies that cannot obtain financial data from the KIS-VALUE DB	
Total sample Companies (firm-year)	15,270

4.2. Empirical Results

4.2.1 Descriptive Statistics

Table 2 shows descriptive statistics of dependent and independent variables of this study.

Table 2. *Descriptive statistics of variables*

Number of samples	Variable	Median	Standard Deviation	Minimum	Maximum
	$\dfrac{MV_{i,t} + L_{i,t}}{S_{i,t}}$	2.4234	18.5816	0.0186	1,611.9500
	$\dfrac{MV_{i,t}}{S_{i,t}}$	1.6718	12.1386	0.00184	1036.0000
	$\dfrac{BV_{i,t-1}}{S_{i,t}}$	1.3204	31.3437	0.0006	3,754.9900
	$\dfrac{CU_{i,t}}{S_{i,t}}$	0.8158	6.2262	0.0112	458.4562
	$\dfrac{NCU_{i,t}}{S_{i,t}}$	1.1142	10.2583	0.0053	736.0194
	$\dfrac{QU_{i,t}}{S_{i,t}}$	0.6552	5.4213	0.0107	441.9642
	$\dfrac{IN_{i,t}}{S_{i,t}}$	0.1606	1.1398	0.0000	81.7080
15,270	$\dfrac{TA_{i,t}}{S_{i,t}}$	0.5560	5.7736	0.0000	570.5005
	$\dfrac{INTA_{i,t}}{S_{i,t}}$	0.0619	0.3527	0.0000	21.9199
	$\dfrac{INV_{i,t}}{S_{i,t}}$	0.4460	6.0709	0.0000	480.9371
	$\dfrac{ONCU_{i,t}}{S_{i,t}}$	0.0503	0.3525	0.0000	33.5896
	$\dfrac{NI_{i,t}}{S_{i,t}}$	-0.0035	1.1213	-30.9292	101.9306
	$\dfrac{CF_{i,t}}{S_{i,t}}$	0.0132	0.6400	-29.6971	60.3915
	$\dfrac{OI_{i,t}}{S_{i,t}}$	0.0299	0.2113	-8.3295	1.0000
	$\dfrac{OCF_{i,t}}{S_{i,t}}$	0.0653	1.0561	-14.4442	68.8339

Note. $MV_{i,t}$=market value of equity 3 months after in year t, $L_{i,t}$=book value of liability in the end of year t; $CU_{i,t}$=book value of currents assets in the end of year t; $NCU_{i,t}$=book value of noncurrent assets in the end of year t; $QU_{i,t}$=book value of quick currents assets in the end of year t; $IN_{i,t}$=book value of inventory in the end of year t; $TA_{i,t}$=book value of tangible assets in the end of year t; $INTA_{i,t}$=book value of intangible assets in the end of year t; $INV_{i,t}$=book value of investment assets in the end of year t; $ONCU_{i,t}$=book value of other noncurrent assets in the end of year t; $S_{i,t}$=total sales in period t; NIi,t=net income in period t;

$OI_{i,t}$=operating income in period t; $CF_{i,t}$=total cash flows in period t; $OCF_{i,t}$=operating income in period t.

4.2.2 Correlation Analysis

This paper performs three Pearson correlation analyses on the main variables of research models to predict the degree and directions of value influence. The correlation results can help predict the value influence directions of independent variables before regression analysis.

Table 3 presents correlation results between the market value of equity and independent variables, which are used in empirical model 1-4, such as book value of equity, net income, cash flows, operating income, and operating cash flows. The correlation results display that cash flows are negatively correlated to the market value of equity and book value of equity at the 1% level of significance respectively.

This study verifies the possibility of multicollinearity that can make the variance of the regression coefficient unstable and difficult to interpret due to the high correlation between the independent variables. The VIF (Variance Inflation Factor) value indicating the possibility of multicollinearity is less than 2.0 in regression analysis of research model 1, 2, 3, and 4; therefore, the possibility of multicollinearity is very low.

Table 3. *Pearson correlation for variables of model 1-4*

Variables	$\frac{MV_{i,t}}{S_{i,t}}$	$\frac{BV_{i,t-1}}{S_{i,t}}$	$\frac{NI_{i,t}}{S_{i,t}}$	$\frac{CF_{i,t}}{S_{i,t}}$	$\frac{OI_{i,t}}{S_{i,t}}$	$\frac{OCF_{i,t}}{S_{i,t}}$
$\frac{MV_{i,t}}{S_{i,t}}$	1	0.27236	0.18332	-0.12249	0.48536	0.79675
		<.0001	<.0001	<.0001	<.0001	<.0001
$\frac{BV_{i,t-1}}{S_{i,t}}$		1	0.0688	-0.03742	0.14164	0.19792
			<.0001	<.0001	<.0001	<.0001
$\frac{NI_{i,t}}{S_{i,t}}$			1	0.27753	-0.20761	0.33987
				<.0001	<.0001	<.0001
$\frac{OI_{i,t}}{S_{i,t}}$				1	0.02923	0.12884
					0.0003	<.0001
$\frac{CF_{i,t}}{S_{i,t}}$					1	0.32348
						<.0001
$\frac{OCF_{i,t}}{S_{i,t}}$						1

1) Variable definition: refer to Table 2

Table 4 shows correlation results between dependent variable and independent variables, which are included in empirical model 5-8, such as book value of equity, current assets, noncurrent assets, cash flows, operating income, and operating cash flows. The results show current and noncurrent assets are positively correlated to other variables except operating income at the 1% level of significance respectively.

In Study Model 6, the VIF value is less than 7.0 and in Study Models 7 and 8, the VIF value is less than 2.0. This means that the likelihood of multiple collinearity among the variables used in study models 6, 7, and 8 is low.

Table 4. *Pearson correlation for variables of model 5-8*

Variables	$\frac{MV_{i,t} + L_{i,t}}{S_{i,t}}$	$\frac{CU_{i,t}}{S_{i,t}}$	$\frac{NCU_{i,t}}{S_{i,t}}$	$\frac{NI_{i,t}}{S_{i,t}}$	$\frac{OI_{i,t}}{S_{i,t}}$	$\frac{CF_{i,t}}{S_{i,t}}$	$\frac{OCF_{i,t}}{S_{i,t}}$
$\frac{MV_{i,t} + L_{i,t}}{S_{i,t}}$	1	0.94064	0.90782	0.19947	-0.09386	0.51426	0.86742
		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001

Variables						
$\frac{CU_{i,t}}{S_{i,t}}$	1	0.90794	0.40149	-0.07045	0.42398	0.85534
		<.0001	<.0001	<.0001	<.0001	<.0001
$\frac{NCU_{i,t}}{S_{i,t}}$		1	0.35822	-0.04604	0.47874	0.81815
			<.0001	<.0001	<.0001	<.0001
$\frac{NI_{i,t}}{S_{i,t}}$			1	0.27753	-0.20761	0.33987
				<.0001	<.0001	<.0001
$\frac{OI_{i,t}}{S_{i,t}}$				1	0.02923	0.32348
					0.0003	<.0001
$\frac{CF_{i,t}}{S_{i,t}}$					1	0.12884
						<.0001
$\frac{OCF_{i,t}}{S_{i,t}}$						1

1) Variable definition: refer to Table 2

Table 5 shows correlation results between the dependent variable and independent variables that are included in empirical model 9-12, such as quick current assets, inventory assets, tangible assets, intangible assets, investments assets, other noncurrent assets, net income, cash flows, operating income, and operating cash flows. The result shows that operating income is negatively correlated to dependent variable and independent variables of asset elements. Moreover, cash flow has negative correlations with intangible assets and investment assets at the 1% level of significance respectively. All VIF values are below 2.0 in research models 9, 10, 11, and 12.0; this means that the likelihood of multicollinearity among the variables used in models 9, 10, 11, and 12 is very low.

Table 5. *Pearson correlation for variables of model 9-12*

Variables	$\frac{MV_{i,t}+L_{i,t}}{S_{i,t}}$	$\frac{QU_{i,t}}{S_{i,t}}$	$\frac{IN_{i,t}}{S_{i,t}}$	$\frac{TA_{i,t}}{S_{i,t}}$	$\frac{INTA_{i,t}}{S_{i,t}}$	$\frac{INV_{i,t}}{S_{i,t}}$	$\frac{ONCU_{i,t}}{S_{i,t}}$	$\frac{NI_{i,t}}{S_{i,t}}$	$\frac{OI_{i,t}}{S_{i,t}}$	$\frac{CF_{i,t}}{S_{i,t}}$	$\frac{OCF_{i,t}}{S_{i,t}}$
$\frac{MV_{i,t}+L_{i,t}}{S_{i,t}}$	1	0.94113	0.66185	0.74724	0.53934	0.77565	0.28154	0.19947	-0.09386	0.51426	0.86742
		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
$\frac{QU_{i,t}}{S_{i,t}}$		1	0.65342	0.67759	0.47538	0.87079	0.2439	0.37893	-0.07207	0.47086	0.82938
			<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
$\frac{IN_{i,t}}{S_{i,t}}$			1	0.54976	0.48817	0.41219	0.19778	0.39079	-0.04206	0.07641	0.72747
				<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
$\frac{TA_{i,t}}{S_{i,t}}$				1	0.34334	0.42789	0.19725	0.28494	-0.00819	0.22626	0.8016
					<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
$\frac{INTA_{i,t}}{S_{i,t}}$					1	0.26065	0.19192	0.07884	-0.29037	-0.00986	0.42595
						<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
$\frac{INV_{i,t}}{S_{i,t}}$						1	0.33441	0.32499	-0.04831	0.59522	0.58389
							<.0001	<.0001	<.0001	<.0001	<.0001
$\frac{ONCU_{i,t}}{S_{i,t}}$							1	0.08151	-0.00832	-0.01504	0.19754
								<.0001	<.0001	0.0632	<.0001
$\frac{NI_{i,t}}{S_{i,t}}$								1	0.27753	-0.20761	0.33987
									<.0001	<.0001	<.0001
$\frac{OI_{i,t}}{S_{i,t}}$									1	0.02923	0.32348
										0.0003	<.0001

			1	0.12884
$\frac{CF_{i,t}}{S_{i,t}}$				<.0001
$\frac{OCF_{i,t}}{S_{i,t}}$			1	

1) Variable definition: refer to Table 2

4.2.3 Tests on the Value Influence of Book Value and Performance Variables: Model 1, 2, 3, 4

Before testing the impact of asset elements on business value, this study examines the influence of performance variables such as net income, operating income, cash flows, and operating cash flows in listed Korean Stock Markets over the period of 2000-2015. Table 6 presents net income, cash flows, and operating cash flows are positively related to market value of equity while operating income has a negative relationship with dependent variable at the 1 % level of significance.

Table 6. *The Value Influence of Book Value and Performance Variables*

Variables & Expected Sign		Total Sample (15,270 firm-year: 2000-2015)			
Variables	Expected Sign	Model 1	Model 2	Model 3	Model 4
Intercept	?	1.68571***	1.87363***	1.66089***	1.69987***
$\frac{BV_{i,t-1}}{S_{i,t}}$	+	0.75057***	0.61460***	0.63226***	0.54640***
$\frac{NI_{i,t}}{S_{i,t}}$	+	0.61634***			
$\frac{OI_{i,t}}{S_{i,t}}$	+		-2.3288***		
$\frac{CF_{i,t}}{S_{i,t}}$	+			2.80857***	
$\frac{OCF_{i,t}}{S_{i,t}}$	+				0.48193***
ΣYD		Included	Included	Included	Included
ΣIND		Included	Included	Included	Included
F Value		663.52***	251.42***	243.43***	239.58***
Adj R-Sq		0.4892	0.2657	0.2596	0.2571
Number of sample used		15,222	15,226	15,209	15,165

1) Variable definition: refer to Table 2

2) Model 1: $\frac{MV_{it}}{S_{i,t}} = a_0 + a_1 \frac{BV_{i,t-1}}{S_{i,t}} + a_2 \frac{NI_{i,t}}{S_{i,t}} + \varepsilon_{i,t}$,

3) Model 2: $\frac{MV_{it}}{S_{i,t}} = a_0 + a_1 \frac{BV_{i,t-1}}{S_{i,t}} + a_2 \frac{OI_{i,t}}{S_{i,t}} + \varepsilon_{i,t}$,

4) Model 3: $\frac{MV_{it}}{S_{i,t}} = a_0 + a_1 \frac{BV_{i,t-1}}{S_{i,t}} + a_2 \frac{CF_{i,t}}{S_{i,t}} + \varepsilon_{i,t}$,

5) Model 4: $\frac{MV_{it}}{S_{i,t}} = a_0 + a_1 \frac{BV_{i,t-1}}{S_{i,t}} + a_2 \frac{OCF_{i,t}}{S_{i,t}} + \varepsilon_{i,t}$

6) Sample data used in this test are after excluding samples that have Cook's Distance greater than 0.5 and absolute value of studentized residuals greater than 1.

7) *: $p < 0.1$, **: $p < 0.05$, ***: $p < 0.01$

4.2.4 Tests on the Value Influence of Asset elements: Current and Noncurrent assets

This study investigates the value influence of asset elements such as current and noncurrent assets. Table 7 shows that current and noncurrent assets have a positive association with dependent variable at the

1 % level of significance, whereas net income, operating income, and operating cash flows are negatively related to the dependent variable.

In all of the analytical models 5 through 8, current assets show higher value relevance than noncurrent assets. In addition, current assets also show higher value relevance than accounting earnings, operating income, cash flows, and operating cash flows.

Table 7. *The value influence of current and noncurrent assets: Total sample*

Variables & Expected Sign		Total Sample (15,270 firm-year: 2000-2015)			
Variables	Expected Sign	Model 5	Model 6	Model 7	Model 8
Intercept	?	0.88226***	0.89420***	1.08877***	1.00048***
$\frac{CU_{i,t}}{S_{i,t}}$	+	1.99833***	0.02255***	1.75463***	1.66885***
$\frac{NCU_{i,t}}{S_{i,t}}$	+	0.55537***	0.01034***	0.54239***	0.68586***
$\frac{NI_{i,t}}{S_{i,t}}$	+	-1.47564***			
$\frac{OI_{i,t}}{S_{i,t}}$	+		-1.05113***		
$\frac{CF_{i,t}}{S_{i,t}}$	+			1.35220***	
$\frac{OCF_{i,t}}{S_{i,t}}$	+				-0.25187***
ΣYD		Included	Included	Included	Included
ΣIND		Included	Included	Included	Included
F Value		33,143.9***	1,158.06***	9,221.05***	1060.19***
Adj R-Sq		0.9805	0.6366	0.9332	0.6163
Number of sample used		15,147	15,191	15,183	15,167

1) Variable definition: refer to Table 2

2) Model 5: $\frac{MV_{it}+L_{it}}{S_{i,t}} = a_0 + a_1\frac{CU_{it}}{S_{i,t}} + a_2\frac{NCU_{it}}{S_{i,t}} + a_3\frac{NI_{it}}{S_{i,t}} + \varepsilon_{i,t}$,

3) Model 7: $\frac{MV_{it}+L_{it}}{S_{i,t}} = a_0 + a_1\frac{CU_{it}}{S_{i,t}} + a_2\frac{NCU_{it}}{S_{i,t}} + a_3\frac{OI_{it}}{S_{i,t}} + \varepsilon_{i,t}$,

4) Model 6: $\frac{MV_{it}+L_{it}}{S_{i,t}} = a_0 + a_1\frac{CU_{it}}{S_{i,t}} + a_2\frac{NCU_{it}}{S_{i,t}} + a_3\frac{CF_{it}}{S_{i,t}} + \varepsilon_{i,t}$

5) Model 8: $\frac{MV_{it}+L_{it}}{S_{i,t}} = a_0 + a_1\frac{CU_{it}}{S_{i,t}} + a_2\frac{NCU_{it}}{S_{i,t}} + a_3\frac{OCF_{it}}{S_{i,t}} + \varepsilon_{i,t}$

6) Sample data used in this test are after excluding samples that have Cook's Distance greater than 0.5 and absolute value of studentized residuals greater than 1.

7) *: $p < 0.1$, **: $p < 0.05$, ***: $p < 0.01$

Table 8 shows the results of analyzing the relationship between the value of current assets and the value of noncurrent assets according to the stock market (KOSPI vs. KOSDAQ). The KOSPI market is Korea's first stock market opened in 1956. It is the oldest stock market in Korea, the standard of listing is tricky, and stocks of large and excellent corporations are being traded. KOSDAQ (Korea Securities Dealers Automated Quotations) is a Korean stock market established in 1996. It is a benchmark of the Nasdaq (NASDAQ) market, centered on high technology stocks, and is a market in which regulatory measures are separate from the securities market. The creation of the KOSDAQ was established to allow Small & Medium firms and venture companies to better finance their business in the stock market.

The R-square, which indicates the extent to which independent variables explain the dependent variable, is between 0.55 and 0.59 in the KOSPI group and 0.60 to 0.65 in the KOSDAQ group. All independent variables have a statistically significant relationship with firm value at the 1% significance level. In particular, current assets have a higher impact on firm value than noncurrent assets in both the KOSPI and KOSDAQ groups, and show higher value relevance than performance variables such as accounting earnings, operating income, cash flows and operating cash flows.

Table 8. The value influence of current and noncurrent assets: KOSPI vs. KOSDAQ

Variables & Expected Sign		Total Sample (15,270 firm-year)							
		KOSPI Market(6,979 firm-year)				KOSDAQ Market(8,291 firm-year)			
Variables	Expected Sign	Model 5	Model 6	Model 7	Model 8	Model 5	Model 6	Model 7	Model 8
Intercept	?	0.72953***	0.76410***	0.80420***	0.84938***	1.09550***	2.01151***	1.09036***	2.04906***
$\frac{CU_{it}}{S_{i,t}}$	+	1.17339***	1.26415***	1.20096***	1.17267***	1.87724***	1.62282***	1.79405***	1.56604***
$\frac{NCU_{it}}{S_{i,t}}$	+	0.76313***	0.74176***	0.70541***	0.74483***	0.71212***	0.06092***	0.80143***	0.12505***
$\frac{NI_{it}}{S_{i,t}}$	+	-0.71620***				-1.08450***			
$\frac{OI_{it}}{S_{i,t}}$	+		-0.03053				-2.77187***		
$\frac{CF_{it}}{S_{i,t}}$	+			1.23813***				0.94376***	
$\frac{OCF_{it}}{S_{i,t}}$	+				-0.72541***				0.25076***
ΣYD									
ΣIND									
F Value		430.55***	402.50***	397.40***	382.34***	609.4***	640.58***	546.10***	556.03***
Adj R-Sq		0.5876	0.5704	0.5671	0.5575	0.6306	0.6422	0.6046	0.6089
Number of sample used		6,936	6,956	6,962	6,962	8,195	8,197	8,200	8,201

1) Variable definition: refer to Table 2

2) Model 5: $\frac{MV_{it}+L_{it}}{S_{i,t}} = a_0 + a_1 \frac{CU_{it}}{S_{i,t}} + a_2 \frac{NCU_{it}}{S_{i,t}} + a_3 \frac{NI_{it}}{S_{i,t}} + \varepsilon_{i,t}$,

3) Model 7: $\frac{MV_{it}+L_{it}}{S_{i,t}} = a_0 + a_1 \frac{CU_{it}}{S_{i,t}} + a_2 \frac{NCU_{it}}{S_{i,t}} + a_3 \frac{OI_{it}}{S_{i,t}} + \varepsilon_{i,t}$,

4) Model 6: $\frac{MV_{it}+L_{it}}{S_{i,t}} = a_0 + a_1 \frac{CU_{it}}{S_{i,t}} + a_2 \frac{NCU_{it}}{S_{i,t}} + a_3 \frac{CF_{it}}{S_{i,t}} + \varepsilon_{i,t}$

5) Model 8: $\frac{MV_{it}+L_{it}}{S_{i,t}} = a_0 + a_1 \frac{CU_{it}}{S_{i,t}} + a_2 \frac{NCU_{it}}{S_{i,t}} + a_3 \frac{OCF_{it}}{S_{i,t}} + \varepsilon_{i,t}$

6) Sample data used in this test are after excluding samples that have Cook's Distance greater than 0.5 and absolute value of studentized residuals greater than 1.

7) *: $p < 0.1$, **: $p < 0.05$, ***: $p < 0.01$

Table 9 shows the results of analyzing the corporate value relevance of current assets and noncurrent assets by the size of the firm (Big vs. Small & Medium). Here, Big companies should be larger than the size of Small & Medium companies stipulated by the Basic Law of Small & Medium Enterprises, and there should be nothing corresponding to the Act on Promotion of Medium-Sized Enterprises Growth. However, the financial and insurance businesses are considered to be large corporations even if they are not limited to cross-shareholding companies, if they are outside the scope of the Basic Act for Small and Medium Enterprises. All other companies are regarded as Small & Medium Enterprises.

The R-square, which indicates the extent to which independent variables explain the dependent variable, is between 0.630 and 0.993 in the Big firm group and 0.630 to 0.650 in the Small & Medium company group. Similar to the results in Table. 8, all independent variables have a statistically significant relationship with firm value at the 1% significance level. In particular, current assets have a higher impact on firm value than noncurrent assets in both the Big firm and Small & Medium company groups, and show higher value relevance than performance variables such as accounting earnings, operating income, cash flows and operating cash flows.

Table 9. *The value influence of current and noncurrent assets: Big firm vs. Small & Medium firm*

Variables & Expected Sign		Total Sample (15,270 firm-year)							
		Big firm (8,837 firm-year)				Small & Medium firm (6,433 firm-year)			
Variables	Expected Sign	Model 5	Model 6	Model 7	Model 8	Model 5	Model 6	Model 7	Model 8
Intercept	?	0.52266***	0.28851***	0.70413***	0.83153***	0.80649***	0.81334***	0.71729***	0.74607***
$\frac{CU_{i,t}}{S_{i,t}}$	+	2.09035***	1.69296***	1.51411***	1.03500***	2.24347***	2.26236***	2.35028***	2.32484***
$\frac{NCU_{i,t}}{S_{i,t}}$	+	0.46993***	0.77293***	0.56011***	0.43733***	0.99687***	1.01503***	1.05622***	1.02935***
$\frac{NI_{i,t}}{S_{i,t}}$	+	-1.35103***				-0.51553***			
$\frac{OI_{i,t}}{S_{i,t}}$	+		2.02302***				-0.64922***		
$\frac{CF_{i,t}}{S_{i,t}}$	+			2.04796***				0.24321***	
$\frac{OCF_{i,t}}{S_{i,t}}$	+				3.74391***				-0.52447***
ΣYD									
ΣIND									
F Value		51563.8***	352819***	1058.54***	1366.07***	486.89***	486.81***	538.69***	494.26***
AdjR-Sq		0.9926	0.9892	0.7339	0.7808	0.6375	0.6376	0.6605	0.6410
Number of sample used		8,804	8,819	8,821	8,814	6,355	6,353	6,357	6,356

1) Variable definition: refer to Table 2

2) Model 5: $\frac{MV_{it}+L_{it}}{S_{i,t}} = a_0 + a_1 \frac{CU_{it}}{S_{i,t}} + a_2 \frac{NCU_{it}}{S_{i,t}} + a_3 \frac{NI_{it}}{S_{i,t}} + \varepsilon_{i,t}$,

3) Model 7: $\frac{MV_{it}+L_{it}}{S_{i,t}} = a_0 + a_1 \frac{CU_{it}}{S_{i,t}} + a_2 \frac{NCU_{it}}{S_{i,t}} + a_3 \frac{OI_{it}}{S_{i,t}} + \varepsilon_{i,t}$,

4) Model 6: $\frac{MV_{it}+L_{it}}{S_{i,t}} = a_0 + a_1 \frac{CU_{it}}{S_{i,t}} + a_2 \frac{NCU_{it}}{S_{i,t}} + a_3 \frac{CF_{it}}{S_{i,t}} + \varepsilon_{i,t}$

5) Model 8: $\frac{MV_{it}+L_{it}}{S_{i,t}} = a_0 + a_1 \frac{CU_{it}}{S_{i,t}} + a_2 \frac{NCU_{it}}{S_{i,t}} + a_3 \frac{OCF_{it}}{S_{i,t}} + \varepsilon_{i,t}$

6) Sample data used in this test are after excluding samples that have Cook's Distance greater than 0.5 and absolute value of studentized residuals greater than 1.

7) *: p < 0.1, **: p < 0.05, ***: p < 0.01

Table 10 shows the results of analyzing the corporate value relevance of current assets and noncurrent assets by company's technology level (High technology vs. Low technology). In this study, the distinction criteria between high technology and low technology follow the classification standard of Himmelberg and Petersen (1994). Himmelberg and Petersen (1994) classify chemical, pharmaceutical, machinery, electrical equipment, and telecommunications industries into high-tech industries, while all other industries are classified as low technology industries.

The R-square, which indicates the extent to which independent variables account for dependent variables, is between 0.62 and 0.66 for the High technology group and between 0.67 and 0.99 for the Low technology group.

Similar to the results in Table 8 and Table 9, all of the independent variables show a statistically significant relationship with the firm value at the 1% significance level. In particular, current assets have a higher impact on corporate value than noncurrent assets in both high technology and low technology groups, showing higher value relevance than accounting variables such as accounting earnings, operating income, cash flows and operating cash flows.

Table 10. *The value influence of current and noncurrent assets: High-Tech firm vs. Low-Tech firm*

Variables & Expected Sign		Total Sample (15,270 firm-year)							
		High-Tech firm (7,501 firm-year)				Low-Tech firm (7,769 firm-year)			
Variables	Expected Sign	Model 5	Model 6	Model 7	Model 8	Model 5	Model 6	Model 7	Model 8
Intercept	?	0.45483***	0.33550***	0.37022***	0.39924***	0.82150***	0.91330***	1.16540***	1.17689***
$\frac{CU_{i,t}}{S_{i,t}}$	+	2.51114***	2.52692***	2.42027***	2.48744***	2.03677***	1.78431***	1.64579***	1.34521***
$\frac{NCU_{i,t}}{S_{i,t}}$	+	0.97562***	1.03838***	0.98938***	1.04751***	0.51170***	0.67574***	0.52458***	0.68799***
$\frac{NI_{i,t}}{S_{i,t}}$	+	-1.22987***				-1.34356***			
$\frac{OI_{i,t}}{S_{i,t}}$	+		-0.17750				-0.60303***		
$\frac{CF_{i,t}}{S_{i,t}}$	+			1.00835***				0.88456***	
$\frac{OCF_{i,t}}{S_{i,t}}$	+				-0.68919***				-0.13040
ΣYD									
ΣIND									
F Value		663.19***	599.15***	667.24***	615.54***	32752.0***	18,564.8***	786.56***	707.82***
Adj R-Sq		0.6520	0.6287	0.6533	0.6349	0.9899	0.9822	0.7001	0.6777
Number of sample used		7,423	7,420	7,425	7,423	7,720	7,747	7,741	7,731

1) Variable definition: refer to Table 2

2) Model 5: $\frac{MV_{it}+L_{it}}{S_{i,t}} = a_0 + a_1\frac{CU_{it}}{S_{i,t}} + a_2\frac{NCU_{it}}{S_{i,t}} + a_3\frac{NI_{it}}{S_{i,t}} + \varepsilon_{i,t}$,

3) Model 7: $\frac{MV_{it}+L_{it}}{S_{i,t}} = a_0 + a_1\frac{CU_{it}}{S_{i,t}} + a_2\frac{NCU_{it}}{S_{i,t}} + a_3\frac{OI_{it}}{S_{i,t}} + \varepsilon_{i,t}$,

4) Model 6: $\frac{MV_{it}+L_{it}}{S_{i,t}} = a_0 + a_1\frac{CU_{it}}{S_{i,t}} + a_2\frac{NCU_{it}}{S_{i,t}} + a_3\frac{CF_{it}}{S_{i,t}} + \varepsilon_{i,t}$

5) Model 8: $\frac{MV_{it}+L_{it}}{S_{i,t}} = a_0 + a_1\frac{CU_{it}}{S_{i,t}} + a_2\frac{NCU_{it}}{S_{i,t}} + a_3\frac{OCF_{it}}{S_{i,t}} + \varepsilon_{i,t}$

6) Sample data used in this test are after excluding samples that have Cook's Distance greater than 0.5 and absolute value of studentized residuals greater than 1.

7) *: $p < 0.1$, **: $p < 0.05$, ***: $p < 0.01$

4.2.4 Tests on the Value Influence of Current and Noncurrent Asset elements: Quick current assets, Inventory Assets, Tangible Assets, Intangible Assets, Investment Assets, Other Noncurrent Assets

This paper examines the value influence of asset elements such as quick current assets, inventory assets, tangible assets, intangible assets, investment assets, and other noncurrent assets. Table 11 displays that every asset element has the positive association with the dependent variable at the 1 % level of significance in every model (9-12). Similar to the results of Tables 8, 9 and 10, Accounting earnings, operating income, and operating cash flows are negatively related to the dependent variable.

The results show that intangible assets among the various components of assets have the greatest effect on firm value, followed by quick current assets, other noncurrent assets, inventory assets, intangible assets, and investment assets.

Table 11. *The value influence of quick current assets, inventory assets, tangible assets, intangible assets, investment assets, and other noncurrent assets: Total sample*

Variables & Expected Sign		Total Sample (15,270 firm-year)			
Variables	Expected Sign	Model 9	Model 10	Model 11	Model 12
Intercept	?	0.74707***	0.68311***	0.49715***	0.77266***
$\frac{QU_{i,t}}{S_{i,t}}$	+	1.73680***	1.90763***	2.04353***	1.62471***
$\frac{IN_{i,t}}{S_{i,t}}$	+	0.89802***	0.87486***	0.99503***	0.55956***
$\frac{TA_{i,t}}{S_{i,t}}$	+	0.86998***	0.92194***	0.84905***	0.88944***
$\frac{INTA_{i,t}}{S_{i,t}}$	+	3.83239***	4.95752***	4.66185***	5.26066***
$\frac{INV_{i,t}}{S_{i,t}}$	+	0.45648***	0.42164***	0.38273***	0.51502***
$\frac{ONCU_{i,t}}{S_{i,t}}$	+	1.74513***	1.00952***	1.22433***	1.55368***
$\frac{NI_{i,t}}{S_{i,t}}$	+	-0.89042***			
$\frac{OI_{i,t}}{S_{i,t}}$	+		-0.06466***		
$\frac{CF_{i,t}}{S_{i,t}}$	+			1.85971***	
$\frac{OCF_{i,t}}{S_{i,t}}$	+				-0.02243***
ΣYD		Included	Included	Included	Included
ΣIND		Included	Included	Included	Included
F Value		1,160.27***	4107.08***	1180.14***	1454.11***
Adj R-Sq		0.6742	0.8795	0.6780	0.7212
Number of sample used		15,129	15,186	15,119	15,165

1) Variable definition: refer to Table 2

2) Model 9: $\frac{MV_{it}+L_{it}}{S_{it}} = a_0 + a_1 \frac{QU_{it}}{S_{it}} + a_2 \frac{IN_{i,t}}{S_{it}} + a_3 \frac{TA_{it}}{S_{it}} + a_4 \frac{INTA_{i,t}}{S_{it}} + a_5 \frac{INV_{it}}{S_{it}} + a_6 \frac{ONCU_{it}}{S_{it}} + a_7 \frac{NI_{i,t}}{S_{it}} + \varepsilon_{i,t}$

3) Model 10: $\frac{MV_{it}+L_{it}}{S_{it}} = a_0 + a_1 \frac{QU_{it}}{S_{it}} + a_2 \frac{IN_{i,t}}{S_{it}} + a_3 \frac{TA_{it}}{S_{it}} + a_4 \frac{INTA_{i,t}}{S_{it}} + a_5 \frac{INV_{it}}{S_{it}} + a_6 \frac{ONCU_{it}}{S_{it}} + a_7 \frac{OI_{i,t}}{S_{it}} + \varepsilon_{i,t}$

4) Model 11: $\frac{MV_{it}+L_{it}}{S_{it}} = a_0 + a_1 \frac{QU_{it}}{S_{it}} + a_2 \frac{IN_{i,t}}{S_{it}} + a_3 \frac{TA_{it}}{S_{it}} + a_4 \frac{INTA_{i,t}}{S_{it}} + a_5 \frac{INV_{it}}{S_{it}} + a_6 \frac{ONCU_{it}}{S_{it}} + a_7 \frac{CF_{i,t}}{S_{it}} + \varepsilon_{i,t}$

5) Model 12: $\frac{MV_{it}+L_{it}}{S_{it}} = a_0 + a_1 \frac{QU_{it}}{S_{it}} + a_2 \frac{IN_{i,t}}{S_{it}} + a_3 \frac{TA_{it}}{S_{it}} + a_4 \frac{INTA_{i,t}}{S_{it}} + a_5 \frac{INV_{it}}{S_{it}} + a_6 \frac{ONCU_{it}}{S_{it}} + a_7 \frac{OCF_{i,t}}{S_{it}} + \varepsilon_{i,t}$

6) Sample data used in this test are after excluding samples that have Cook's Distance greater than 0.5 and absolute value of studentized residuals greater than 1.

7) *: $p < 0.1$, **: $p < 0.05$, ***: $p < 0.01$

Table 12 shows the results of analyzing the corporate value relevance of the quick current assets, the inventory assets, the tangible assets, the intangible assets, the investment assets, and other noncurrent assets according to the stock market (KOSPI vs. KOSDAQ).

The R-square, which indicates the extent to which independent variables explain the dependent variable, is between 0.66 and 0.68 in the KOSPI group and 0.75 to 0.78 in the KOSDAQ group.

Most of the independent variables show a statistically significant relationship with the firm value at the 1% significance level. In particular, intangible assets have a higher impact on corporate value than

other assets in both the KOSPI and KOSDAQ groups and show higher value relevance than performance variables such as accounting earnings, operating income, cash flows and operating cash flows.

In the KOSPI group, intangible assets have the largest effect on firm value, followed by other noncurrent assets, quick current assets, investment assets, tangible assets, and inventory assets. The KOSDAQ group also shows the largest impact of intangible assets on firm value, followed by quick current assets, tangible assets, inventory assets, and other noncurrent assets.

Table 12. *The value influence of quick current assets, inventory assets, tangible assets, intangible assets, investment assets, and other noncurrent assets: KOSPI vs. KOSDAQ*

Variables & Expected Sign		Total Sample (15,270 firm-year)							
		KOSPI Market(6,979 firm-year)				KOSDAQ Market(8,291 firm-year)			
Variables	Expected Sign	Model 9	Model 10	Model 11	Model 12	Model 9	Model 10	Model 11	Model 12
Intercept	?	0.58991***	0.54106***	0.56174***	0.57733***	0.73542***	0.81810***	0.81079***	0.91046***
$\frac{QU_{i,t}}{S_{i,t}}$	+	1.16137***	1.17396***	1.12486***	1.17299***	1.92486***	1.77432***	1.70362***	1.79591***
$\frac{IN_{i,t}}{S_{i,t}}$	+	0.56300***	0.62260***	0.50566***	0.61062***	0.66451***	0.86041***	0.88546***	0.75205***
$\frac{TA_{i,t}}{S_{i,t}}$	+	0.70340***	0.68617***	0.73377***	0.63862***	1.02593***	1.05340***	1.05096***	1.05396***
$\frac{INTA_{i,t}}{S_{i,t}}$	+	4.14646***	4.33432***	3.95001***	4.25167***	5.27547***	5.56279***	5.50492***	5.27779***
$\frac{INV_{i,t}}{S_{i,t}}$	+	0.74362***	0.74988***	0.79132***	0.71356***	0.49053***	0.58121***	0.61698***	0.49379***
$\frac{ONCU_{i,t}}{S_{i,t}}$	+	2.28052***	2.51638***	2.30267***	2.51527***	0.09452	-0.44538	-0.15251	-0.03709
$\frac{NI_{i,t}}{S_{i,t}}$	+	-0.18786***				-0.61674***			
$\frac{OI_{i,t}}{S_{i,t}}$	+		0.52247***				-0.04347***		
$\frac{CF_{i,t}}{S_{i,t}}$	+			-0.63132***				0.93179***	
$\frac{OCF_{i,t}}{S_{i,t}}$	+				0.08788***				-1.11783***
ΣYD									
ΣIND									
F Value		515.89***	522.09***	529.49***	505.29***	1002.88***	1057.51***	921.46***	1077.11***
Adj R-Sq		0.6675	0.6701	0.6734	0.6629	0.7676	0.7767	0.7520	0.7799
Number of sample used		6,925	6,927	6,921	6,925	8193	8,200	8,195	8,202

1) Variable definition: refer to Table 2

2) Model 9: $\frac{MV_{i,t}+L_{i,t}}{S_{i,t}} = a_0 + a_1\frac{QU_{i,t}}{S_{i,t}} + a_2\frac{IN_{i,t}}{S_{i,t}} + a_3\frac{TA_{i,t}}{S_{i,t}} + a_4\frac{INTA_{i,t}}{S_{i,t}} + a_5\frac{INV_{i,t}}{S_{i,t}} + a_6\frac{ONCU_{i,t}}{S_{i,t}} + a_7\frac{NI_{i,t}}{S_{i,t}} + \varepsilon_{i,t}$

3) Model 10: $\frac{MV_{i,t}+L_{i,t}}{S_{i,t}} = a_0 + a_1\frac{QU_{i,t}}{S_{i,t}} + a_2\frac{IN_{i,t}}{S_{i,t}} + a_3\frac{TA_{i,t}}{S_{i,t}} + a_4\frac{INTA_{i,t}}{S_{i,t}} + a_5\frac{INV_{i,t}}{S_{i,t}} + a_6\frac{ONCU_{i,t}}{S_{i,t}} + a_7\frac{OI_{i,t}}{S_{i,t}} + \varepsilon_{i,t}$

4) Model 11: $\frac{MV_{i,t}+L_{i,t}}{S_{i,t}} = a_0 + a_1\frac{QU_{i,t}}{S_{i,t}} + a_2\frac{IN_{i,t}}{S_{i,t}} + a_3\frac{TA_{i,t}}{S_{i,t}} + a_4\frac{INTA_{i,t}}{S_{i,t}} + a_5\frac{INV_{i,t}}{S_{i,t}} + a_6\frac{ONCU_{i,t}}{S_{i,t}} + a_7\frac{CF_{i,t}}{S_{i,t}} + \varepsilon_{i,t}$

5) Model 12: $\frac{MV_{i,t}+L_{i,t}}{S_{i,t}} = a_0 + a_1\frac{QU_{i,t}}{S_{i,t}} + a_2\frac{IN_{i,t}}{S_{i,t}} + a_3\frac{TA_{i,t}}{S_{i,t}} + a_4\frac{INTA_{i,t}}{S_{i,t}} + a_5\frac{INV_{i,t}}{S_{i,t}} + a_6\frac{ONCU_{i,t}}{S_{i,t}} + a_7\frac{OCF_{i,t}}{S_{i,t}} + \varepsilon_{i,t}$

6) Sample data used in this test are after excluding samples that have Cook's Distance greater than 0.5 and absolute value of studentized residuals greater than 1.

7) *: $p < 0.1$, **: $p < 0.05$, ***: $p < 0.01$

Table 13 shows the results of analyzing the firm value relevance of the quick current assets, the inventory assets, the tangible assets, the intangible assets, the investment assets, and other noncurrent assets according to the firm size (Big firm vs. Small & Medium firm).

The R-square value, which indicates the extent to which independent variables explain the dependent variable, is between 0.63 and 0.95 in the Big firm group and 0.76 to 0.77 in the Small & Medium firm group. All independent variables have a statistically significant relationship with firm value at the 1%

significance level. Particularly, intangible assets have a higher impact on firm value than other assets in both the Big firm and the Small & Medium firm group, and show higher value relevance than the performance variables accounting earnings, operating income, cash flows and operating cash flows.

In the Big firm group, the effect of intangible assets on firm value is the largest, followed by quick current assets, other noncurrent assets, inventory assets, tangible assets, and investment assets. As in Big companies, Small & Medium firm groups have the largest impact on firm value of intangible assets, followed by quick current assets, other noncurrent assets, tangible assets, investment assets and inventory assets.

Table 13. *The value influence of quick current assets, inventory assets, tangible assets, intangible assets, investment assets, and other noncurrent assets: Big firm vs. Small & Medium firm*

Variables & Expected Sign		Total Sample (15,270 firm-year)							
		Big firm (8,837 firm-year)				Small & Medium firm (6,433 firm-year)			
Variables	Expected Sign	Model 9	Model 10	Model 11	Model 12	Model 9	Model 10	Model 11	Model 12
Intercept	?	0.49812***	0.32027***	0.12341***	0.40798***	0.76715***	0.72592***	0.69283***	0.79257***
$\frac{QU_{i,t}}{S_{i,t}}$	+	1.44736***	1.53483***	2.12888***	1.19827***	2.19110***	2.19561***	2.15674***	2.21714***
$\frac{IN_{i,t}}{S_{i,t}}$	+	1.30739***	1.45816***	0.70501***	1.09317***	0.44174***	0.71607***	0.71609***	0.45976***
$\frac{TA_{i,t}}{S_{i,t}}$	+	0.85826***	1.02413***	0.86304***	0.85350***	0.90729***	0.90002***	0.91143***	0.89898***
$\frac{INTA_{i,t}}{S_{i,t}}$	+	2.40703***	4.03930***	5.33513***	3.85304***	4.70365***	4.77592***	4.76771***	4.67629***
$\frac{INV_{i,t}}{S_{i,t}}$	+	0.45192***	0.39568***	0.36108***	0.63953***	0.71065***	0.75448***	0.78347***	0.71335***
$\frac{ONCU_{i,t}}{S_{i,t}}$	+	1.31098***	0.80133***	1.14665***	1.19810***	1.74968***	2.08985***	2.18787***	1.61235***
$\frac{NI_{i,t}}{S_{i,t}}$	+	0.18795***				-0.29978***			
$\frac{OI_{i,t}}{S_{i,t}}$	+		2.02937***				0.04246		
$\frac{CF_{i,t}}{S_{i,t}}$	+			2.31352***				0.40319***	
$\frac{OCF_{i,t}}{S_{i,t}}$	+				1.63656***				-0.53000***
ΣYD									
ΣIND									
F Value		876.92***	6138.72***	554.79***	764.79***	768.80***	765.55***	772.26***	782.57***
Adj R-Sq		0.7291	0.9495	0.6304	0.7007	0.7653	0.7645	0.7661	0.7685
Number of sample used		8,787	8,816	8,766	8,808	6,359	6,359	6,360	6,358

1) Variable definition: refer to Table 2

2) Model 9: $\frac{MV_{it}+L_{it}}{S_{i,t}} = a_0 + a_1 \frac{QU_{it}}{S_{i,t}} + a_2 \frac{IN_{it}}{S_{i,t}} + a_3 \frac{TA_{it}}{S_{i,t}} + a_4 \frac{INTA_{it}}{S_{i,t}} + a_5 \frac{INV_{it}}{S_{i,t}} + a_6 \frac{ONCU_{it}}{S_{i,t}} + a_7 \frac{NI_{it}}{S_{i,t}} + \varepsilon_{i,t}$

3) Model 10: $\frac{MV_{it}+L_{it}}{S_{i,t}} = a_0 + a_1 \frac{QU_{it}}{S_{i,t}} + a_2 \frac{IN_{it}}{S_{i,t}} + a_3 \frac{TA_{it}}{S_{i,t}} + a_4 \frac{INTA_{it}}{S_{i,t}} + a_5 \frac{INV_{it}}{S_{i,t}} + a_6 \frac{ONCU_{it}}{S_{i,t}} + a_7 \frac{OI_{it}}{S_{i,t}} + \varepsilon_{i,t}$

4) Model 11: $\frac{MV_{it}+L_{it}}{S_{i,t}} = a_0 + a_1 \frac{QU_{it}}{S_{i,t}} + a_2 \frac{IN_{it}}{S_{i,t}} + a_3 \frac{TA_{it}}{S_{i,t}} + a_4 \frac{INTA_{it}}{S_{i,t}} + a_5 \frac{INV_{it}}{S_{i,t}} + a_6 \frac{ONCU_{it}}{S_{i,t}} + a_7 \frac{CF_{it}}{S_{i,t}} + \varepsilon_{i,t}$

5) Model 12: $\frac{MV_{it}+L_{it}}{S_{i,t}} = a_0 + a_1 \frac{QU_{it}}{S_{i,t}} + a_2 \frac{IN_{it}}{S_{i,t}} + a_3 \frac{TA_{it}}{S_{i,t}} + a_4 \frac{INTA_{it}}{S_{i,t}} + a_5 \frac{INV_{it}}{S_{i,t}} + a_6 \frac{ONCU_{it}}{S_{i,t}} + a_7 \frac{OCF_{it}}{S_{i,t}} + \varepsilon_{i,t}$

6) Sample data used in this test are after excluding samples that have Cook's Distance greater than 0.5 and absolute value of studentized residuals greater than 1.

7) *: p < 0.1, **: p < 0.05, ***: p < 0.01

Table 14 shows the results of analyzing the impact of quick current assets, inventory assets, tangible assets, investment assets, and other noncurrent assets on firm value according to firm's technology level (High-Tech firm vs. Low-Tech firm).

The R-square value, which indicates the extent to which the independent variables account for the dependent variables, is between 0.69 and 0.71 in the High technology group and between 0.77 and 0.78 in the Low technology group.

The result indicate that there is a statistically significant relationship between the independent variables and the firm value at the significance level of 5% or 1%. In particular, intangible assets have the highest impact on corporate value among other assets components in both the high technology group and the low technology group, and show higher value relevance than the performance variables accounting earnings, operating income, cash flows, and operating cash flows.

In the high technology group, intangible assets have the largest effect on firm value, followed by quick current assets, other noncurrent assets, tangible assets, and investment assets, and inventory assets. As with the high technology group, the low technology group has the largest impact on the firm value of intangible assets, followed by quick current assets, other assets, other assets, and noncurrent assets.

Table 14. *The value influence of quick current assets, inventory assets, tangible assets, intangible assets, investment assets, and other noncurrent assets: High-Tech firm vs. Low-Tech firm*

Variables & Expected Sign		Total Sample (15,270 firm-year)							
		High-Tech firm (7,501 firm-year)				Low-Tech firm (7,769 firm-year)			
Variables	Expected Sign	Model 9	Model 10	Model 11	Model 12	Model 9	Model 10	Model 11	Model 12
Intercept	?	0.40098***	0.35209***	0.35177***	0.37706***	0.94810***	0.88334***	0.60109***	0.90853***
$\frac{QU_{i,t}}{S_{i,t}}$	+	2.43126***	2.44185***	2.34599***	2.46902***	1.61265***	1.66573***	1.65943***	1.43428***
$\frac{IN_{i,t}}{S_{i,t}}$	+	0.24797**	0.33734***	0.42932***	0.28927**	1.33002***	1.47833***	1.14120***	1.43541***
$\frac{TA_{i,t}}{S_{i,t}}$	+	0.89176***	0.93779***	0.95212***	0.96165***	0.84753***	0.90237***	0.79184***	0.87577***
$\frac{INTA_{i,t}}{S_{i,t}}$	+	4.92770***	4.96417***	4.95304***	4.62586***	2.14813***	2.91464***	4.13105***	3.12546***
$\frac{INV_{i,t}}{S_{i,t}}$	+	0.63604***	0.65632***	0.65564***	0.68218***	0.46138***	0.48484***	0.46301***	0.61719***
$\frac{ONCU_{i,t}}{S_{i,t}}$	+	1.18561***	1.25223***	1.17240***	0.97324***	0.16214**	0.40572***	3.07091***	-0.24837***
$\frac{NI_{i,t}}{S_{i,t}}$	+	-0.14013**				-0.61278***			
$\frac{OI_{i,t}}{S_{i,t}}$	+		0.38861***				-0.15527*		
$\frac{CF_{i,t}}{S_{i,t}}$	+			0.93142***				0.81995***	
$\frac{OCF_{i,t}}{S_{i,t}}$	+				-0.27875***				0.15491**
ΣYD									
ΣIND									
F Value		666.25***	659.25***	694.77***	720.00***	698.39	3,238.57***	12,759.4***	12556.2***
Adj R-Sq		0.6915	0.6892	0.7004	0.7078	0.7096	0.9187	0.9782	0.9777
Number of sample used		7,420	7,423	7421	7,420	7,706	7,741	7,695	7,727

1) Variable definition: refer to Table 2

2) Model 9: $\frac{MV_{i,t}+L_{i,t}}{S_{i,t}} = a_0 + a_1 \frac{QU_{i,t}}{S_{i,t}} + a_2 \frac{IN_{i,t}}{S_{i,t}} + a_3 \frac{TA_{i,t}}{S_{i,t}} + a_4 \frac{INTA_{i,t}}{S_{i,t}} + a_5 \frac{INV_{i,t}}{S_{i,t}} + a_6 \frac{ONCU_{i,t}}{S_{i,t}} + a_7 \frac{NI_{i,t}}{S_{i,t}} + \varepsilon_{i,t}$

3) Model 10: $\frac{MV_{i,t}+L_{i,t}}{S_{i,t}} = a_0 + a_1 \frac{QU_{i,t}}{S_{i,t}} + a_2 \frac{IN_{i,t}}{S_{i,t}} + a_3 \frac{TA_{i,t}}{S_{i,t}} + a_4 \frac{INTA_{i,t}}{S_{it}} + a_5 \frac{INV_{i,t}}{S_{i,t}} + a_6 \frac{ONCU_{i,t}}{S_{i,t}} + a_7 \frac{OI_{i,t}}{S_{i,t}} + \varepsilon_{i,t}$

4) Model 11: $\frac{MV_{i,t}+L_{i,t}}{S_{i,t}} = a_0 + a_1 \frac{QU_{i,t}}{S_{i,t}} + a_2 \frac{IN_{i,t}}{S_{i,t}} + a_3 \frac{TA_{i,t}}{S_{i,t}} + a_4 \frac{INTA_{i,t}}{S_{it}} + a_5 \frac{INV_{i,t}}{S_{i,t}} + a_6 \frac{ONCU_{i,t}}{S_{i,t}} + a_7 \frac{CF_{i,t}}{S_{i,t}} + \varepsilon_{i,t}$

5) Model 12: $\frac{MV_{i,t}+L_{i,t}}{S_{i,t}} = a_0 + a_1 \frac{QU_{i,t}}{S_{i,t}} + a_2 \frac{IN_{i,t}}{S_{i,t}} + a_3 \frac{TA_{i,t}}{S_{i,t}} + a_4 \frac{INTA_{i,t}}{S_{it}} + a_5 \frac{INV_{i,t}}{S_{i,t}} + a_6 \frac{ONCU_{i,t}}{S_{i,t}} + a_7 \frac{OCF_{i,t}}{S_{i,t}} + \varepsilon_{i,t}$

6) Sample data used in this test are after excluding samples that have Cook's Distance greater than 0.5 and absolute value of studentized residuals greater than 1.

7) *: $p < 0.1$, **: $p < 0.05$, ***: $p < 0.01$

Table 15 summarizes the results of the analysis of the whole sample and the sub-sample from the research models 5 to 8 that analyzed the relationship between the firm value of current assets and noncurrent assets. The summary of results show that the relationship between corporate value of current assets is greater than that of noncurrent assets.

Table 15. *Comparison of the value influence of current assets and noncurrent assets in every sample group*

Sample Group	Current Assets	Noncurrent Assets
Total	①	②
KOSPI	①	②
KOSDAQ	①	②
Big	①	②
Small & Medium	①	②
High-Tech	①	②
Low-Tech	①	②

* Comparative value relevance degree: ①>②

Table 16 summarizes the results of analyzing the effects of the quick current assets, the inventory assets, the tangible assets, the intangible assets, the investment assets, and other noncurrent assets on the corporate value according to the stock market, firm size, and technology level.

As Table 16 shows, intangible assets have the highest value relevance among assets components in both the total sample and the subgroup samples. Quick current assets have the second highest value relevance among the asset elements except for the KOSPI group. In addition, other noncurrent assets have the third highest value relevance except KOSDAQ and Low-Tech group. Tangible assets and inventory assets are almost similar, with tangible assets at forth and inventory assets at fifth place. Finally, investment assets are ranked fifth or sixth in most subgroups.

Table 16. *Comparison of the value influence of quick current assets, inventory assets, tangible assets, intangible assets, investment assets, and other noncurrent assets in every sample group*

Sample Group	Quick Current Assets	Inventory Assets	Tangible Assets	Intangible Assets	Investment Assets	Other Noncurrent Assets
Total	②	④	④	①	⑥	③
KOSPI	③	⑥	⑤	①	④	②
KOSDAQ	②	④	③	①	⑤	⑥
Big	②	④	⑤	①	⑥	③
Small & Medium	②	⑥	④	①	⑤	③
High-Tech	②	⑥	④	①	⑤	③
Low-Tech	②	③	④	①	⑤	⑥

* Comparative value relevance degree: ①>②>③>④>⑤>⑥

5. CONCLUSIONS

There have been many studies on the usefulness of accounting information over the past several decades. Some have argued that the usefulness of accounting information has been seriously degraded.

Other studies have reported inconsistent results that the usefulness of accounting information has increased. However, most of these studies focused on accounting earning, operating income, and cash flow, which are the main components of profit and loss statements and cash flow statements, and are relatively less interested in asset elements on the balance sheet.

For this reason, this study examines the effects of asset elements on firm value during the period from 2000 to 2015 for companies listed on the Korean stock market. This study uses the Ohlson (1995) valuation model to examine the main components of assets in the balance sheet: current assets, noncurrent assets, quick current assets, inventories, tangible assets, intangible assets, investment assets, and other noncurrent assets to verify whether there is a significant relationship with the firm value. In particular, this study divides the sample of companies according to the stock market, firm size, and technology level, and try to verify the difference in the value relevance of asset elements depending on the characteristics of the company.

The analysis shows that all asset elements, such as current assets, noncurrent assets, quick current assets, inventory assets, tangible assets, intangible assets, investment assets, and other noncurrent assets have a very positive impact on corporate value. However, net income and operating cash flow have a negative correlation with firm value at the 1% significance level.

The analysis result of dividing the assets into current assets and noncurrent assets show that the relevance of the corporate value of the current assets in both the overall sample and the subgroup samples are larger than the noncurrent assets.

This study also divides the assets into quick current assets, inventory assets, tangible assets, intangible assets, investment assets, and other noncurrent assets, and classifies them according to the stock market, firm size, and technology level. The analysis shows that intangible assets have the highest value relevance in both the overall sample and the subgroup sample. Quick current assets have the second highest value relevance among asset elements except the KOSPI group. Surprisingly, other noncurrent assets have the third highest value relevance except for the KOSDAQ and Low-Tech groups. Tangible assets and inventory assets are almost similar, with tangible assets at forth and inventory assets at fifth place. Finally, investment assets are ranked fifth or sixth in most subgroups.

The results of this study show that the asset element on the balance sheet has a more positive effect on the increase in corporate value than the profitability and cash flow performance variables on the income statement and cash flow statement. The empirical evidence of this study suggests that asset elements should be regarded as major corporate value related variables in Korean stock market. This study also suggests that intangible assets are the most important factors among accounting information should be considered in evaluating firm value.

The results of this study are significant in that investors provide important information that affects corporate value in investing in Korean companies. However, this study has a limit in that the analytical result should be limited to Korea only by analyzing the sample for the empirical analysis only for the companies listed on the Korean stock market. Therefore, it is necessary to expand the follow-up study to foreign countries such as the US, Japan, and China.

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THE DETERMINANTS OF CAPITAL STRUCTURE:
A CASE STUDY OF NEWLY ESTABLISHED FIRMS IN HANOI

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ABSTRACT: *This paper investigates the determinants of capital structure of business start- ups utilizing simultaneously a survey of business owners' characteristics and data collected from financial reports submitted to the taxation authorities of 268 newly established enterprises in Hanoi. The results have indicated that most of the hypotheses are accepted and consistent with relevant theoretical models. However, unlike existing studies on the capital structure of startups in developed nations, the influence of a startup size, profitability, work experience based on relationships prior to starting up a new company, growth orientation and the age of a business are the major determinants of the initial capital structure decision while the asset structure, organizational type, gender, age of owner and education level of business owners does not seem to have a significant impact on the choice of capital structure in the context of transitional economies and financial markets that are not quite developed, such as in Vietnam. The major findings are discussed based on the trade-off theory and the pecking order theory. The article also provides some implications and recommendations for future research.*

Keywords: *Startups, capital structure, performance, crisis, financial leverages*

1. INTRODUCTION

In most countries, besides government subsidies or loans, equity from venture capital funds such as business angels or venture capital funds, the capital structure choices of startups are primarily based on the main sources of capital: the business owners' equity from family, friends and personal savings, his or her loans from banks and suppliers (Huyghebeart, 2004, Rob and Robinson, 2010) to fund assets as well as maintain business operations. Bank credit and commercial credit play an important role for businesses in the first two years of operation (Berger and Udel, 1998; Rob and Robinson, 2010, Ravid and Spiegel, 1997). Research by Huyghebeart et al (2007) also shows that, with the highly value private benefits of control, newly established firms tend to substitute bank credit with commercial credit to avoid the risk of liquidation. However, in developing countries whose financial market is as young as in Vietnam, asymmetric information seems to be more of a serious issue. Therefore, it is difficult for businesses to access formal credit sources due to credit constraints stemming from credit supply (Ravid and Spiegel, 1997), or bias towards startup firms in particular and SMEs in the private sector (Nguyen Van Thang et al 2012) are also considered one the causes of this situation.

In general, the capital structure of newly established firms has different circumstances due to differences in the business cycle. Meanwhile, the establishment of capital structure is based on the availability of credit

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supply, so debt use seems to be more difficult for startups in developing countries. The question is, during the early stage of financing, what are the factors affecting the capital structure of the business? Carrying out this approach, based on the framework of capital structure theory and the findings from existing empirical research, we've developed the hypothesis of the factors influencing capital structure in the context of transition economies from the panel data with a sample size of 269 new enterprises.

These findings help contribute to a richer understanding of capital structure constraints in the cases of newly established firms, which have distinct characteristics of the first stage of business compared to those of mature businesses or listed companies, and large corporations.

2. LITERATURE REVIEW, THEORETICAL BACKGROUND AND METHODOLOGY

2.1. Theoretical background

Although not directly referring to the case of newly established firms, the pecking order theory, agency cost theory and tradeoff theory are significant nonetheless and contribute to the explanation of how decisions having to do with the capital structure of young businesses are made.

The pecking order theory suggests that there is no optimal level of leverage, instead, the level of corporate debt depends on the situation of the business over time. As a result, startups facing restrictions in cash during their early stages of operations will use their debt to cover capital shortages (Miettinen and Virtanen, 2013).

However, the agency cost theory points out that the contradiction between creditors and startups will more likely limit the ability to use debt of young enterprises than old businesses, because from the viewpoint of the owners, incentives of using debt can stimulate young entrepreneurs to make risky investments or have a negative net present value.

The above is explained by Modighiliani and Miller's approach (1958) based on the issue of asymmetric information that influences the initial financial decision and the terms of use of the debt (Ravid and Speiegel, 1997; Huyghebeart et al., 2007) facing the concern that changes in lenders' behavior might lead to creditors' losses when loans are disbursed. Only mature businesses with well-established historical data on debt repayment can possibly access low-cost loans. (Harris and Ravid, 1991). Smaller new businesses containing higher risks will likely receive a smaller amount of debt (Stiglitz and Weiss, 1981; Berger and Udell, 1998).

To reduce the problem of asymmetric information in the relationship between start –ups and debt owners, some studies suggest that it is important to optimize loan contracts by demanding that loans be secured with collateral (Ravid and Soeigle, 1997) or to lend at higher interest rates to hedge against higher probability of default (Berger and Udell, 1998; Huyghebeart and Gutch, 2004).

2.2. Literature review

While the studies on the determinants of capital structure of mature firms have built up a massive amount of documents, the studies on the sample of start ups are fairly scarce. Among many factors examined, four factors including asset structe, firm size, investment opportunities and profitability are considered factors that demonstrate the correlation with leverage of old firms consistently (Rajan and Zingales, 1995; Frank and Goyal, 2004).

In the case of newly established firms, existing studies have shown the role of the above factors in the research models, but the results have not reached an agreement point. According to Ando (1998); Cassar (2004); Sanyal and Mann (2010) and Huyghebeart (2004), firm size and asset structure strongly affect the total leverage, long term leverage, rate of banking debt and external debt (Cassar, 2004). However, Scherr and Sugure (1994)

only agree with the impact of bussiness size on official leverage. The impact of growth opportunities and profitablity on the decisions of capital structure of start ups is recorded by only very few studies.

In addition, new businesses have very little information about history of business operation and these firms are thought to have the most opaque information (Berger and Udell, 1998). These characteristics severely affect the accessibility of official credit resources of new firms because banks lack information to assess loans. In order to overcome this problem, some studies have shown that characteristics of owners could play an important role in the financial decisions of creditors. This approach is derived from the suggestion of Bates (1991) and Ando (1998) that factors such as education levels, work experience, age, gender and start up skills that entrepreneurs acquired before starting up make an impact on business performance of new entrants. Therefore, they are accepted by investors as factors involved to business prospects. In other words, ownership characteristics represent human capital that provides some additional predictive information on explaining the decisions of capital structure of newly established firms besides the elements of the characteristics of the business as mentioned above.

Following that study approach, Meittien and Virtanen (2013) focused on the examination of owner-attribute factors only, in order to illustrate the importance of non-accounting features in explaining the capital structure of new company. However, most other studies have not yet obtained satisfactory answers to the relationship between ownership factors and the level of debt used. In particular, the influence of ownership characteristics on financial leverage differed among different studies. For example, Mittinen and Virtanen (2013); Robb and Robinson (2010); Sanyal and Mann (2010) affirmed the importance of work experience and industry experience to debt use, whereas Cassar (2004); Scherr and Surgrue (1993) found no evidence of how these characteristics have significant effects on the capital structure of newly established firms.

When considering factors such as age and sex, studies have consistently indicated that the owner's age has the opposite effect on the use of debt (Robb and Robinson, 2010; Scherr and Surgue, 1993) and enterprises owned by males tend to use more debt than those operated females.

Industry factor is also examined in a number of existing studies when considering the capital structure of firms in the initial stage of operations. However, the effects of these factors are only significant for individual studies. For example, some studies have shown that new firms operating in the fields of transportation and essential services use more debt than firms in other industries (Scherr and Surger, 1993). Also, high-tech firms tend to use external equity rather than bank loans (Colombo and Grilli, 2005), while firms operating in traditional industries do not use venture capital in the beginning. (Huyghebeart and Gutch, 2004).

As can be seen, in the case of newly established firms, existing studies have attempted to link elements of enterprise ownership and enterprise characteristics to clarify the factors affecting the capital structure during the initial financial period. However, the research on this issue is very scarce, focusing mainly on economically developed countries. Meanwhile, the study of capital structure on the sample of mature businesses cannot represent startups because of the differences in financial demand, debt use and dependence on the supply side during their early stages. In addition, most existing studies that we've got have been carried out a long time ago.

Meanwhile, in developing countries, the startup ecosystem issues are starting to be noticed just recently. The question being posed is that in the current context in developing countries, particularly Vietnam which

has a transition economy, how will the sector of state enterprises establish their initial capital structure, and what are the determinants affecting the capital structure of new entrants. These questions being answered is extremely significant, since understanding the initial choices of capital structure is, on one hand, a basis to testify how decisions of capital structure affect how the business operates and thrives. On the other hand, it provides information on the distributive mechanism of credits of the market, which can be a factor making an impact on the success rates of young businesses, especially in financial markets that are underdeveloped in countries with a transition economy.

2.2. Developing hypotheses and research model

Research based on the frameworks of the static theory of capital structure and the pecking order theory in explanations of elements affecting capital structure for enterprise characteristics including size, asset structure, profitability, growth potential, liquidity and the legal form of the business. In addition, age, gender, and years of experience representing the characteristics of ownership are also examined.

- Hypotheses about elements related to business characteristics

Newly run businesses are considered to be at high risk because of their new entrance, low competitiveness and vulnerability. In addition, with a lack of operational data and transparency of information on financial statements, these businesses face serious asymmetric information problems when accessing loans. Then, according to Titman and Wessel (1998), the size of the business is viewed as a function related to the transaction costs that help reduce the problem of information asymmetry. Therefore, this factor also affects the level of debt that enterprises can access.

Hypothesis 1.1: *Firm size has a positive impact on the leverage of newly established firms*

The agency cost theory (Jensen and Meckling, 1976) illustrates a negative relationship between the use of debt and growth opportunities by the benefit conflict between the creditor and the shareholder. However, according to Huyghebeart (2004), new firms have the advantage of being in control so they are often unwilling to borrow, in order to avoid risk. Loans are considered when businesses are quite sure about the effectiveness of the investment. At the same time, Cassar (2010) study suggests that this problem can be mitigated if young startups use short-term debt instead of long-term debt. Therefore, it is possible to expect a positive relationship between growth potential and the capital structure of the enterprise.

Hypothesis H 1.2: *Growth has a positive impact on capital structure of newly established firms*

The relationship between profitability and the level of debt used in the capital structure of enterprises so far has not reached an agreement on the direction of influence. The tradeoff theory suggests that the profitable firms with a cost of financial exhaustion have lower expectations and can approach benefits of the tax shield from debt. Therefore, businesses will tend to use more debt to take advantage of the tax shield. In contrast, the pecking order theory implies that more profitable businesses will have less debt to reduce the amount of profit they have to share.

In the case of newly established businesses, credit is considered not available in the early stages of the business cycle. At the same time, young businesses in this period also face limited cash-generating capacity (Miettinen and Virtanen, 2013) as well as insufficient cumulative profitability (Berger and Udell, 1998). Consequently, the study argues that tax benefits from debt may not yet be a priority for new businesses during this period. In contrast, discipline from debt can be more significant for profitable businesses, especially those with the serious problem of free cash flow (Jensen and Meckling, 1976). Based on these arguments, in the early stages of operations, in order to increase the likelihood of accumulating profits, more profitable businesses will use more debt.

Hypothesis H1.3: *Profitability has a positive impact on the leverage of newly established firms*

The tangible assets of a business often being referred to as a collateral that secures loans in order to reduce the possible financial losses on creditors are a widely recognized issue. According to Haris and Ravid (1991); Titman and Wessels (1998); Ravid and Spiegel (1997) for businesses having a bigger problem of information asymmetry, the cost of adverse selection will be reduced if the sponsorship agreements are based on the assurance of a particular asset. Thus, in the case of startups, due to the lack of operational history and transparency of information, and the elements that represent commitments of the reduction of risk for investors, the structure of the assets will significantly influence the ability to use debt in the initial capital structure of an enterprise. Therefore, the study proposes

Hypothesis 1.4: *Asset structure has a positive on the leverage of newly established firms*

In terms of liquidity, the static tradeoff theory suggests that firms with poor liquidity may face higher financial costs, given that other factors remain unchanged. Therefore, these businesses should use less debt. At the same time, poor short-term liquidity will harm the parties involved in the business investment. As a result, creditors will limit lending to businesses that lack cash flow. This judgment is also considered appropriate for startups when banks consider lending decisions. Based on this argument, the study suggests an opposite relationship between the liquidity and capital structure of newly established firms..

Hypothesis H1.5: *Liquidity has a negative impact on the leverage in capital structure of newly established firms*

- Hypothesis about the characteristics of ownership

The characteristics of ownership are considered an influence on the initial capital structure decisions of newly established firms. On the one hand, information about the business owner might be able to make up for the lack of information on the history of operation of the business in lenders' decisions. On the other hand, the characteristics of ownership help justify the initial capital structure decision, as such decisions somewhat depend on how willing the business is to take necessary risks. Factors such as age, gender and education levels are also examined in studies on financing new businesses, specifically:

- The older the business owner, the more experience he or she has, and the more considerate he or she is in their financial decisions, the more likely the bank will be willing to give out loans.

- On the education background of the business owner, the study argues that as education contributes to business success for startups or small companies, business owners with higher levels of education might have an easier access to debt and have higher debt level in the capital structure

- Gender is also considered a factor that influences the amount of debt used, suspected to be related to the differences on a person's willingness to take risk. One of the studies suggest that businesses owned by females tend to have a lower level of debt use since they are more reluctant to take risk than their male counterpart.

From the points stated above, the study suggests several hypotheses on the influence of the characteristics of ownership on the decisions of capital structure of new businesses as follows:

Hypothesis H2.1 (a & b): *Business owners with higher levels of education and/or more experience in the same field of business are more likely able to access and use more debt in the initial stage of starting up.*

Hypothesis H2.2 (a & b): *New businesses managed by males or business owners that are older in age have a higher debt ratio in the initial capital structure*

Along with controlling the effects of the industry variable on the initial decisions of capital structure of new businesses, the research model is suggested as follows:

$$CS_{i,t} = \beta0 + \beta1 SIZE + \beta_2 GRO + \beta3 TANG + \beta4 LIQ + + \beta5 PROFIT + \beta6 GEN + \beta7 AGE +$$
$$+ \beta8 EDU + \beta9 EXPR + \varepsilon_{i,t}$$

Bảng 1.2: Variable and measured scale description

N	Variables	Scales	Researches
1	LEV, SLEV, LEV1	Financial leverage of firms i, year t = Total liabilities/ Total assets; short debt/ Total assets and(Loan + credit trade)/Total assets	Harris, Raviv (1991); Huyghebeart, Gucht(2004, 2007); Frank and Goyal (2009); Anchor (2007); Rajan and Zingales (1995);
2	SIZE_TS	Firm size measured using the natural logarithm of total turnover for firm i in year t, expressed in VND	Sanyal and Mann, 2010; Rajan and Zingales, 1995; Huyghebeart and Gucht(2004, 2007; (Robb and Robinson, 2010); Harris, Raviv (1991);
3	GROW	Growth = (Total assets year(t) – Total asset year(t-1))/ Total assets year(t-1)	Chittenden et al (1996); Capenter and Petersen (1998); Margarits and Psillaki (2010)
4	PROFT1	Return on Assets (ROA)= Return after Tax / Total Assets	Rajan and Zingales (1995)
5	TANG	Asset structure = Tangible assets/ Total assets	Frank and Goyal (2009),
6	LIQ	Liquidity = Current Assets/ Short term debt	Chittenden et al (1996)
7	GEND	Gender of owner: A binary variable takes the value of 1 if the owner is female, male takes the value 0.	Cassar (2004); Creesy (1998); Scherr and Sugrue, 1993
8	AGE	Age of entrepreneur at operating year i	Cassar (2004); Creesy (1998); Scherr and Sugrue, 1993
9	EDU	Education level: A binary variable takes the value of 1 if the owner of firms received a degree above the bachelor's, others take the value 0	Cassar (2004); Scherr and Sugrue, 1993
10	EXPR	Working experience = natural logarithm of the total years that the owner of the firm I worked in the same start up sector	Cassar (2004); Scherr and Sugrue, 1993

(Resource: Author's collection)

2.3. Methodology

2.3.1. Sample and data collection

Our first raw data set consists of 312 truly operating new firms that were registered for establishment at the Hanoi Department of Planning and Investment and given a tax registration number by the Hanoi Tax Department in 2010 and observed in the initial 5-year period. We collected a sample including enterprises establised at the same time to ensure greater homogenity in macroeconomic condition at the moment of foundation depending on suggestion given by Huyghebeart & Gutch (2004). The sample was collected using the following method of proportionate stratified sampling depending on the number of firms distributed on every district in Hanoi.

We excluded 38 firms from the original sample include 21 firms had incomplete financial statements or information recorded on these statements, 17 others firms had negative equity, which causes the possibility

of making detorted ROE as well as exaggerating overdose fianancial leverage and 5 others were filtered out of the data set because they had very small total assets (4 firms have less than 500 millions VND) or having outlier authorized equity (one firm with authorized equity of more than 1.000 billion VND). The final sample consits 169 firms with 1614 observations. A sample size used in regression analysis is quite homologous compared to recent studies on startups or small and medium enterprises samples.

Firms in the sample were divided into over six industries (Agriculture, Manufacture, Construction, Service and Trading, Construction Materials and Transportation), based on curent regulations issued by the General Statistic Orgnaization and criteria of industrial classification proposed in the anual enterprise survey reports of VCCI.

3.2.2. Data analysis

We used a package of STATA software version 12 to estimate the regression equations that we proposed above. First off, bivariate relations among variables were explored via examining correlation. Then, we used ordinary least square (OLS) to examine the effect of leverage to business performance. Then, Hausman test was employed to discover which models are more suitable for the data set between Fixed Effects Model (FEM) and Random Effects Model (REM). The result suggests that FEM is suitable for the character of data in this research. The research also examined some necessary test for regressive assumption to ensure the result of regression is blue such as autocorrelation, multicollinearity and heteroskedasticity.

Finally, to validate our research results, the robust option was performed to recalculate standard errors in case the models violate regressive assumptions.

3. RESEARCH RESULTS

3.1. Descriptive statistics on the capital structure of newly established firms

Table 2 provides descriptive statistics on capital structure of newly established firms for our sample. The results show that startups mainly used traditional finance including debts and equity in the initial capital structure.

Unlike new ventures in developed countries, outside equity and sponsor finance from Government did not find in detail report of any firms in the sample. Only two firms report about a leasing in their balance statements. This is also difference with finding about using leasing to compensate credit shortage of startups in the initial years of operation.

Table 2: Descriptive statistics of the capital structure of newly established businesses

Variable	N	mean	p50	sd	min	max	cv
LEV	1614	.4396	.4419	.3121	0	.9994	.7099
SLEV	1614	.4111	.3773	.3099	0	.9994	.7538
LLEV	1614	.0285	0	.1170	0	.9279	3.2368
LEV1	1614	.3375	.2853	.2990	0	.9869	.8860
LEV2	1614	.1543	0	.2330	0	.9322	1.5098
TDTM	1614	.1842	.0935	.2205	0	.9743	1.1972
VCSH	1614	.5603	.5580	.3121	.0005	1	.5570

(Resource: Author's evaluation)

Regarding to different financial resources used in the first initial five years of operate, startups used average finance leverage (LEV) around 44% on total liabilities. The percentage of credit trade is not high, less than 18.5%. Similarity, average bank loan rate (LEV2) also take only approximately 15.5% in which focus mainly in short term debt. Long- term debt takes only 2.8% on total liabilities. This finding indicate capital structure of startups in the sample use percentage of bank loan and credit from suppliers much lower and percentage of equity much higher than peer in developed countries (see also Huyghebeart & Gutch. 2007; Robb & Robinson. 2010).

3.2. Results

The results (Table 2) show that the positive effects of firm size, growth and profitability are consistent on all 3 scales of capital structure including total leverage, short term leverage and outside debt leverage across the research. The increase in factors such as firm size, growth and profitability are factors that cause the overall debt to go up. The coefficients reported for these variables in turn are (0.031), (0.244), and (0.044). This finding is consistent with the majority of studies both in young and mature firms (Frank and Goyal, 2009; Huyghebeart and Gutch, 2004; Cassar, 2004).

Factors related to liquidity and asset structure have a negligible impact on the capital structure of newly established firms presented on the sample, although the dimension of the impact is supported by the majority of the existing studies. The coefficient of liquidity reported is (-0007).

Table 3: Models of factors affecting the capital structure of new businesses

	(1) OLS LEV	(2) FEM LEV	(3) OLS SLEV	(4) FEM SLEV	(5) OLS LEV1	(6) FEM LEV1
SIZE	0.067***	0.031***	0.064***	0.032***	0.065***	0.037***
GROW	0.074***	0.044***	0.074***	0.046***	0.047***	0.039***
PROFT	0.412**	0.244	0.363**	0.273*	0.420**	0.141
TANG	0.000	0.001***	0.0001*	0.001***	0.001***	0.001***
LIQ	-0.000**	-0.001***	-0.000*	-0.001***	-0.000	-0.000**
GEN	-0.025	0.088***	-0.023	-0.051***	0.002	-0.039**
AGE	-0.001	0.001	0.001	0.003	-0.001	0.001
EDU	-0.02	-	-0.031*	-	-0.06***	-0.048
EXPR	0.112***	0.100***	0.071***	0.06*	0.089***	0.077***
_cons	-1.147***	-0.374	-1.096***	-0.441	-1.131***	-0.608**
N	1314	1314	1314	1314	1314	1314
R^2 adjust (%)	29.2	14.79	24.87	10.25	24.73	11.48
Hausman	Prob > chi2(8)(=298.170) =.0000		Prob> chi2(8) (= 53.22) = .0000		Prob > chi2(8) (= 36.85) = .0000	
t statistics in parentheses * p<0.05, ** p<0.01, *** p<0.001						

(Resource: Author's evaluation)

Other findings in the sample of newly established firm is that new businesses are run by males having working experience in the same business sector tend to use more debt, ceteris paribus. These results match the findings of Scherr and Sugrue (1993); Robb and Robinson (2010) stating that female entrepreneurs tend to be more risk- averse, thus using less external debt to finance business operating than male business owners. However, this relationship was not statistically significant (at 5%) in OLS and FE models reported above.

The results also show that there is insufficient evidence to conclude that the age of the entrepreneurs influences the leverage in the early stage of business operation, although the regression analysis result also suggests a positive relationship somewhat similar to that of Cressey (1996) and Cassar (2004). The effect of this factor was not significant (at 5%) in all models.

The effect of the business owner's education background is also examined in the models. However, the results do not provide any evidence that a higher level of education leads to higher levels of debt use. This effect was not statistically significant in all OLS models according to the different scales of capital structure; however, it was determined in the fixed FE models.

4. CONCLUSION AND IMPLICATIONS

In conclusion, the capital structure of newly established enterprises is affected by both side - the credit supply and demand. On the one hand, the choice between debt and equity to finance business operations bases on investment opportunities, profitability as well as risks that enterprises might face with the bankruptcy. On the other hand, capital structure of new entrants is also influenced by the availability of credit in the region or country where the enterprise operates. In addition, the risk tolerance might have certain effects on the capital structure of newly established firms. That is the new factor which is initially identified in this research.

Newly established enterprises find it difficult to access the capital market for a number of reasons, including high cost and the unwillingness of financial institutions to invest in small equity investments. In addition, banks are often reluctant to lend short-term and medium-term loans to newly established small businesses. The main results summarized from the study are as follows:

Firstly, the research show that newly established enterprises depend mainly on retained earnings, equity and internal debt. This is in line with the pecking order theory. It is also consistent with the suggestion from trade-off theory which is demonstrate that newly established small companies have higher risk so they use less debt than other companies (Harris and Ravid, 1991)

Secondly, newly established enterprises tend to use more short-term debt. The result is explained from external investors due to the asymmetric information. These are unobserved factors. Thus, with the indicators that could be established in the model, profitability, business size and growth potential are three factors have positive and considerable effect on debt level in companies measured by total debt ratio, short-term debt and external debt.

Agency theory and Pecking-order theory suggest that, firms with high growth potential and profitability use less debs. However, the equity of new entrants is not available. They have less opportunities to invest in the projects with positive NPV such as mature firms (Ravid and Spiegel, 1997). As the result, new companies with high growth potential and profitability are likely using more debt and mainly short-term debt to mitigate the asymmetric information. (Cassar,2004).

Thirdly, the relationship between capital structure of newly established enterprises and personal finance and ownership characteristics

According to the financial literatures, the asset structure plays an important role in determining the capital structure because tangible assets constitute collateral for the debt. However, the impact of tangible asset on capital structure in the case of Hanoi new established enterprises does not support the opinion mentioned above. In other words, the use of debt in new entrants is less concerned to their investment in tangible assets. This result gave the suggestion about the relationship between the capital structure of

new entrants and the finance of the owners. Besides, it also suggested that the wealth of owners, might be a factor influenced to capital structure of new entrants in the initial stage of business, need to be further examined. In addition, gender and age of the owners in new entrants might be the factors determine the capital structure of new established firms related to the ability of risk tolerance and control on the business. These factors should be examined in further researches.

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CHALLENGES FOR SUSTAINABLE DEVELOPMENT OF VIETNAMESE COMMERCIAL BANKS

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ABSTRACT: *In the process of international integration, Vietnamese commercial banks have to compete with foreign banks not only in domestic market but also in international market. To be accordance with financial integration phase, Vietnam's commercial banking system must stay stable and healthy; increasce branch value; operate efficiently towards sustainable development. A survey was conducted with the managers of 31 joint stock commercial banks on the challenges and solutions that have been implemented in the process of sustainable banking. The results show that commercial banks are committed to sustainable development, focusing on building internal environmental management systems such as energy and resource saving measures, initiating environmental management in bank operation.*

Keywords: *Sustainable banking, challenges, Vietnamese commercial banks.*

1. OVERVIEW OF SUSTAINABLE DEVELOPMENT OF COMMERCIAL BANKS

1.1. Sustainable development approach

The mean of sustainability has many different approaches; the main idea of all the sustainability definitions is, that there is an interaction of three main systems, such as environmental, social and economic. The idea of sustainability gives new thinking to the banking sector, which recognizes the interdependencies of the economic, social, and environmental systems, and the connections between social and environmental challenges. The banks have to put the environmental and social improvement in consideration within their mission about development.

Bouma et al. (2001) defined a sustainable banking that focuses on banks' external impact through its products and services to customers. At this point, sustainable banks only provide their products and services to customers in consideration their impacts on environment and society. Thus, customers whose activities have a negative impact on the environment and society will be rejected. Imeson and Sim (2013) defined sustainable banking based on its impact on stakeholders including shareholders, employees, customers, and the economy. This approach identifies sustainable bank benefits to stakeholders and they must prevent or minimize any undue harm to the bank, social and natural environment.

Hutton and Cox's (2005) sustainability conceptual model shows the interaction of three main systems, such as: environmental, social and economic and criteria for sustainability. The model proposes criteria for assessing the sustainability of each sector of the economy, society and the environment. In addition to the specific criteria, there are also criteria for assessing the overall interaction of these aspects.

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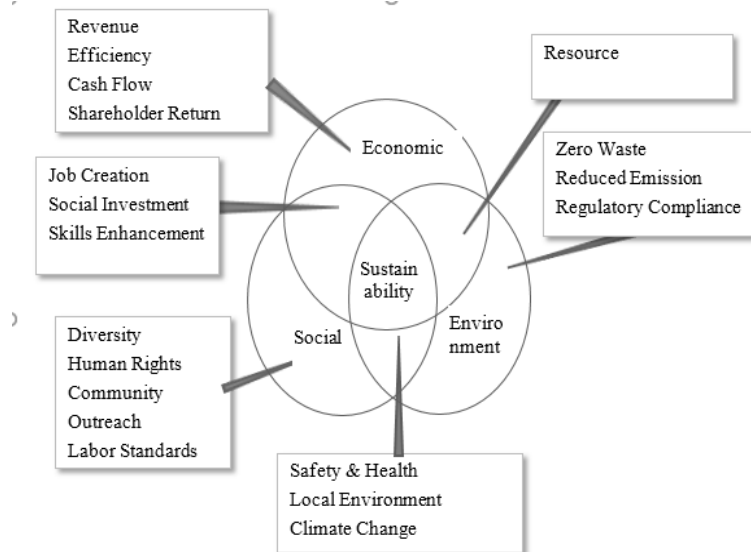
Fig. 1. The conceptual Model of Sustainability

(Source: B. Hutton, D. Cox, 2005)

In the pursuit of sustainable development, the bank needs a comprehensive social and environmental strategy to improve profitability through environmental management and promote social equity in order to benefit all shareholders and community. Sustainable development will increase value of the bank as long as it benefits shareholders, engages customers and creates community consensus.

Each bank's sustainable development strategy is designed and implemented based on its size, market position and performance. The banks' sustainability strategies will change over time and circumstances through its activities and stakeholders in order to determine the short and long term value which is suitable for the banks and its stakeholders (Hutton and Cox, 2005).

1.2 The four phases of sustainable banking

Marcel Jeucken (2001) outlines the four phases of commercial bank development. Most commercial banks will develop in four phases, but some banks ignore the first two phases whereas some banks do not reach the last phase. In the first phase, banks try to ignore regulations on environmental management and protection, until the last stage, the banks do not change the priority target from achieving the highest profitability ratio to improving branding value, balancing the interests of stakeholders. The bank's performance towards long-term values and sustainable development.
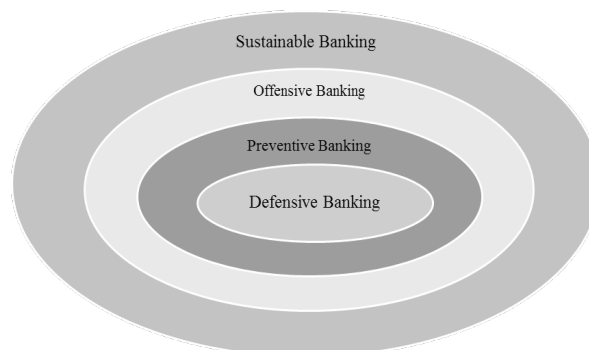
Fig 2. *A typology of banking and sustainable development (Source: Marcel Jeucken, 2001)*

The first phase is defensive banking. The bank is a follower and contests every government measure with respect to the environment and sustainable development since its direct or indirect self-interest is threatened. Cost savings in its internal environmental care are not considered and all environmental laws and regulations are thought to be threats to its business. Banks do not take into account the impacts on environment in financial decision-making process. In this vision, banks consider taking into account the impacts on environment bring no profit but more cost. Jeucken (2001) said this thinking still existed because banks are not full-aware of sustainable development.

The second preventive banking phase is different from the defensive phase in that potential costs savings are identified. Banks start saving cost from bank's internal operations, for example, printing paper on both sides, saving energy and water, using facility effectively. Many banks are working on internal environmental care. In this phase, banks also have an external character (loans and savings products) purely in the sense of limiting risks and investment losses related to environmental risks. So it includes looking into saving costs through fewer loss items as a result of environmental risks in credit extension

The third phase is offensive banking phase, which goes a further step than preventive banking. Banks see new opportunities in consideration environment issues in their business operation. Banks take a bigger step in investment in the environmental technology market. At this phase, banks are more active in seeking for an opportunity to invest in environmental issues to generate profit. The new product about environment is feasible and can compete with bank's traditional products and services. In this vision, banks have taken initiative, approached and integrated environmental issues in their operations.

The last phase is sustainable banking: they will set the prerequisites for all banking operations to be sustainable. At the last phase, the internal activities meet the requirements of sustainable business and in which the external activities (such as lending and investments) are focused on valuing and stimulating sustainability among customers and other entities in society. The starting point is not environment regulations or the market, but the vision regarding the environment, the organization's goal and the role that the organization wants to play in society. Hence, banks have improved their organizational structure to be stable and healthy and balancing interests of stakeholders. The banks integrate social and environmental factors in all of its operations. Sustainable banks provide sustainable products and services to customers and set environmental policies to encourage customers to invest in green technologies and energy projects.

2. CHALLENGES IN IMPLEMENTING SUSTAINABLE BANKING

To assess challenges and measures for the sustainable development of commercial banks, a survey was conducted with 150 managers of 31 commercial banks from deputy manager of department and upward.

2.1 Survey description

The bank managers, who contribute to strategic planning, implementing bank's sustainable development strategy, were asked to assess the implementing and challenges to sustainable development of commercial banks. The majority (above 70%) of the respondents are over 5-year experienced, agreeing with the following statements: 1 - Completely disagree; 2- Slightly Disagree; 3- Agree; 4- Mostly Agree; 5- Completely Agree.

Table 1. *Survey description*

Positions	Quantity	Working experience (years)	
		Above 5 years	**Below 5 years**
Board of directors	10	80%	20%
Manager of Branch	22	72.7%	27.3%
Deputy manager of Branch	28	75%	25%
Manager of department	38	78.9%	21.1%
Deputy manager of department	52	73.08%	26.92%

The results show Vietnamese commercial banks are committed to sustainable development. In particular, the target commitment is mainly to meet the regulation requirements, with the average agreed level of 4.10. Commercial banks have made great efforts to save environmental costs through internal operations and the initial inclusion of environmental issues in lending activities. Jeucken (2001) argues that most banks go through this period because state regulators often directly or indirectly regulate preconditions for banking operations through environmental laws and regulations. During this period, potential profits, risks and costs associated with the environment are integrated into the day-to-day operations of the banks. The banks do not want further actions and policies on environmental issues which could be expected in the near future. This is no longer defensive, but a bit preventive, banks only comply with current environmental regulations, no policy or step beyond environmental regulations.

Table 2. *Sustainable development commitment of commercial banks*

Sustainable development commitment	Completely disagree (%)	Slightly disagree (%)	Agree (%)	Mostly agree (%)	Completely agree (%)	Results
	1	**2**	**3**	**4**	**5**	
No sustainable development commitment	100%	0	0	0	0	**0**
Comply with legal requirements	0	0	18	54	28	**4.10**
Active in implementing sustainable development, searching investment opportunities to gain profit.	0	12	54.67	33.33	0	**3.21**

2.2. Challenges

2.2.1 Sufficient capital for sustainable development

The banking operation is risky, so maintaining a reasonable equity ratio and complying with international practice is important to compensate for loss of shareholders, clients and investors. CAR is an important indicator of the adequacy of commercial banks.

The CAR of banks must be maintained at $\geq 9\%$, determined in accordance with Circular 36/2014/TT-NHNN dated November 20, 2014 on "stipulating minimum safety limits and ratios for transactions performed by credit institutions and branches of foreign banks". CAR is determined by the ratio of equity and net weighted assets. However, by 2020, commercial banks need to maintain a CAR at above 8% as stipulated in Circular No.41/2016/TT-NHNN, whereby the determination of CAR is not based solely on credit risk but also plus 12.5 times the total capital required for market and operational risk provisions. Thus, when applying this Circular, the CAR of banks will decrease significantly in comparison with current calculation.
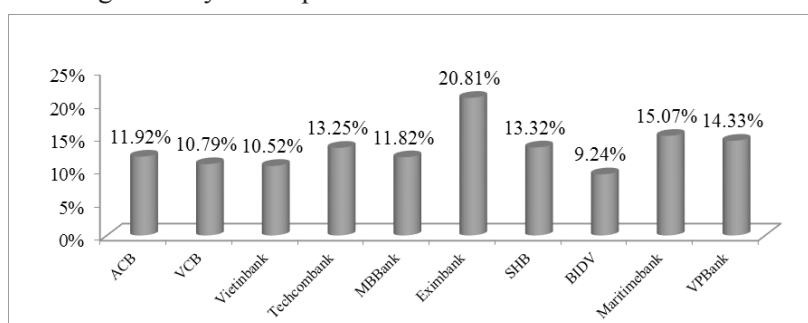
Chart 1. *Average CAR Ratio of commercial banks from 2007 to 2016*

(Source: Banks' Annual Reports and calculations of authors)

Chart 1 shows joint stock commercial banks have higher CAR than the state owned commercial banks. Eximbank has the largest CAR at 20.81% in the period 2007-2016, followed by Maritimebank at 15.07%. Among the state-owned commercial banks, Techcombank has the highest CAR at 13.25%, the CAR of Vietinbank and VCB is lowest only at 10%.

Vietnamese commercial banks need to increase equity to meet the requirement of Circular No.41 and in accordance with international practices on maintaining minimum capital adequacy ratio. Maintaining sufficient capital ensure the ability to withstand the business losses in order to protect stakeholders. In addition, the increase in equity helps banks invest in technology, human resources, environmental risk management systems, invest in market segment for sustainable development and provide green financial products.

2.2.2 Environmental and social risk management framework

Table 3. *Challenges in implementing sustainable development*

Challenges	Completely disagree (%)	Slightly disagree (%)	Agree (%)	Mostly agree (%)	Completely agree (%)	Results
	1	2	3	4	5	
Sufficient funds for sustainable development	0	6.67	50	36.00	7.33	**3.440**
Environmental and social risk management framework to assess the risk of loans	0	9.33	36.00	44.6	10	**3.553**
Set of standards to assess the impacts of each sector to environment	0	0	23.33	74.67	2.00	**3.787**
Human resources for sustainable development	0	0	68	25.3	6.7	**3.49**

Table 3 shows that two challenges are highly appreciated by managers are Environmental and Social risk management framework to assess the risk of loans and Set of standards to assess the impacts of each sector to environment.

Environmental and social risk management systems support the assessment of risks for bank loans. Sustainable banks need to appraise, filter and eliminate projects that have an adverse impact on the environment. After credit decision-making stage, these systems continue to monitor the project. For projects that are considered to be environmental risk, the bank will work with clients to figure out environmental mitigation measures. At the last stage, banks continue to support and supervise customers to implement the agreed measures.

The development and application of environmental and social risk management systems of commercial banks face many challenges such as lack of institutional capacity, information on customers and commitment from higher-level management team, risk assessment ability is still limited ... These are major obstacles banks need to overcome in order to achieve sustainable development.

Commercial banks in Vietnam have not developed a set of standards for different industries. Each industry and business sector have different environmental impacts, such as heavy industries (mining, metallurgy, and mechanics,) have more impact on environment than on agriculture, forestry, services, tourism sectors... Banks need to develop policies for specific areas to create a framework for environmental assessment to develop sustainably and offer green finance products. For some other sectors such as metallurgical, construction, mechanics, metals and chemicals, manufacturing and services ... these frameworks will help to appraise loan, manage risk more accurately.

2.2.3. Qualified human resources for the need of sustainable development

The quality of bank human resources plays an important role in implementing sustainable development strategies. Human resources not only have the ability to perform traditional tasks but also understand environmental and energy issues in loan approval and have the ability to assess the adverse impact on the environment and society of customer's business operations. In particular, bank employees must ensure sufficient professional qualifications and ability to meet four phases of sustainable development, and they must have professional ethics, proper behavior and be able to perform their duties at all levels.

For senior staffs, they need an in-depth understanding about climate change, green energy and environmental improvement. Banking managers should have a succession of strategy that ensures a thorough understanding of the bank's strategies, key business areas, customers, culture and core values, as well as the opportunity to build and develop a sustainable bank. In the addition to their current staffs, the banks need to recruit more qualified-employees to meet the position requirements and the bank's sustainable development requirements.

3.   A PROPOSAL FOR THE SUSTAINABLE DEVELOPMENT OF VIETNAMESE COMMERCIAL BANKS

The authors suggest the three phases of sustainable development for the banks: Phase I - Building internal environmental management system; Phase II - Managing environmental risks in lending activities; Stage III- Providing green financial products and green credit. Next, the authors conducted a survey of bank managers on the implementation of sustainable development in three proposed phases:
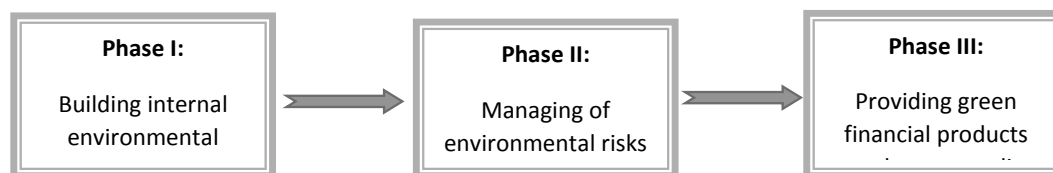
Phase I: Building internal environmental management system

Criteria	Results
Use energy and resources efficiently in banks' internal operations	**3.215**
Integrate environmental risk in customer relationship management	**3.167**
Raise awareness of environment and energy for employees	**2.677**
Initiate environmental management in bank operations	**3.233**
Organize training about environment and energy for employees	**2.567**
Inform employees about environmental issues regularly	**2.640**
Comply with the regulations about environment	**3.253**

According to the results of the survey, banks have paid much attention to build their internal environmental management system, including initial environmental management in their operations, with an average agreed level of 3.233; Comply with the regulations about environment is estimated at an average of 3,253; Banks also take measures to integrate environmental risks in managing customer relationships.

However, measures to raise awareness as well as ability for environmental risk assessment for staffs have not been highly appreciated. For sustainable development, banks must focus on training, providing environmental and energy related information to the bank's operations for its employees. Because, employees are the person who directly implement sustainable development strategies. In particular, credit officers appraise the environmental risks of loan projects by themselves, so they must have in-depth knowledge of environmental and energy issues for a full, substantive assessment of the impact on the environment of customers.

Phase II: Environmental risk management in lending activities

Criteria	Results
Assess and supervise environmental risk in customers' business operation.	**2.573**
Eliminate projects that have negative impacts on the environment	**3.080**
Encourage customers to reduce negative impacts on the environment in their business operation.	**2.540**

Criteria for assessing environmental risk management activities in lending activities have not been effectively implemented by banks. Banks only focus on the implementation of phase I, i.e. the development of internal environmental management systems, internal banking activities, but not on environmental management in lending activities. When implementing sustainable development, the assessment of the environmental risk is not only at decision making process but also during customer's operation. In addition, sustainable banks should take measures to assist customers in reducing negative environmental impacts while carrying out the projects.

Phase III: Provide green financial products and green credit

Criteria	Results
Offer sustainable and green financial products	**2.967**
Specific policies to encourage customers to invest in improving the environment and green technology	**2.560**

In the final phase, banks provide sustainable and green financial products. Banks around the world have provided these products, including: environmental investment funds, sustainable payments, sustainable savings products, sustainable credit, environmental insurance, climate products, environmental consulting services ...

However, green credit and green financial products provided by Vietnamese commercial banks only at decision-making process, that means banks just take into account the environmental issues during lending activities. While sustainable bank must take specific measures to encourage and support customers to invest in green technology, energy saving sectors. The incentives and customer support such as long-term loan, preferential interest rates, environmental consultancy, flexible payment methods... have not been implemented in the Vietnamese commercial banks

4. CONCLUSION

Vietnamese commercial banks have made commitments and measures for sustainable development. In particular, banks have focused on building internal environmental management systems such as using energy and resources efficiently within their banks, adhering to environmental regulations and initiating environmental management in business operations. However, in order to implement sustainable development and provide green financial products, in the near future, banks must refine their environmental and social risk management systems to fully and accurately assess these impacts. The banks also need to train, raise awareness, build capacity to assess environmental, green technology and energy issues of its employees and establish a team to supervise the implementation of sustainable development strategies.

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FINANCING FOR RENEWABLE ENERGY TOWARDS GREEN GROWTH IN VIET NAM

Dang Le Ngoc* - Nguyen Dinh Dung**

ABSTRACT: *Viet Nam is considered as one of the best successful model for escaping poverty and becoming a low-middle income country within three decades. Notwithstanding that the country enjoyed average 6% of annual growth rate over the last decade, it has been facing with a variety of impediments that may threaten its sustainable development. Renewable energy deployment is placed as a remedy in curing existing economic and social issues towards national green growth strategy that responds to the country's environmental problem, energy security and untapped rich renewable energy potential. In addition, Vietnamese government strongly committed in reducing greenhouse gas emission that demands at least US$ 27 billion by 2020 (equals 15% of GDP in 2015) to finance green energy sector (GIZ, 2016). However, calling such large amount of money is a challenge due to unattractive investment conditions combining with under-developed domestic financial market. Based on existing issues, authors proposed recommendations containing more luring conditions as well as strengthening domestic financing environment through a functional financial market for bankable investment in renewable energy in Viet Nam.*

***Keywords:** Green energy, Viet Nam, Renewable-energy financing*

1. INTRODUCTION

Currently, Viet Nam is fossil fuel-intensive economy when nearly two third of energy supply derived from coal, oil and gas (Revised PDP, 2017). With increasingly demand of energy of domestic market in recent years makes the country has become coal importer since 2015. Viet Nam, however, is a rich potential country with abundant source for renewable energy (RE) particularly wind power, solar power and biomass that are substantially untapped. In 2015, only 3.7% of total electricity supply derived from renewable energy. Over reliance on fossil fuel with lack of diversification in energy mix are threatening energy security of the nation. In addition, Viet Nam has been suffering with severe environmental issues related to climate change and local air pollution. All of those issues require a gradual replacement offossil fuel exploitationby green and environmental – friendly energy ones.This chapter is aiming to analyse the rationales of development RE industry in Viet Nam following by currently positioning RE financing in the country. Furthermore, underlying obstacles that challenge RE financing are studied.Although having advantages in finding financial sources for renewable energy namely a proper national energy strategy in place to make a concrete foundation to lure private investment with basic financial incentives such as FIT, preferential tax; there still exists a large number of hindrances such as low- regulated price of electricity that makes RE projects difficult to be profitable with uncertainty of creditworthiness of Viet Nam Electricity (EVN)- a state-owned enterprise (SOE) dominating electricity industry. Moreover, an underdeveloped financial system that lacks of capacity to deliver long-term capital with weak competence of banking system in implementing green

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credit appraisal. Based on existing challenges, authors proposed recommendationsincluding reviewing energy price policy with implementing fiscal policy reform to encourage RE investment; developinga fully functional domestic financial system, combining with sustaining business performance of EVN to make it more trustworthy in foreign investors' eyes.

2. MOTIVATIONS FOR ACCELERATING GREEN ENERGY DEPLOYMENT IN VIET NAM

2.1. Diversification of the Energy Mix and Energy Self-sufficiency

Viet Nam possesses a basket energy supply with prominent of coal, oil and biomass and geothermal (figure 1). In 2015, the total primary energy supply was 70,588 KTOE, of which coal occupied the largest part with 34%, following by oil (25%) and biomass and thermal (21%), meanwhile natural gas and hydro accounted for minor shares of 13% and 7% respectively (IEA, 2016).

Figure 1: Vietnam's primary energy supply by source (2015)
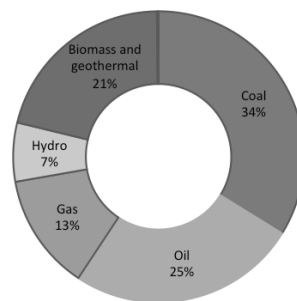
Source: IEA (2016)

For final energy consumption (figure 2), basing on 2015 data (IEA, 2015), energy consumed by industrial sector ranked first with 41.72% of total energy consumption nationwide, following by residential (32.23%) and transportation sector (19.54%). Significant share of energy used for industrialization that consists of many energy-intensive industries such as production of steel, fertilizers, cement, pulp and paper which often rely on outdated production technologies (Danish Energy Agency, 2017).

Figure 2: Final Energy Consumption by Sector in Viet Nam (2015)

■ Industry ■ Transport ■ Residential ■ Commercial and Public services ■ Agriculture
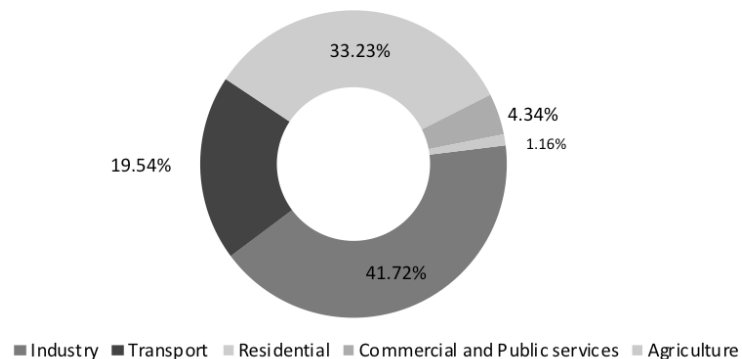
Source: IEA (2015)

When looking at the evolution of primary energy supply during longer period from 1990-2015 (figure 3), we can see a gradual increase in total amount of energy supply over the years. More notably, an obvious

increasingly trend of coal in both absolute number and percentage is found. The proportion of coal supply in energy basket in the country went up significantly from average of 14% in 1990s to 19% in 2000s and ended up with 30% in the period from 2001- 2015. This noteworthy figure is as a result of Vietnamese government's policy that determined coal is the primary source of energy supply for the country (PDP 7 rev, 2016). In contrast, biomass and waste to energy tend to decrease for contribution. There was a dramatically decreasing proportion in renewable energy supply (mainly biomass generated in countryside) during 1990 - 2015, biomass used to be the first primary source that comprised 70% in 1990 and above 50% of total energy supply before 2000, however it was replaced by oil and coal rapidly and stood at only around 20% in 2015 that partly due to the increasing of rural area's income (Dang et. al 2009).

Figure 3:
Evolution of Primary energy supply in Viet Nam (1990 - 2015)
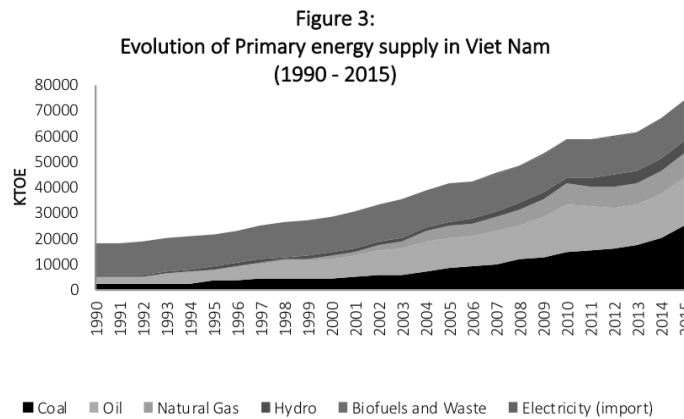
Source: IEA (2015)

When analysing primary energy mix position (figure 4)**,** although a variety of energy sources are currently included, the major attribution is from coal that is also in line with energy strategy of the government in meeting domestic energy demand basing on its cheap - operation cost for energy generation. In Power Development Plan 7 revised (PDP 7 rev) in March, 2016 the government expressed its interest in coal-fired energy by developing future plan that a majority of energy supply for industrialisation will be derived from coal. The component of coal is forecasted to be dominant with 49.3%, 55% and 53.2% in 2020, 2025 and 2030 respectively (PDF 7rev, 2016).

Figure 4: Structure of power sources as share of total electricity supply in Viet Nam

	2015	2020F	2025F	2030F
Nuclear				5.70%
Import	1.50%	2.40%	1.60%	1.20%
Hydro	30.40%	25.20%	17.40%	12.40%
Gas Turbine	30%	16.60%	19.10%	16.80%
Coal	34.40%	49.30%	55%	53.20%
Renewable energy	3.70%	6.50%	6.90%	10.70%
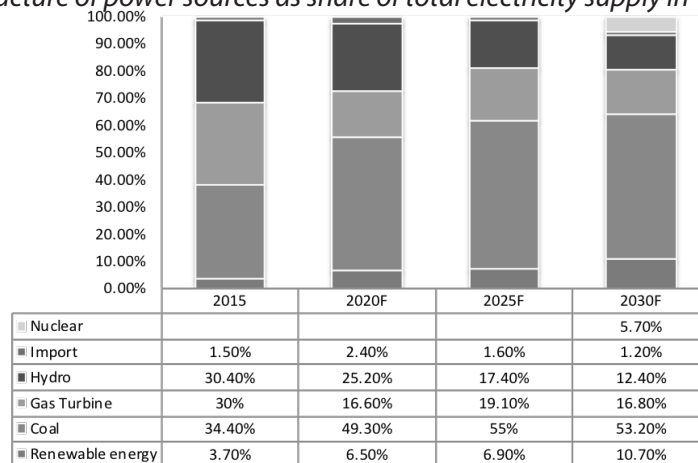
Source: PDP 7 revised (2016)

In order to meet high demand of domestic energy, import volume of coal has climbed up significantly since 2014 (figure 5). Value of energy import is greater than export as a result of decline of coal export and increase of coal import with a net import of 12% in 2015. The coal import in 2016 was more than 10 million tons and expected to increase in the coming years (*PDP 7 revised, 2016)*. With the increasing energy demand and recent fluctuations in energy import and export, Viet Nam has become a net energy importer since 2015 (figure 5). At the same time, volume of energy export declined in recent years, with an export volume of nearly 12 thousand KTOE in 2015 that equals to only 40% compared to 2009.

Figure 5: Vietnam energy import - export position

The situation of coal imported and the forecasted energy supply as demonstrated in Revised Plan 7 has raising significant concerns with regard to energy security for the country. First, this makes the country more import dependent and reduce the self-sufficiency of energy and vulnerable to external energy price shocks. Several studies found that reliance on fewer energy resources will reduce the energy security, among which Taghizadeh-Hesary et al. (2017) shed light on energy consuming sectors in Japan, after Fukushima nuclear disaster that resulted in nuclear power shutdown and substituting the nuclear loss with importing more coal, oil and

Liquefied natural gas (LNG). Their results show that absolute value of elasticities of most oil consumption sectors in Japan reduced after this disaster because of increaseddependency on oil consumption, which endangered energy security in thecountry. They proposed that to raise energy self-dependence and energy security, Japan needsto diversify its energy supplies from too much dependency on fossil fuel, to a combination of fossil fuel and RE. Second, as the domestic price for fossil fuels currently is set below the world market price, for imports this price gap would have to be met by public sources, putting pressure on an already deficit government budget. Third, as above 50% of energy supply is coal illustrates an improper energy diversification for the country.

2.2. Higher energy efficiency and lower GHG emission

Vietnam's GHG emission growth is one of the largest in the world and its carbon intensity is the second highest in Asian countries (World Bank, 2015) with the energy intensity is gradually increasing and predicted to become a major greenhouse gas (GHG) emitter in the region with regard to declining among

countries East Asia and Pacific as well as lower-middle income country (figure 6). These issues are majorly projected basing on growth in the use of coal when this source accounts for more than 50 percent of the energy mix by 2030 for power generation illustrated in PDP rev 7.

Figure 6: Energy intensity level of primary energy source from 2000-2015
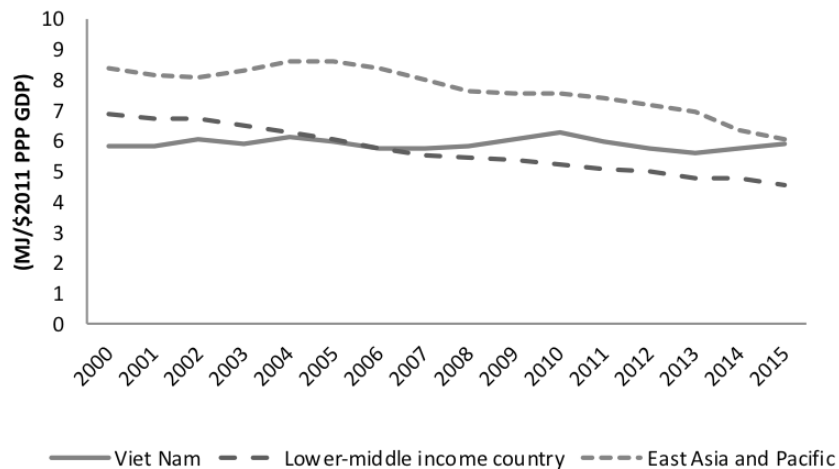
Source: World bank (2015)

Figure 7: Per Capita CO2 Emission vs. Per Capita GDP in Viet Nam (1985 - 2014)
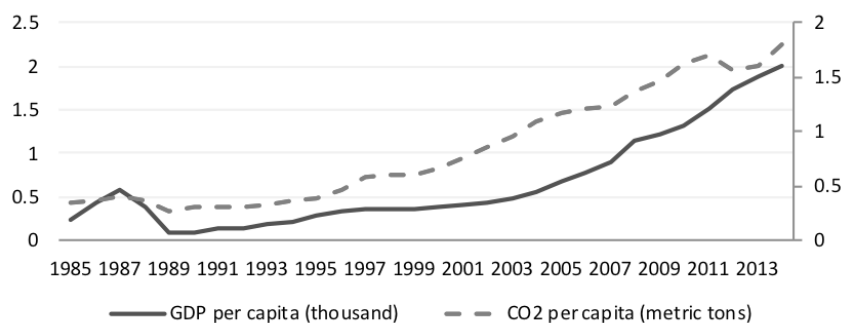
Source: World Bank (2015)

Figure 7 shows the positive correlation between CO2 emission per capita and GDP growth per capita of the country in three consecutive decades (from 1985 to 2015). Viet Nam witnessed impressive economic growth rate with average per annum of 6% from 1985 to 2014. However, at the same time, amount of C02 emission per capita experienced an identical pattern when increasing 4 times during the periods with the absolute number of emission from 21.168,924 kt in 1990 to 166.910,839 kt in 2014. The strong coupling between economic growth and C02 emission generation requires less C02 – intensive industrialization strategy in future.

As mentioned before, Viet Nam continues to develop coal-fired thermal power plants, determining it as the first primary electricity supply source for the economy. Koplitz et al.,(2017) in their study broke up emissions growth in the relation with changes in the carbon intensity in Vietnam, they found that high increases after 1990 can majorly be attributed to an

increased use of oil, but coal plays a significant role. Emission that is the main source of air polluting and lead to climate change has been adversely affecting the national growth and poverty reduction in many nations including Viet Nam.

If global climate change is a broad extend when measuring the impact of Viet Nam in responding the universal phenomenon (Zimmer e a. 2015), severe local pollution issue seems to be more obvious to take into account. Generating coal-made energy is more costly than it appears due to the underlying expenses for local environment, health, livelihoods. Furthermore, huge waste from coal projects must be transported and landfilled while air pollution and other externalities are often not included in its price.

As of 2011, Vietnam has 38 Coal-fired power plants in operation and is projected to reach 133 by 2030. Coal-fired power plants are considered to be important polluters in the local environment where factories are established. If all plants are scheduled to go into operation, the bottom ash slag up to 14 million tons per year by 2020, and nearly 35 million tons of bottom ash in 2030, along with tens of millions fly ash, mainly SO_2, NOx, and primary PM2.5 gases. In a study by Koplizet et. al (2017) predicted that by 2030, the total number of deaths due to coal pollution in Vietnam would be 19220 people mainly involved in heart disease and stroke.

Therefore, with ambitious strategy from authorities towards cleaner, more environment – friendly not only for global in broad extent but specifically for local environment first, that requires a significant change in strategic energy deployment of the country. Because it is impossible to exit and discontinue a large number of coal-fired projects, employment of technology for cleaner coal-fired power plant must be considered as the most important solutions since currently, almost all of coal-energy generators in Viet Nam are out of date (ECA, 2016). A variety of model for greening and modernizing the technology of coal-fired industry that benefit greening energy sector process can be found, Isogo thermal power plant in Japan should be an example.

2.3. Unleash substantial untapped potential of renewable energy

Viet Nam has abandon source for RE generation basing on a large number of advantages in geography location. Wind, solar and biomass are the most three promising energy sources for generating green energy. Biomass is an important and abundant source of energy in Viet Nam when a large number of citizens located in rural area and agricultural sector. Agricultural waste is abundantly presented in the Mekong Delta region, accounting for roughly 50% of the waste of the whole country, for the Red River Delta, it comprises 15% of the country's waste. Before 2000, nearly 90% of rural areas energy consumption is derived from biomass such as fuel wood, agricultural residues and charcoal. Moreover, biomass fuel is also an important source of energy for micro and small industries located mainly in remote areas.

In terms of solar energy, based on its favorable geographical conditions, Viet Nam has huge potential for solar energy production, with 1,600-2,700 sunlight hours per year and an average direct normal irradiance of 4-5 kWh per sqm per day (GE, 2018). Specifically, Viet Nam has rich potential for solar Photovoltaic (PV) power. This type of energy production has great advantages such as very few negative environmental impacts and zero GHG emissions. After initial investment, except for some small amounts of costs for maintenance, solar panel cleaning and liability insurance, there are no other operational costs. Cost of generating electricity from solar PV are steadily reducing.

With regard to wind energy,Vietnam's wind energy potential capacity is considerably high if compared to Thailand, Laos or Cambodia. With a coastline of more than 3,000 km and located in the monsoonal climate zone, Viet Nam has considerable potential for harnessing its wind resources. The provinces with the most promising wind potentials include BinhThuan, NinhThuan, Vung Tau, Ben Tre, SocTrang, Bac Lieu, Ca Mau and the Central Highlands. The total technical potential for wind power development in the country is estimated be at 24GW according the atlas. (GIZ, 2013)

In terms of renewable energy generation from solid waste, with a population of more than 93 million people, the volume of waste disposal in Viet Nam is huge. On average, nearly 35,000 tons of urban daily-life waste and 34,000 tons of domestic waste discharged. In big cities like Hanoi, Ho Chi Minh City, there are 7,000 to 8,000 tons of waste each day (Schneider et al., 2017). However, the amount of waste has not been thoroughly used as a source of energy for life. Currently, nearly 85% of the current waste in the country is treated mainly by landfill technology, which requires many land funds, of which 80% of landfills are not hygienic, potentially contaminating the environment. With 35,000 tons of rubbish buried each day, this is a wasted resource that Viet Nam has not fully utilized for energy generation.

3. FINANCING FOR RENEWABLE ENERGY IN VIET NAM

3.1. Renewable energy investment in Viet Nam

Figure 8: Renewable energy investment in Viet Nam (2011-2016)

	2011	2012	2013	2014	2015	2016
US$ M	224.18	189.75	225.45	117.37	278.98	681.69
growth rate		-15%	19%	-48%	138%	144%
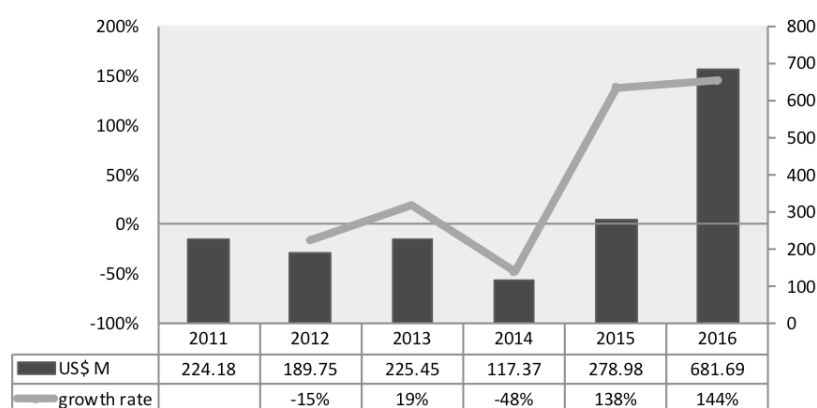
Source: Global-climatescope(2017)

Figure 8 shows value of annual new investment in RE in Viet Nam from 2011 to 2016. At the beginning of the period covered, investment for RE industry annually is small amount with all under US$ 300 million from 2011 to 2015, even in 2014, the figure decreased significantly by 48% compared to previous year. However, turning to 2016, there was a noticeable sign when investment soared a further 130% and stood at US$ 682 million that makes the total value of renewable energy industry in Viet Nam until 2016 ended at US$ 2355.73 million (figure 8). It is believed that, amended Power Development Plan 7 has positive effect to Viet Nam RE industry and aslo 2016 became a remarkable year for renewable energy investment in the country. Moreover, in that 2016, the value of new RE investment in Viet Nam was also equal to that of Singapore and Taiwan but it was still lower than Thailand's and Philippines's (table 1).

Table 1: Renewable energy investment in 2016 in Asian countries

Criteria	Renewable energy investment in 2016-US$ Billion	Growth rate -% (compared with previous year)
Thailand	1.4	4%
Philippines	1	-47%
Pakistan	0.9	-58%
Singapore	0.7	1328%
Vietnam	0.682	143%

| Taiwan | 0.7 | -2% |
| Indonesia | 0.5 | 84% |

Source:Global-climatescope(2017)

It is noteworthy that, when comparing whole amount of RE investment value over the years among Asian countries such as Thailand or Indonesia, Viet Nam is only a minor player. Figure 9 shows accumulated value of RE financing in Viet Nam and Indonesia during 2010-2016. Surprisingly, in 2010, the value of two markets are similar, it was even slightly higher in Viet Nam. However, Indonesia witnessed a dramatic increase in following years meanwhile Viet Nam lagged far behind the neighboring nation. At the end of 2016, the accumulated value of RE investment for Indonesia is US$ 5643.7 million that is more than two times of Viet Nam's.

Figure 9: Accumulated value of RE investment in Viet Nam and Indonesia (2010 -2016)
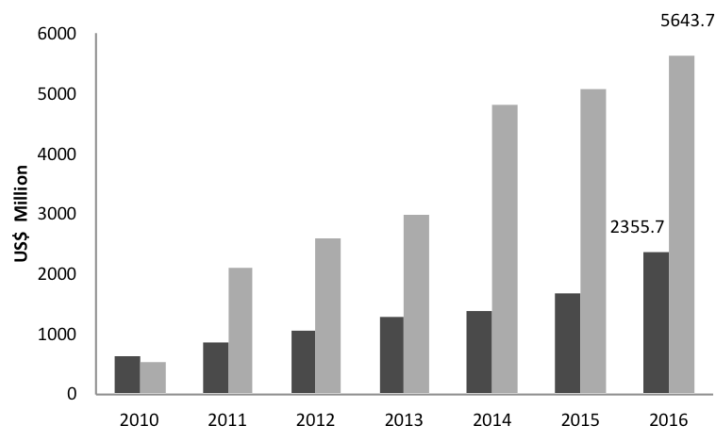
Source: Global-climatescope(2017)

As estimated by GIZ (2013), renewable energy tapped in Viet Nam is currently only 3.4% of total potential and therefore it requires a huge capital to unleash.

There has an explosion of renewable energy investment all over the world and South-East Asia is one of leading region that has huge amount of money invested for RE projects. In 2015 and 2016, the values of new investment for RE in that location are US$ 3.8 and 2.6 billion respectively (Irena, 2017).

It can be said that value of RE industry's investment in Viet Nam is negligible and not commensurate with the country's demand to unlock the substantial potential. This industry was not received adequate attention from the government in long time and seems to be neglected until the revised PDP 7 issued. Viet Nam is considered as "late comer" in a trending industry and therefore requires stronger commitment from authorities to unleash this huge potential in future. Without the government's efforts and commitment to invest renewable energy, Viet Nam may become a "outsider" of the globally investment waive.

3.2. Financial incentives for renewable energy projects in Viet Nam

Regarding financial incentives to unlock RE potential in the country, Feed-in tariffs is an important component that helps to initiate a surge of renewable energy in the market. In Viet Nam, FITs for multiple types of renewable energy sectors are illustrated according to regulations as below (Table 2).

Table 2. Financial incentives for renewable energy projects

Renewable electricity source	Regulation	Investment area	Supporting mechanism	Supporting in detail
Wind	Decision no: 37/2011/ QD _TTg (6/2011)	Electricity production	FIT for 20 years	7.8 US cents/Kwh excluding VAT
Biomass	Decision No: 25/2014/ QD-TTg (3/2014)	Electricity generation	FIT for 20 years	7.551 US cents/KWh (north)
				7.3458 US cents/KWh (central)
				7.4846 US cents/KWh (south)
Solid waste	Decision No: 31/2014/ QD-TTg (5/2014)	Direct burning	FIT for 20 years	10.5 US cents/KWh (south)
		Landfill for gas	FIT for 20 years	7.28 US cents/KWh (south)
Solar	Decision No: 11/2017/ QD - TTG (4/2017)	Grid connection generation	FIT for 20 years	9.35 US cents/KWh
Small hydro power	Adjusted annually by MOIT	Electricity generation	Avoided cost tariff	~ 5 US cents/KWh

Source: GOV (2011, 2014, 2017)

Despite the fact that Vietnamese government adopted a feed-in tariff for multiple types of renewable energy (with EVN has the sole responsibility for buying the whole electric output from renewable power projects), this current subsidized tariff is not attractive in comparison with that in other ASEAN countries (for example, wind power's FIT is 19 US cents/kWh in Thailand and 21.8 US cents/kWh in Philippines).

4. MAJOR CHALLENGES IN FINANCING FOR RENEWABLE ENERGY IN VIET NAM

4.1. Inappropriate energy pricing policy

Electricity price in Viet Nam has been under highly regulated in a long time. Domestic coal prices are set well below world market prices. There are price ceilings in the refined petroleum markets as well as various taxes and tax waivers applied.

Figure 10:
Average power tariff among ASEAN countries (2014)
- US cent/kWh

Singapore	20.5
Combodia	17.5
Phillippins	13.8
Malaysia	13
Indonesia	12.5
Viet Nam	9.03
Thailand	9
Lao PDR	7.5
Myannmar	5.7
Brunei	5.5
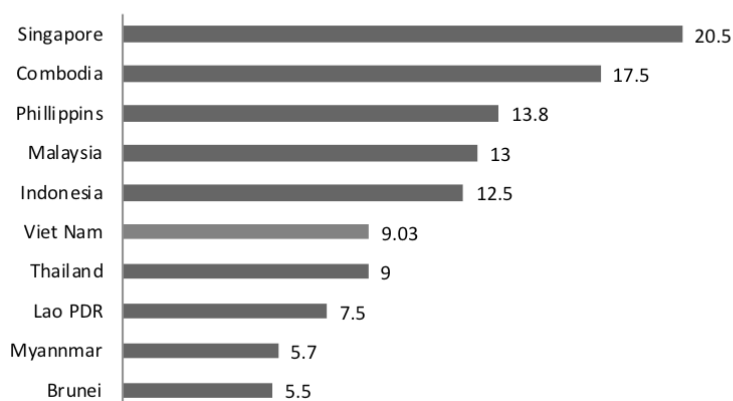
Source: GIZ (2016)

It might be irrelevant to compare the electricity tariff among different countries due to difficulties in calculating the average for each country that varies from customer type, volume of electricity used, high demanded time or day, etc. Nevertheless, not many countries possess low average electricity tariff as Viet Nam. Figure 10 shows the comparison of electricity price within ASEAN region, it can be seen that Viet Nam is one of the lowest - electricity price country, only higher Myanmar, Laos and Brunei and almost same tariff as in Thailand.

The fossil fuel subsidies through electricity price control place pressure on state budget that has been experiencing deficit in long term and insufficient to invest into other development projects. Subsidy fluctuates between $US 1.2 billion and $US4.49 billion per year for the period 2007-2012, based on the price gap approach with the largest component was spent for electricity. After 2012, total amount of subsidy for energy and electricity is gradually decreased and stood at 1.8, 1, 0.2, 0.1 ($US billion) in 2013, 2014, 2015 and 2016 respectively. (GIZ, 2016).

In PDP 7 revised, with application of FITs for multiple types of RE projects, forecasted subsidy for power generation in Viet Nam is still significantly increasing in volume as illustrated in table 3.

Table 3: Forecasted subsidy for power generation

	RE type	2020	2025	**2030**	**2035**
Power generation	Solar	3.88	7.62	18.86	24.77
	Wind	4.31	7.97	17.55	55.45
	Biomass	1.67	5.59	15.67	30.54
Forecasted Subsidy * – billion US$	Solar	0.16	0.31	0.77	1.01
	Wind	0.11	0.20	0.44	1.39
	Biomass	0.01	0.03	0.08	0.16
	Total	**0.28**	**0.54**	**1.29**	**2.56**

Note: (*) as a gap between FIT and average electricity price set by EVN at the end of 2016

Source: (PDP 7, 2016)

In addition to increase in budget spending, artificial low price of electricity is considered as a weak factor in liberalizing and opening domestic market and one of the most concerning issue that prevent investment from private sector. A numerous number of investors expressed the concerns relating to bankability of RE projects as low energy price means projects' proper rate of return is not ensured when electricity tariff may not compensate production cost.

4.2. Unpreferential Feed-in tariff

While some RE technologies are already cost-competitive, almost all of RE projects are difficult to rival the subsidized conventional energy power generation. In fact, negative externalities in traditional energy generating is not considered, leading to artificially low electricity prices that do not reflect the true cost of manufacture.

The Feed-in Tariffs offered by Vietnamese government to remedy this situation, however they are considered as not reasonable to ensure RE projects bankable, the standard electricity tariff is still lower compared to manufacturing cost in conventional energy projects, in RE ones, the cost is even much higher. For example, in 2011, the weighted average retail electricity price in the country was only US 6 cent per kWh while Long Run Marginal Cost was US 9.5 cent/kWh (Nguyen, 2012).

4.3. Undeveloped financial system that is inefficient in funding long term loans and applying innovative financial devices

Viet Nam's financial market is immature with small-market size and undiversified-financial instrument types.

Domestic stock market is small in scale and weak in structure with lack of diversity in market's commodity. In addition, with immature bond market structure when government bond segment holds the majority market share. In 2014, government bonds were issued up to VND 248.024 trillion that is equivalent to 6.24% of GDP, whilst, corporate bonds accounted for only VND 22.922 trillion that equals less than 1% of GDP. Furthermore, it is difficult to issue long-term bonds since market prefers short - maturity ones. In 2017, the bonds with over 10 year - period only comprised 22% of total outstanding value of bonds issued. Because of the small size of the capital market, financing for businesses is heavily reliant on bank credit capital (Banking Strategy Institute, 2015).

However, funding via Viet Nam's banking system is also challenging due to domestic banks are often considered RE projects as risky and strange business. Although to date, Vietnamese banks are more interested in their green lending portfolio, the most significant obstacle of banks is inadequate capacity for processing green credit appraisals including risk assessment and evaluation of new technologies. Green energy lending deals therefore have often only been successful with involvement of international financial institutes such as ADB or World Bank or donors as development organizations.

New and innovative financial vehicles such as green bonds are expected to provide additional financial channel for renewable energy financing. However, not-fully developed financial market in Viet Nam seems to be not yet ready with those type of instruments.

4.4. EVN's creditworthiness concern

EVN is a giant state-owned enterprise among three SOEs in energy sector. It possesses a robust market share in energy market and make up above 60% total of electricity generation of the country (World Bank, 2018). In the PDP 7 rev, the government regulated that EVN is a major buyer and responsible for consuming electricity generated from all RE projects in the country.

However, financial health status of this SOE raises significant concern for RE developers especially foreign ones. In fact, energy price is highly controlled that lower than manufacturing costs means that it is highly likely for EVN to make losses. In 2010 and 2011, more than VND 10,000 billions of loss reported that equals to US$ 500 million at that time, and value of debt shared 85% of total assets (World Bank, 2018). Although since 2012, there has been a noticeable improvement in EVN's financial performance when it has been turning to be profitable and recently it was ranked BB for credit rating by Fitch that equals sovereign rating of Viet Nam (Fitch, 2018), EVN's creditworthiness is still an issue.

From 2014 to 2020, EVN demands an investment of US$ 53 million to deal with an increase in energy need, address shortage of existing power plants and finance for new power generation, transmission and distribution including nuclear and renewable-energy projects (World Bank, 2018). With ambitious and unprecedented plan for capital expenditure, EVN has huge pressure in finding long term funding. At the same time, EVN's debt structure is unhealthy when a half of it occupied by short-term loans with maturity is less than 5 years, meanwhile, the assets acquired by EVN have long lives up to 25 years. Thus, there is a mismatch between assets/liabilities of the enterprise.

Under the uncertainty in securing its profitability in future, the worry of investors for EVN is reasonable for how it creates profit in future and implement its responsibility in payment in full and on time once their RE projects take place.

5. CONCLUSION AND POLICY RECOMMENDATIONS

In order to achieve green growth strategy that Vietnamese government committed, development of renewable energy is a stepping stone. Allowing integration of RE into energy system is beneficial in ensuring national energy security in responding with increasing dependence on energy import. Furthermore, severe impacts of climate change and local environmental pollution that partly due to exploiting fossil fuel require deployment of alternative source especially when Viet Nam is a rich-RE potential country particularly in wind power, solar power and biomass.

Viet Nam are lagging far behind several neighboring countries in investing into non-hydro renewable energy. To be able to meet the annual growth in energy demand of 13%, Viet Nam needs investments of US$ 27 billion until 2020 for green energy sector (GIZ, 2016). However, due to the limitation of state budget and unprofitable energy SOEs, it is estimated that 50% of total investment for RE development must be from private sector. In order to attract private investment, the government offered investment incentives such as FIT, preferred tax rate and fees. However, those financial incentives are considered as unattractive, combining with low electricity tariff basing on subsidy questioned bankability of RE projects that require huge initial investment and are vulnerable with political and environmental changes. In addition, not-fully developed domestic financial systems with poor finance infrastructure and limited financial channels for calling long-term loans is another issue. From those barriers for financing RE projects in Viet Nam, major recommendations are proposed as below.

5.1. Revise energy-price policy thatresults in more-reasonable energy price and Feed-in tariff

Adopting market mechanism for electricity price determination and privatization of the power generation and transmission similar to the most recent experience in many countries such as Japan and the earlier experience of France would make the power market more interesting for the private investors in the RE sector as well as sustain profitability of EVN.

Artificially low electricity price in domestic market is one of the worst unattractive criteria for participating of private sector to RE industry in Viet Nam. Energy pricing should be revised to make it more reasonable and commit a higher chance for bankable renewable projects if implementedin terms of removing fossil fuel subsidies, there are debates in the country whether increasing in energy price particularly electricity will lead to negative impact on remote area and vulnerable businesses such as SMEs. According to a research from Neefijes and Dang (2017), the advantage of cutting subsidy outweighs its disadvantage in Viet Nam due to GDP in general will increase by better energy efficiency and it in turn contributes more to social welfare that have long term positive impact. Furthermore, low income household may be suffered by energy price increase but at the same time may enjoy additional revenue if RE projects located in that area. With regard to SMEs as believed as the most vulnerable and energy inefficiency, higher electricity price could be a motivation for energy efficiency application and the gain is achieved in long term period.

The government of Viet Nam should have stronger commitment to create market-oriented pricing that would reduce the demand for coal compared to cleaner- burning natural gas and other alternative energy sources. Nguyen (2012) in his research also affirmed that the benefit of restructuring energy price system will exceed the cost at a wide margin for Vietnam when makes opportunity for increasing social welfare system instead of energy subsidy spending.

5.2. Increase the creditworthiness of EVN

It is notable that, pricing reform cannot be done without the reform in wide range aspects such as reducing and constantly phasing out government subsidies, restructuring energy SOEs that requires serious

dedication and commitment from the government. Achieving healthy and profitable business for EVN is also a way to increase the trust of private investors for RE development in Viet Nam.

Meanwhile, to increase the creditworthiness of EVN in particular and SOEs in general is a broad issue that involved in a wide variety of policy implications. However, the major aforementioned threats of EVN's financial stability is mismatch between debt and assets as well as high risk of exchange rate loss. Therefore, with the purpose of sustaining profitability, reconstruct debt portfolio with proper ratio between short-term and long-term loan by is a must. In addition, risk management in terms of foreign exchange rate risk is crucial in the case of foreign currency-denominated debt still remains a major part in total value of debt.

5.3. Implement fiscal policy reform with discouraging CO2-intensive sector and facilitating the deployment of RE technology

How to find financial source for funding renewable energy project under limited budget especially in developing countries where state budget is constraint is still a fundamental problem. One of major solution is designing carbon tax system that taxes collected will re-finance for green energy technologies.

Yoshino and Taghizadeh-Hesary (2018) in their paper argued that, due to the electricity especially renewable energy is public goods, therefore, in order to maximize its potential, investing in to infrastructure projects is believed as government's' responsibility. Otherwise, investment incentives need to be adequate to lure private investment. One of the best practice to providing better incentives for investors is utilizing spillover effect from Carbon tax to reallocate into renewable energy projects financed by private sector. This fiscal policy via tax regime will be beneficial for discouraging C02 emission as well as creating a funding source for renewable energy projects in the country.

5.4. Develop a wide range of financial vehicles to facilitate long-term finance and risk mitigation

Cuong and Dersch (2014) showed that availability of debt funding is a key to unlock RE investment. It is believed that even FIT is amended with a sufficient value, a lack of adequate long-term funding with below 6% interest rate still does not ensures bankable RE wind power generated projects that require IRR of 10%. Since 2014, domestic interest rate for long maturity- loan in banking system has fluctuated at 6-6.5% that is affordable for RE financing, however, in history, the interest rate for long-term maturity loans climbed up to over 9% (in 2013, 2014), maintaining a healthy monetary system to ensure stable and predictable interest rates is crucial for attracting RE in future.

World Bank (2018) indicated that the failure in obtaining proper debt structure of EVN is as a result of inadequacy of Viet Nam capital market rather than the enterprise's competence. Viet Nam's financial market is currently underdeveloped with lacking a sufficient financial infrastructure. Thus, despite the preparation of financial instruments to finance green energy projects such as green bonds, so far these vehicles have not been put into practice. In order to attract more private sector to involve green energy development, the functions of the domestic financial market should be enhanced especially through a number of key areas: Developing the domestic bond market as a basis for the development of the green bond market for clean energy projects; Building and developing investment funds, venture capital market for seeding capital for startup in RE development; Enhancing effectiveness in implementing credit guarantee scheme to provide more concessional loans and increase access to finance for RE projects as well as green SMEs; Building up credit rating agencies with high capacity in credit appraisal of energy projects; Strengthening the capacity of financial and banking institutions in funding for RE energy projects via effective and efficient lending appraisal.

In addition to rely on banking system for long term financing, introducing pension funds for bringing long-term finance might be also a practical solution.In the bank dominated financial system of Viet Nam with relatively high level of interest rate, and significant amount of non-performing loan (NFSC, 2017), and due to the limitation that banks have for entering to RE energy sector due to Basel Capital Accord, many banks are not showing interest to finance RE projects. In this situation pension funds and insurance companies could be alternative choice, as they are holding long-term money (20 years, 30 years and 40 years) which are proper for long-term lending to RE sector. On the other hand, Viet Nam does not have pension fund system, due to an aging population that Vietnam will face in future, development of a strong pension fund system will secure the future social security payments and at the same time will provide long-term financing for those sectors that are seeking long-term financing and will provide high return such as RE sector.

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THE MONETARY POLICY STANCE INDEX IN VIETNAM

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ABSTRACT: *Analyzing monetary policy in Vietnam is not straightforward because the State Bank of Vietnam (SBV) uses more than one instrument in conducting monetary policy. This paper looks for a policy stance measure that captures most of the important changes in the stance of the SBV's monetary policy and has a closed link with the state of the economy. We apply the stance index method proposed by He and Pauwels(2008) to construct various monetary policy indexes based on different perspectives. We then apply the ordered probit model to estimate the monetary policy reaction functions. Our finding is that consolidating the growth rates of money supply and domestic credit is adequate for constructing Vietnam's monetary policy stance index through period 1999-2015. The empirical results show that monetary policy reacts to the index of industrial production, inflation, and nominal effective exchange rate.*

***Keywords:** Monetary policy, Monetary stance, Ordered probit*

1. INTRODUCTION

In general, measuring accurately monetary is necessary not only to policymakers but also to scientists for both practical and analytical reasons. In particular, understanding Vietnamese monetary policy is more critical than ever before as Vietnam becomes a member of the ASEAN Economic Community (AEC) established in 2015. AEC's goal of monetary and financial integration gives rise to the monetary cooperation problem among member states. However, interpreting the monetary policy in Vietnam is far from easy for the reason that the SBV employs more than one instrument to carry out the monetary policy. In detail, the SBV frequently uses a combination of price instruments–required reserve ratio, refinancing rate, discount rate, and prime rate, and quantity tools–broad money supply M2 and credit to set policy. It is inadequate if using one or part of the whole instrument set to capture the monetary policy stance. There is a need to develop an indicator which can characterize the Vietnamese monetary policy stance.

The quality of policy stance index depends on its ability to reveal whether monetary policy becomes easing, unchanged, or tightening, and on its connect to macroeconomic variables. Most present papers concentrate on the causal effects of macroeconomic variable and adjustment of a single policy tool in investigating monetary policy stance. For instance, the growth rates of M2 and domestic credit are often employed in many papers to capture the SBV's monetary policy stance. The levels of M2 and domestic credit in 2015 are about sixty and seventy times higher than in 1998, with an average nominal annual growth rate over the period of 28% and 77%, respectively. Based on the high growth of M2 or of credit, we can not simply conclude that Vietnam has implemented an easing monetary policy over the past fifteen years. It is because in 2008, Vietnam's government officially announced a seven-measure toolkit to fight against high inflation and highlighted the tightening monetary policy as the most important one.

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Concerning the policy stance measurement, Bernanke and Mihov (1998) distinguish their studies from others by accounting for more than one variable instrument. He and Pauwels (2008) develops the "index-based method" that picks the discrete changes in the volume of various monetary policy instruments to measure the monetary policy stance in China. This approach is precisely appropriate for the analysis of the Vietnam situation. Corresponding to the high speed of economic transition and of economic integration, the conduct of Vietnam monetary policy has been changed drastically through time. When there are more than one policy instruments, it is natural to construct an indicator that covers as much as them. This approach makes use of different sources of monetary policy information which are complementary because central bank changes its favorite set of instruments over time, and of the indicator method that allows offsetting the opposite policy tools in order to produce a single signal at a point in time. Multiple sources of information, however, may cause a policy inconsistency as the indicator consecutively flips the sign. In brief, both single and multiple instruments-based stance indexes have their own merits, this calls for a thorough concern of entire instrument set to have an accurate measurement of policy stance. We aim at filling the gap by constructing a policy stance indicator which covers only two ingredients. This construction not only utilizes the advantage of the indicator-based method but also minimizes the drawback of calculation based on a variety of information.

The conduct of monetary policy in Vietnam after 1998 showed signs of change from the use of direct to indirect tools. Since 1998 SBV has decided not to use credit limitation as a regular tool in managing monetary policy and to increase the use of indirect instruments such as rediscount rates, refinancing rates, base rates, and reserve requirement ratio. In 2000, the open market operations (OMOs) was officially launched and became one of the tools regularly used by the SBV. Despite these optimistic signals, throughout the period after 1998, the SBV has not yet separated from the direct and administrative tools. It occasionally used administrative instruments to curb escalating inflation, such as promulgating the interest rate cap in 2008. Since 2011, the SBV began to reuse credit limitation in implementing the monetary policy. As an agency under the government and on behalf of the government to administer monetary policy, the SBV must annually meet the targets of inflation, money supply growth and credit growth approved by the National Assembly. The SBV still relies on money supply control and credit limitation formally or informally to run monetary policy. For that reason, in this paper, we use money supply growth and domestic credit growth in building a monetary policy stance index. We then employ an ordered probit model to estimate the monetary policy function in order to examine the linkage between this index and macroeconomic variables.

The remainder of this paper is organized as follows. Section 2 review the literature on the monetary policy stance index and the policy reaction function obtained by using an ordered probit technique. Section 3 describes the construction of Vietnam's monetary policy stance indicator. Section 4 introduces the ordered probit model and the data set, and then discusses the main results of estimation. Section 5 concludes.

2. LITERATURE REVIEW

Our work is related to two strands of literature: First, we build on literature on multivariate- based monetary policy stance indicator. The wave of criticism on a single measure of policy stance at the end of 20th century paves a way to the birth of multiple one. Romer and Romer (1989) and Boschen and Mills (1995) start this movement by applying the traditional narrative-based method to study monetary stance. They collect information on a variety of documents issued by the monetary authorities and then convey them into integer numbers in the interval [−2, 2] to represent a range from strongly easing to strongly tightening respectively. However, the problems of this method are the subjectivity and the divergence between intention and actual policy actions of the monetary authorities. While the former severely affects the results' accuracy, the latter misleads the monetary policy analysis. Bernanke and Mihov (1998) sort the

nonborrowed reserves, total reserves, and federal funds rate in a structural vector autoregression (SVAR) model and define the policy stance as a linear combination of the policy shock. This SVAR has become the workhorse model for monetary policy analysis in the U.S. and other developed countries. The use of SVAR's disturbance to capture monetary shocks causes discrepancies among different estimations, this questions the application of this model in policy analysis. Moreover, in practice the monetary policy is predicted, i.e., the Taylor rule, that is in contrast to the unpredicted focus of the SVAR. Therefore, the feedback rule derived from the SVAR-based measure could understate the role of monetary policy.

Second, the response of the monetary policy stance to macroeconomic variables is estimated to assess the appropriate index to characterize a central bank's behavior. This response is contingent on a monetary policy rule. Taylor (1993) proposes a quantitative study of this framework by regressing the federal funds rate on inflation and the output gap. The result is known as the Taylor rule which becomes a standard in the analysis of the monetary authorities' reaction in a variety of countries, for example, Peersman and Smets (1999) for the Euro area, Gerlach and Schnabel (2000) for the European monetary union, and Taylor et al. (2006) for the United Kingdom. Because of the discrete quality of the dependent variable-the monetary policy stance index, the conventional ordinary least square regression causes a biased estimation. This problem can be solved with the ordered choice method, such as probit model whose the disturbance is assumed to follow a normal distribution. Several papers apply this method to analyze the monetary policy reaction function. Eichengreen et al. (1985) study the Bank of England's discount policy under the interwar gold standard. The weekly decision whether to increase, cut or leave the discount rate unchanged is formulated as a nonlinear function of reserve position, difference between domestic and foreign interest rates, level of economic activity, and level of discount rate whose value takes the discount rate during the previous period if this rate was higher than 4% or zero otherwise. Gerlach (2007) uses the European Central Bank's Monthly Bulletin to create the choice variable. The empirical results indicate that monetary policy responds to M3 growth, real economy status, and changes in exchange rate, except inflation. Kim et al. (2016) employ three types of constrained ordered choice model and showed the essential role of output gap and exchange rate in studying the Bank of Korea's interest rate decision-making process.

Our paper is closely related to He and Pauwels (2008) and Xiong (2012) which measure the monetary policy stance index of the People's Bank of China and then use the ordered probit technique to estimate the policy reaction function. However, our paper is different from them in several aspects. First, unlike He and Pauwels (2008), we do not fix the nonstationary problem because we do not find any firm evidence of nonstationarity in our model regressors. Second, instead of covering as many instruments as possible when constructing policy stance, we rely on Vietnam's characteristics and comparison of estimation results from regressing the benchmark stance index and the proposed one to examine whether the latter can capture the SBV's behavior.

3 VIETNAM'S MONETARY POLICY STANCE INDEX

Table 1: Main monetary policy instruments: 1999-2015

Period	Main monetary policy instruments
Before 2000	Credit limit/Refinancing
	Various interest rate
	Required reserves ratio
2000-2010	Refinancing/OMOs
	Various interest rate
	Required reserves ratio

2011-2015	Credit limit/Refinancing/OMOs
	Various interest rate
	Required reserves ratio

The objective of the SBV's monetary policy is promulgated by law as stabilizing the value of the currency and thereby promoting economic growth. The former is interpreted as control of the inflation rate together with stabilization of the exchange rate. In order to reach these multiple objectives, the SBV sets multiple instruments, and it rather combines different monetary instruments through time. For example, the credit limit and refinancing facility used as the key monetary policy tool during nearly the whole 1990s. Although credit limit was revoked in 1998, the SBV has conducted it again since March 2011. During 2008, the open market operations, reserved requirement ratio, and various interest rate were simultaneously used to reduce inflation. Because of the inadequacy of each monetary policy tool solely as a policy stance measure and the SBV's habit of implementing the monetary policy, it could be possible that the more information on monetary policy conducts, the better indicator we have.

3.1 Key Policy Instruments

It goes back as far as the early stage of Vietnam economic reform when reserved require- ment ratio (RRR) was rarely used to control for money supply. As the banking system scale becomes more massive since 1999, the SBV uses RRR with increasing frequency, especially during the time fighting high inflation. Refinancing has been used in Vietnam since 1991 in order to facilitate liquidity. It includes two forms: re-discount and refinance. In 2003, SBV created an interest rate corridor on the interbank market by regulating the rediscount rate as floor rate and refinance rate as cap rate. In July 2000, open market operations (OMOs), a more market-oriented policy tool, was introduced. SBV frequently transacts the central bank bill to sterilize operations derived from foreign capital interventions. Both refinancing and OMOs reflect the liquidity facility supplied by the SBV, but these data are not available. Therefore, we look at the net change by using the net claims on deposit banks as a proxy.

3.2 Constructing the Monetary Policy Stance Index

The construction of the policy index requires us to categorize the change in each monetary series. We follow most of the literature on monetary policy stance index to assign value in a set of three choices (1, 0, −1) to represent a tightening change, no change, and an easing change in the policy reactions, respectively (Bernanke and Blinder, 1992; He and Pauwels, 2008; Xiong, 2012).

For rate-based policy tools, we regard the direction of the change as policy stance. For example, a decrease in the interest rate or the reserved requirement ratio are treated as easing change. The rest of the variables need thresholds to identify their changes.

We filter the M2 and domestic credit growths by employing the Hodrick-Prescott method and keep the cyclical components. All the growth rate is calculated as the per- centage change during the past twelve months unless otherwise stated. The one standard deviation of each series is used as a threshold to classify the fluctuations. We mark tight- ening (easing) change for any cyclical component which decreases (increases) more than one standard deviation. The rest is treated as an unchanged one.

Applying the above method to net claims on deposit banks seems unreasonable since it fluctuates wildly in terms of percentage changes. We rather use the average of absolute month-on-month change as a criterion. If a net claims increase (decrease) more than 15,116 billion dong, the change is viewed as a big one, and the corresponding monetary stance is then defined as easing (tightening). This criterion is approximately equal to 80% of the compulsory sterilization bond issued by the SBV to absorb the banks' excess reserves from

commercial banks in early 2008. This event reflects the strong reaction of the SBV to curb surging inflation and also shows a clear signal of monetary stance to the economy. Hence, this threshold balances the risk of under-identifying and over-identifying the right signal of changes to the policy stance.

After obtaining the policy change of all variables, we sum up them before constructing the overall monetary policy stance change index, denoted by S_t. Similar to the single index of each policy tool, we assign value to S_t in a set of three choices (1, 0, −1) to represent a tightening change, no change, and an easing change, respectively, as follows:

$$S_t = \begin{cases} 1, \text{if total sum is greater than 0} \\ 0, \text{if total sum is equal to 0} \\ -1, \text{if total sum is smaller than 0} \end{cases} \quad\quad (1)$$

It is noteworthy that we follow He and Pauwels (2008) to assume equal importance to all the instruments when calculating the sum. This assumption deals with the opposite directions that happen 24 times in our sample period. The overall stance can be no change if the different signs cancel out each other or determined by the majority of changes. For example, in June 2007 the SBV increased reserved requirement ratios while rising the net claims on deposit banks by 16, 655.7 billion dong. The former stands for the tightening and the latter represents the easing, leading no change in the overall monetary policy stance. In February 2008, the policy stance index was specified by easing in both domestic credit and net claims on deposit banks together with tightening in various interest rate and reserved requirement ratio.

Figure 1: Policy stance index: 1999-2015 (Benchmark)
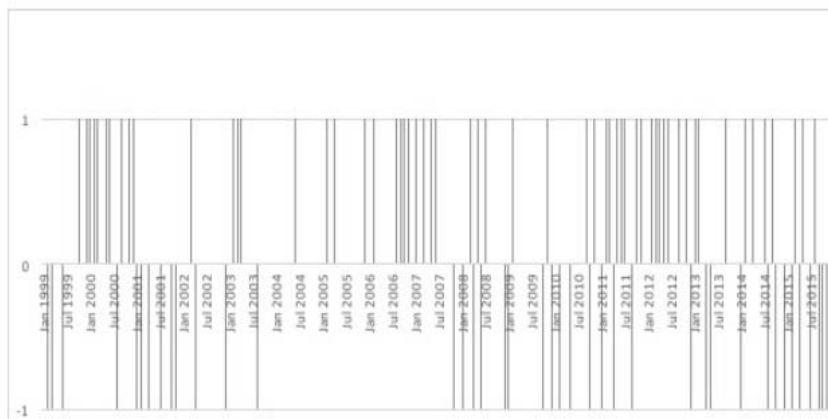
Figure 2: Policy stance index: 1999-2015 (Proposed)
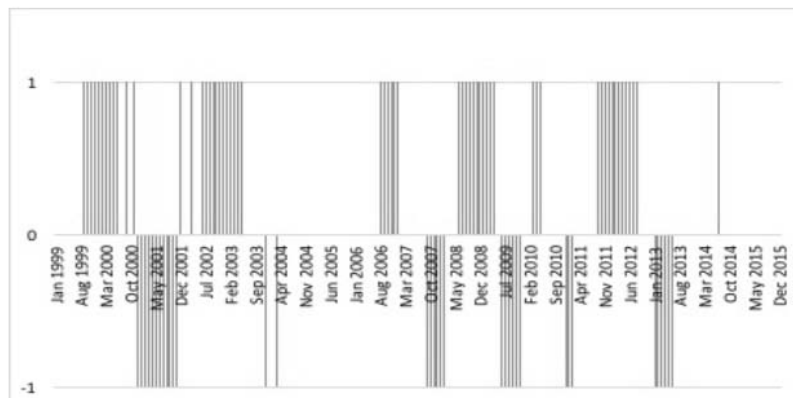
3.3 An Overview of the Policy Stance Index

The policy stance index plotted in Figure 1, in general, captures most of the fun- damental changes in the stance of the SBV's monetary policy. The consequence of the Asian crisis in 1997 reduced the world price and demand and in turn, dampened the domestic and foreign demand for Vietnam products. The year 2000 first time witnessed a slight deflation after persistent inflation. To boost the economy, SBV implemented an

expansionary monetary policy. For example, SBV cut the required reserves ratio from 10% to 7% in March 1999, then to 5% in July 1999. It also cut the refinance rate in June, September, and November of 1999. In April and August 2000, SBV reduced the discount rate by 0.6% each time. The average growths of money and credit in the period 1997-2003 were about $30 - 40\%$ and the Vietnam dong was devalued about 36%. Inflation came back in the year 2004 with 9.5% which was much higher than the Vietnam government's targeted rate, 6%. To curb the inflation, SBV started to tight the monetary policy by increasing interest rate and fixing the exchange rate since 2004. The Vietnam Ministry of Finance and SBV used the administrative tools to adjust interest rate rather than indirect monetary policy (Camen, 2006). Inflation, after a slight drop in 2006, had risen sharply to 12.6% in 2007 and to 20% in 2008. Several reasons have been put forward to explain the sharp rise in inflation in 2007-2008. They are a sharp increase in the minimum wage, an increase in international commodity prices, loose and inflexible monetary policy, rigid and flexible exchange rate management policies. Moreover, Vietnam's opening up to the world since Vietnam's accession to the WTO at the end of 2006 had led to the influx of foreign indirect investment into Vietnam, driving up stock prices and asset prices. In order to stabilize the exchange rate, the SBV had injected a significant amount of Vietnam dong into the economy, contributing to the exacerbation of the inflation. The 2008-2009 world economic crisis has contributed to lowering inflation in Vietnam since late 2009. The fall in international prices together with the decrease in aggregate demand has helped Vietnam reverse the dreaded rise in inflation in 2008. As the government's stimulus packages began to increase from the second quarter of 2009, money supply also began to increase sharply, and credit also showed similar signs. Commercial banks were becoming less cash-strapped and trying to raise the interest rates to attract deposits. As a result, the interest rate competition had begun to push up lending rates. As a result, SBV changed its stance to contractionary policy since February 2011.

The policy change index computed in this part seems to represent the crucial changes in the monetary policy of Vietnam. However, the index cannot capture the pressure of tightening or easing in a given period. For instance, SBV stops tightening or changing to easing for one month. This temporary signal may confuse those who use this index. Two reasons are used to explain this drawback. First, the construction of this index are based on multiple variables that may cancel out each other, taking October 2008 as an example. SBV increases the refinance by 1% to 14% while decreases the base rate by 1% to 13%. Second, the SBV usually adjusts the interest rates and the required reserve ratio with a broad margin. Therefore, the current index only records the policy change one time for a long period. For example, SBV raises the discount rate from 6% in February 2008 to 10% in November 2008 and raises the refinance rate from 7.5% in February 2008 by 5.5% in May 2008. The margins of required reserve ratio are $1\% - 5\%$ which is much higher than the one, 0.5%, frequently employed by the Bank of China.

We propose a new way to construct the Vietnam monetary policy stance index. Instead of using all of the policy instruments, we only use the growth rates of money supply (M2) and domestic credit. The policy changes of each variable and the overall stance are defined as in subsection 3.2. Figure 2 describes the

Table 2: A comparison between benchmark and proposed stance indices

propo   ance in a given period.
Table   t measures the number
of tim

	Tightening	Easing	No change	All
Benchmark	58	41	105	204
Proposed	59	35	110	204
Fit	28	12	62	102
% Fit/Benchmark	48.3	29.3	59.1	50

The proposed index captures 50% stance of the benchmark index. No change ranks first with 59.1% which is higher than the average. The fit of tightening stance is much higher than that of easing with 48.3% and 29.3%, respectively. The numbers of tightening stance in both indices are roughly equal while the amount of easing stance in the proposed index is lower than that in the benchmark case.

4 AN ORDERED PROBIT APPROACH

4.1 The Model

We assume that the SBV sets its policy stance S_t^* by the following linear function at time t.

$$S_t^* = X_{t-1}'\beta + \epsilon_t \tag{2}$$

where S_t^* is a latent variable capturing a preferred monetary policy change by the SBV with regard to the policy change index. X_{t-1} is a k × 1 vector of macroeconomic characteristics covariates of the economy. β is a k × 1 parameter vector and ε_t is a residual term. The equation (2) is analogous to the Taylor monetary reaction function where the policy rate responds to the fluctuations of one-period lag of macroeconomic variables. The explanatory variables include the growth rate of index of industrial production (IIP) and the inflation. In Vietnam's monetary framework, the SBV actively intervenes in the foreign market to stabilize the dong value; therefore the growth rate of the nominal effective exchange rate enters as an external force. The growth of the Vietnam stock index is also used to explain the SBV's stance.

This paper uses equation (2) as the baseline model. Some papers study the reaction of policy stance to the deviation of a set of macroeconomic variables from its targets. When the targets are set by policymakers, this type of model is inappropriate in Vietnam because of the missing targeted values of inflation before 2005 and of the low credibility. The targeted inflation had not been announced until 2005 while our sample starts from the year 1999. Camen (2006) pointed out that in Vietnam the economic growth has been the de facto primary goal, it is usual to observe the targeted inflation being overshot. On the other hand, we run the regression with the proposed index for comparison.

As the aforementioned part shows, there are three policy action: easing, no change, or tightening, which indicates three regimes for the sake of S_t^*. These three regimes imply that there are two unknown cut points $\tau_1 < \tau_2$ and we can define the following policy index measure S_t

$$S_t = \begin{cases} 1, \text{if } S_t^* \leq \tau_1 \\ 0, \text{if } \tau_1 \leq S_t^* \leq \tau_2 \\ -1, \text{if } \tau_2 \leq S_t^* \end{cases} \tag{3}$$

Given the standard normal assumption for ε_t, the conditional probabilities of the observed policy changes are followed

$$\text{Prob}(S_t = -1|X_{t-1}) = \Phi(\tau_1 - X_{t-1}'\beta)$$
$$\text{Prob}(S_t = 0|X_{t-1}) = \Phi(\tau_2 - X_{t-1}'\beta) - \Phi(\tau_1 - X_{t-1}'\beta) \tag{4}$$
$$\text{Prob}(S_t = -1|X_{t-1}) = 1 - \Phi(\tau_2 - X_{t-1}'\beta)$$

where Φ is a normal distribution cumulative function. The econometric structure of equation (4) reveals the movement of the monetary policy stance. It should be noted that the parameter β itself is of limited interest because it is inadequate to determine the sign of the marginal effect. The sign also depends on the level of covariates X_{t-1}. The direction effect of X_k on the probabilities $P(S_t = -1|X_{t-1})$ and $P(S_t = 1|X_{t-1})$ is unambiguously determined by the sign of β_k, whereas the sign of β_k does not always determine the direction effect for the outcome 0 (no change). The parameters β, τ_1, and τ_2 can be estimated by maximum likelihood method. We employ the Stata 14 software.

4.2 Data

In Table 3, we briefly describe the variables and the sources of the data. The monthly observations for all variables from 2001M7 to 2015M12 are used. The year-on-year percentage change in real IIP growth, CPI inflation, NEER and Vnindex growth are incorporated into the model to capture real output, inflation, the SBV's foreign exchange policy, and the transaction of Hochiminh stock exchange. We employ the ADF test for all variables and see that all of them are stationary. We provide graphs for these covariates in Figure 3.

Table 3: Definition and data sources of variable

Variable	Definition	Source
IIP	y-o-y change in real IIP	General Statistics Office, Vietnam
Inflation	y-o-y change in consumer price index	International Financial Statistics, IMF
NEER	y-o-y change in nominal effective exchange rate	Author's calculation
NFA	y-o-y change in net foreign asset	General Statistics Office, Vietnam
Vnindex	y-o-y change in Vnindex	Hochiminh Stock Exchange

Figure 3: Variables used in estimation
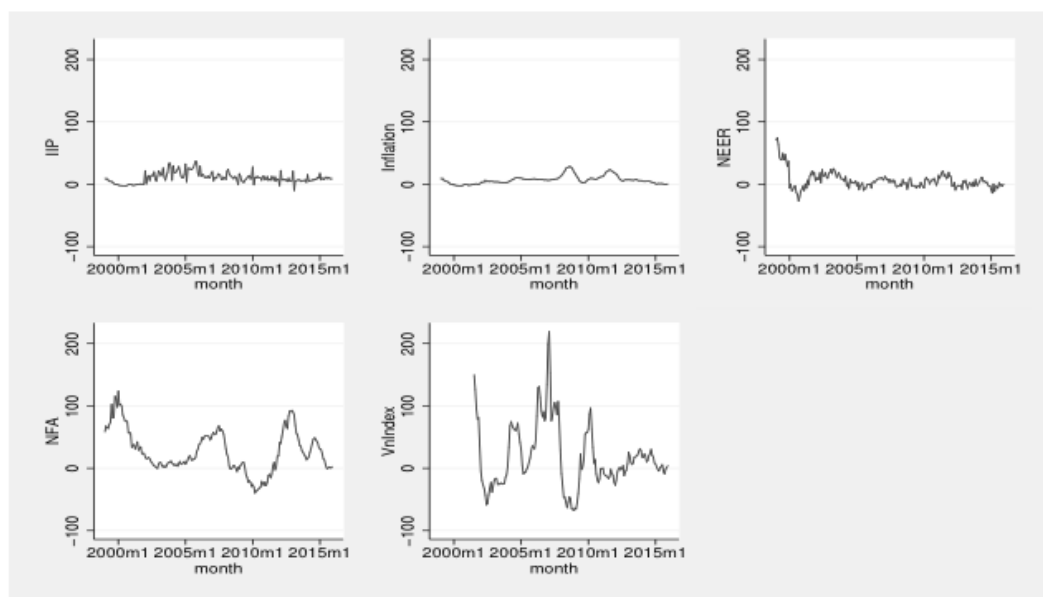
The multicollinearity among variable in X_{t-1} is one of the potential problem. However, Table 4 shows the small correlation among explanatory variables that implies a weak evidence of multicollinearity. Hence, we abstract this issue in this paper.

4.3 Results

Table 4: Correlation among variable in X_{t-1}

	IIP	Inflation	NEER	NFA	Vnindex
IIP	1.0000	-	-	-	-
Inflation	0.0015	1.0000	-	-	-
NEER	-0.0892	-0.0105	1.0000	-	-
NFA	-0.1424	-0.1551	-0.1409	1.0000	-
Vnindex	-0.0535	-0.3137	0.0807	0.0342	1.0000

The estimation results are shown in Table 5. Regression 1 uses the benchmark stance index as a dependent variable while regression 2 uses the proposed index. All the explana- tory variables are lagged by one month. Most of the coefficients are statistically significant except for Vnindex. The coefficient of NFA becomes insignificant when we run regression 2. Although the thresholds τ_1 and τ_2 are used for computations, they are not our key interest. The *pseudo* R^2 is interpreted as a goodness of fit. Regression 2 has a higher *pseudo* R^2 as compared to regression 1. However, both of them are relatively low that is common in the ordered probit method.

Table 5: Estimation result

	(1)	(2)
Model	Benchmark	Proposed
IIP	0.0207*	0.0191*
	(0.0110)	(0.0111)
Inflation	0.0320**	0.0645***
	(0.0146)	(0.0162)
NEER	0.0219**	0.0428***
	(0.0111)	(0.0117)
NFA	0.0079**	-0.00076
	(0.0033)	(0.0033)
Vnindex	0.00044	-0.0021
	(0.00162)	(0.00166)
τ_1	-0.151	-0.205
	(0.235)	(0.238)
τ_2	1.393***	1.513***
	(0.251)	(0.261)
Observation	173	173
Pseudo R2	0.041	0.112

Standard errors in parentheses
$***p < 0.01, **p < 0.05, *p < 0.1$

The estimation results reveal several things about the SBV's policy reaction. Firstly, the IIP growth, inflation, and NEER play a crucial role in the SBV's objective function which corresponds with the conventional wisdom about the SBV's monetary policymaking. According to the State Bank of Vietnam's Law in 1992 and adjusted in 2010, the ultimate goals of SBV are to promote economic growth and to stabilize the value of the currency. The latter is interpreted as the stability of the exchange rate. Secondly, the SBV does not respond to Vnindex. The monetary policy may affect the stock price, but this is not our interest in this paper. Thirdly, the SBV reacts to NFA in the benchmark model but not in the proposed one. The SBV manages the inflows of foreign capital by frequently intervening in the foreign exchange market. However, the proposed stance index fails to capture this aspect.

In an ordered probit model, the interpretation of the marginal effects is not straightfor- ward as in the standard ordinary least square. The partial effect of one variable depends on the coefficients of all variables

and their levels. Hence, in Table 6 and 7 we report the marginal probability of the variable at the value of mean for regression 1 and 2, respectively.

Table 6: Partial effects for regression 1 at mean of independent variables

Variables	Prob($S_t = -1$)	Prob($S_t = 0$)	Prob($S_t = 1$)
IIP	-0.0054*	-0.0014	0.0068*
	(0.0028)	(0.0011)	(0.0036)
Inflation	-0.0084**	-0.0022	0.0105**
	(0.0038)	(0.0016)	(0.0048)
NEER	-0.0057**	-0.0015	0.0072**
	(0.0029)	(0.0011)	(0.0036)
NFA	-0.0208**	-0.0005	0.0026**
	(0.0008)	(0.0004)	(0.0011)
Vnindex	-0.0001	-0.00003	0.00015
	(0.0004)	(0.0001)	(0.00053)

Standard errors in parentheses
$***p < 0.01, **p < 0.05, *p < 0.1$

The first line of Table 6 describes the partial effect of the percentage change in IIP growth on specific probabilities of monetary policy change. One percent increase in IIP growth leads to 0.0054% decrease in the probability of an easing change in monetary policy. By contrast, the probability of a tightening policy change will rise by 0.0068%. The effects on both easing and tightening policy changes are statistically significant at the 10% level. The effects of inflation, NEER, and NFA on policy changes are similar to that of IIP growth in sign but more significant. These policy changes are in line with the conventional knowledge. The partial effects of Vnindex have the expected sign but are insignificant.

5 CONCLUSION

This paper constructs the monetary policy stance index of the SBV who implements various policy instruments. This index fails to capture the pressure of policy stance in a given period. We propose a new index that includes only the growth rates of money supply and domestic credit. This proposed index reasonably replaces the benchmark one in the sense that it well captures most of the fundamental changes as well as the pressure given a period of the SBV's monetary policy. A comparison of the monetary policy reaction functions with two indexes based on the ordered probit model is then used to reinforce our proposal.

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CAPITAL STRUCTURE AND PERFORMANCE OF VIETNAM LISTED FIRMS

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ABSTRACT: *Capital structure is one of the most important decision for any business because of their impact on firm's performance. This research aims to examine the impact of firm's capital structure on financial performance of all Vietnam non financial listed firms over the past seven-year period from 2010 to 2016. A sample with 3136 observations of 448 firms was used in the Tobit regression model. The study used ROA (return on assets) as the measure of firms' performance. Six independent variables including capital structure (TD), firm size (SIZE), asset tangibility (AS), liquidity (LQ), management capacity (MA) and interest rate (RATE). The results of this model show that there is a significant negative impact of capital structure proxies as TD, LQ and RATE on the performance of firms. And, there is a significant positive relationship between SIZE, AS, MA and the performance of firms. These findings suggest that firms listed on Vietnam Stock Market can improve their performance through decreasing the proportion of debt and amount of investment on assets, remaining and utilizing resources reasonably to expand firm size and enhance management capacity of firms.*

***Keywords:** Capital structure; Debts to Assets; Return on Assets; Performance*

1. INTRODUCTION

The topic of impact of capital structure on firm performance has been subject of many researchers because capital is most important to run the activities of a firm. Modigliani and Miller (1958) indicated that, in a perfect capital market, there is no difference between debt and equity financing regarding the value of the firms. Moreover, capital structure not only influences the return a firm earns for its shareholders, but also whether the firm survives less fortunate economic shocks. (Kraus and Litzenberger, 1973; Harris and Raviv, 1990). Or, according to Gleason et al. (2000), the utilization of various levels of debt and equity in the firm's capital structure is one such firm-specific strategy used by managers in the search for improved performance. If the firm does not possess capital up to a specific limit, it could not implement its business targets. And, capital structure decision is the mix of debt and equity that a firm used to finance its business (Damodaran, 2001).

Berger et. al (2006) also concluded that more efficient enterprises were more likely to earn a higher return from a given capital structure, and that higher returns can act as a cushion against portfolio risk so that more efficient firms are in a better position to substitute equity for debt in their capital. Therefore, capital structure choice will cause a significant impact on firm's performance (Roy Badar and Asif Saeed, 2013). And, the relationship between capital structure decisions and firm performance has been extensively investigated in the past few decades. As a result, capital structure is imperative for a firm's survival and growth, as it plays a primary role in its performance from which the firm can achieve its long-term goals and objectives.

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The objective of this study is to examine impact of capital structure on performance of 448 listed firms on Vietnam stock market. The study chose 6 variables relating to capital structure to measure performance of listed firms on Vietnam stock market. Besides, during the period of study from 2010 to 2016, Vietnam enterprises witnessed many challenges and difficulties internally and externally, especially fiscal crisis from 2008. However, there have been little empirical studies being carried out in Vietnam in this period. Hence, the contribution of this study will help managers of firms to make better decisions on the proportions of their capital structure. It also provides and adds new knowledge to corporate managers as a benchmark in making their own decision on the firm's performance.

The paper includes 5 sections in which introduction is section 1. The rest of the paper is organized as follows: Section 2 provides a background of literature, relating the relationship between capital structure and firm performance. Section 3 describes research methodology with data, variables, research model and hypothesis. While section 4 describes and discusses the empirical results. Conclusions and recommendations are offered in the last section.

2.   LITERATURE REVIEW

Literature review includes some previous researches that are implemented to analyze the impact of capital structure on firm's performance. These studies have undertaken to build up a clear picture related with the relationship among capital structure and firm's performance. However, past studies show different results associated with capital structure and firm's performance.

In the study of Modigliani and Miller (1958), they wrote a paper on irrelevance theory of capital structure and affect of capital structure on firm's performance. At present, many research have been carried out to determine the impact of capital structure on firm's performance. There are many different views about affect of capital structure on firm's performance. Ebaid (2009) indicated that the selection of capital structure of a firm is influenced by many factors. Therefore, it is easy to understand that financial theories offer different perspectives on the relationship between capital structure and performance of firm.

Jensen (1986) concluded that increasing debt level in capital structure has positive effects on firm's performance by reducing agency problem between shareholders and managers. Or in study of Harris and Raviv (1990), there is a negative relationship between debt in capital structure and firm's performance. The same views about a negative relationship between capital structure and firm's performance are also found in many empirical evidences of Rajan and Zingales (1995), Gleason et al. (2000), and Fama and French (2002). In 2005, in study of Abor (2005), the author analyzed the relationship between capital structure and performance of listed firms on the Ghana Stock Exchange (GSE) during a five-year period. Regression analysis is used in the estimation of functions relating firm's performance with measures of capital structure. Regarding to the relationship between total debt and return rates, the results show a significantly positive relationship between the ratio of total debt to total assets and return on equity.

Moreover, in the study of Daniel Kebede (2011), he investigates the determinants of capital structure in Ethiopia firms by using quantitative approach method. The data is collected from the financial statement of 13 small scale enterprises for the period from 1998 to 2002. the researcher also made unstructured interview method to collect data from concerned individuals and organizations. In the study the researcher used leverage as dependent variable whereas size, tangibility, profitability, earning volatility, growth and age are used as independent variables. The finding of the study reviles that size and tangibility has positive relationship with leverage while profitability, earning volatility, growth and age has an inverse relationship with leverage.

Study by Saeed and Rasheed (2013) which assessed the impact of capital structure on the performance of banks in Pakistan for the period from 2007 to 2011. The study found a positive relationship between determinants of capital structure and performance of banking industry. And the performance was measured by return on assets (ROA), in which determinants of capital structure included long term debt to capital ratio, short term debt to capital ratio and total debt to capital ratio. It means that there is a positive relationship between capital structure and firm's performance. Even, in a more recent study, Mubeen and Akhtar (2014) studied the relationship between capital structure and textile firm's performance in Pakistan. The author used a sample of 155 textile firms for the years 2006 to 2011 basing on regression analysis. The result indicated that capital structure positively impacts firm financial performance and shareholder wealth.

Contrary to the above-mentioned viewpoint that capital structure negatively relates to firm's financial performance, Gleason et. al (2000) indicates that total debt has a significant, negative influence on performance. There are two implications drawn from the result. First, with presence of control variables, capital structure has influence significantly on firm performance. Second, the negative coefficient indicates that retailers, in general, use more debt in their capital structure than would be appropriate. Thus, this overleveraging negatively affects firm performance. This result supported by Agarwal and Elston (2001) when debt has a negative influence on profitability of the firm. Thus, the benefits of increased access to capital, and monitoring of firms by banks do not seem to be realized in either higher profitability or stronger growth. However, profitability of the firm is positively influence by sales and growth in sales. This result is parallel with Chen et. al (2004) when debt ratio is negatively related to ROA. In the study of Chen et. al (2008), the result indicated that there is a negative change in performance when selected firms increase debt ratio. Study by Jermias (2008), showed that leverage and performance is also significantly negative. The results indicate that competitive intensity and business strategy do affect the leverage performance relationship such that it is less negative for cost leaders than for product differentiations. The results are consistent with the view that debt financing and debt covenants not only offer cost leaders the benefit of tax advantages, but also accord increased efficiency due to constraints imposed by debt holders.

Until 2009, Ebaid (2009) investigated the impact of capital structure on performance of listed firms on Egyptian stock market. The researcher used short term debt (STD), long term debt (LTD) and total debt (TD) data in a period from 1999 to 2005 to analyze the relationship. Ebaid (2009) also used least square regression model to have the result. The study by Ebaid (2009) revealed that total debt are significantly negative influence on the performance measured by return on asset (ROA) of the firm. However, he proposed that there is not significant impact of the debt on financial performance measured by both gross profit margin (GPM) and return on equity (ROE).

Casmir and Anthony (2012) said that a capital structure of a firm has a negative impact on firm's performance. They proved that highly leverage capital structure caused negative impact on firm's performance, but it also provides tax rebate on interest expenses. They used different variables to obtain results such as return on assets, debt to equity ratio, assets turnover ratio, firm's size and age, asset tangibility, growth and industrial sector. They also used ordinary least square (OLS) model of estimation. They proved that ROA and asset turnover are important measure of firm's performance. There are also many other empirical studies proving a negative relationship between capital structure and firm performance like studies of Zeitun and Tian (2007), Chbber and Majumdar (1999) and Rao et. al (2007). All of them confirmed that there is a negative relationship between financial leverage and performance. Their results further suggest that liquidity, age and capital intensity have significant influence on financial performance.

To summarize, recent capital structure studies have produced diverse findings that prove the impact of capital structure on the performance of the firm. Significant negative relationships between capital structure

and the performance of the firm were found, for example, by Gleason et. al (2000), Agarwal and Elston (2001), Chen et. al (2004), Chen et. al (2008), Jermias (2008), Ebaid (2009), and Casmir and Anthony (2012). Significant positive relationships, on the other hand, were found by Ebaid (2009), Jensen (1986), Harris and Raviv (1990), Rajan and Zingales (1995), Gleason et al. (2000), Fama and French (2002), Abor (2005), Daniel Kebede (2011), Saeed, M, Gull, A, Rasheed, M (2013), and Mubeen and Akhtar (2014).

3. DATA, MODEL, MEASUREMENT OF VARIABLES AND METHODOLOGY

3.1. Sample selection

The data is collected in a period of 7 years (2010 – 2016), besides the data that forms a panel data set covering in the same period with all listed firms on Vietnam stock market. The data was obtained from annual financial statements of firms consisting of 3136 observations. The researchers then summarized, arranged and computed the required ratios to represent variables in the study model.

To analyse the determinants, panel data regression techniques were used and tested via the STATA (Version 14) computer software. According to Klevmarken (1989) and Baltagi (1995), panel data contributes several benefits. First, panel data can control individual heterogeneity, which in consequence can cause misleading and biased results. It also reduces multi co linearity problems (as is often the case in time series studies) and provides more data information due to pooling individual and time dimension (in which provides more reliable parameter estimates), more data efficiency, variability and captures a better dynamic adjustment.

3.2. Definition of variables

Firm's performance (ROA), measured based on book values calculated from financial statements represented by return on total assets ratio. However, ROA is characterized by a censored data sequence, and ROA is only in the $[0, +\infty]$ segment. In fact, the after-tax profit can be negative (the business loses) so ROA can be negative. However, when evaluating the data in the research model, negative values have been replaced by zero, indicating that the business does not generate any interest from equity or assets.

Capital Structure (TD), measured by total debts on total assets ratio.

Firm size (SIZE), measured by the logarithm of total assets (unit 1 billion Vietnamese Dong).

Asset tangibility (AS), measured by net fixed assets on total assets

Liquidity (LQ), calculated by book value of short-term assets on short-term debt.

Management Capacity (MA), measured by number of members in firm's control board

Interest Rate (RATE), measured by Vietnam market offered rate

3.3. Empirical model

According to Gurajiti (2004), the author indicates that with the censored dependent variable, the value is not allowed to be less than a certain value. In this case, the Tobit regression model is usually more appropriate for evaluating the study data. Therefor, to test the relationship between capital structure and firms' performance, we used a Tobit model for panel data with random effect as follows:

Firm's performance

$$\text{ROA}^*_{it} = \alpha_0 + \alpha_1 \text{TD}_{it} + \alpha_2 \text{SIZE}_{it} + \alpha_3 \text{AS}_{it} + \alpha_4 \text{LQ}_{it} + \alpha_5 \text{MA}_{it} + \alpha_6 \text{RATE}_{it} + u_i + \varepsilon_{it}$$

With condition: $u_i \sim N(0, \sigma_\alpha^2), \varepsilon_{it} \sim N(0, \sigma_\varepsilon^2)$, and ROA is always positive, we indicate that:

$\text{ROA}_{it} = \text{ROA}^*_{it}$ if $\text{ROA}^*_{it} > 0$ and $\text{ROA}_{it} = 0$ if $\text{ROA}^*_{it} \leq 0$

3.4. Hypothesis

The present study will test the following hypothesizes:

- H1: There is existence of negative relationship between Capital Structure and Firm's Performance

- H2: There is existence of positive relationship between Firm Size and Firm's Performance

- H3: There is existence of positive relationship between Asset Tangibility and Firm's Performance

- H4: There is existence of negative relationship between Liquidity and Firm's Performance

- H5: There is existence of positive relationship between Management Capacity and Firm's Performance

- H6: There is existence of negative relationship between Interest Rate and Firm's Performance

4. RESULTS AND DISCUSSIONS

4.1. Descriptive Statistics

The Table 1 below shows the descriptive statistics of selected variables. The results indicate that the mean of performance variable (ROA) of all listed on Vietnam Stock Market is about 5.90% over the period from 2010 to 2016, generally, it is not high. In addition, standard deviation of ROA is 6.89%, minimum and maximum values are 0.00 and 78.37% respectively. It indicates that there is an enormous difference in performance capacity between the firm having the largest ROA and the firm having the lowest ROA.

Table 1. *Descriptive Statistics for Variables.*

Variable	Mean	Std. Dev.	Min	Max
ROA	5.902	6.891	0.000	78.370
TD	51.829	39.663	0.198	1606.901
SIZE	13.366	1.455	9.211	19.011
AS	39.457	22.646	0.100	97.740
LQ	2.425	5.756	0.004	229.578
MA	13.768	3.435	6.000	31.000
RATE	5.663	3.395	2.130	12.130

Source: Financial statements of listed firms and own computation from Stata Version 14

The mean for the total debt to total assets (TD) is 51.83, indicating that more than 51% of the total assets are financed with debt. However, minimum value of TD is only about 0,20%, while maximum value of TD reaches more than 1606%. This result indicated that most listed firms on Vietnam Stock Market depend on debts and this is the source of business risks. Besides, mean of Firm Size (SIZE) is 13.37%, minimum value is 9.21% and maximum value is 19.01%. Fixed asset to total assets ratio (AS) on the other hand had a minimum and maximum value of 0.10 and 97.74 respectively with a mean of 39.45%. It indicated that mean of current assets of Vietnam listed firm account for over 60.55%. It is also the base for analysing the efficiency of business performance. Moreover, mean of liquidity (short-term assets/short-term debt) which is one of important ratios affecting to firm's performance is account for 2.43%, minimum value is 0.004%, and maximum value is 229.58%. There is an enormous difference between the firm having highest rate of liquidity ratio and the firm having lowest liquidity ratio. Besides, management capacity (MA), measured by number of members in firm's control board, are from 6 to 31 people. In the period from 2010 to 2016, Vietnam market offered rate had a minimum and a maximum value of 2.13% and 12.13% respectively with a mean value of 5.66%.

4.2. Correlation analysis

From the result of table 2. indicates that there are negative correlation relationships among listed firms' performance and four independent variables (Capital Structure - TD, Firm size - SIZE, Asset tangibility – AS, Interest Rate - RATE). It means that an increase in ratios of total debts on total assets, total assets, net fixed assets on total assets and market offered rate will lead the reduction of the performance efficiency of firms or ROA will be reduced. Besides, firms' performance has positive correlation with two remaining variables (Liquidity - LQ, Management Capacity – MA. As a result, listed firms want to enhance efficiency of their performances, they will have to reduce dependence of debts, to use fixed assets reasonably, and to have number of control board' members suitably.

Table 2. Partial correlation results among Independent Variables and performance variable.

Variable	ROA	TD	SIZE	AS	LQ	MA	RATE
ROA	1.0000						
TD	-0.2865	1.0000					
SIZE	-0.0220	0.1664	1.0000				
AS	-0.0549	-0.0332	0.1152	1.0000			
LQ	0.0936	-0.1864	-0.0995	-0.0286	1.0000		
MA	0.1033	0.0596	0.3954	-0.0132	-0.0895	1.0000	
RATE	-0.0374	0.0138	0.0766	-0.0060	0.0155	0.0037	1.0000

Source: Financial statements of listed firms and own computation from Stata Version 14

In addition, the table 2 also expresses correlations among independent variables. The correlations are not so high from -0.0995 to 0.3954. The correlation of 0.7 and above is considered as highly correlated. However, the above data with correlation values are less than 0.7, the low correlation coefficients show that there are have no multicollinearity problems in the researching model or there are have no multicollinearity problems among chosen financial variables.

4.3. Multicollinearity test

Multicollinearity refers to a high correlation relationship among the explanatory variables within a multiple regression model. Or it is the lack of independence among the explanatory variables in research model.

Table 3. Multicollineary test.

Variable	VIF	1/VIF
TD	1.06	0.9396
SIZE	1.25	0.8008
AS	1.02	0.9786
LQ	1.05	0.9560
MA	1.20	0.8365
RATE	1.01	0.9925
Mean VIF	1.10	

Source: Financial statements of listed firms and own computation from Stata Version 14

We used Variance Inflation Factor (VIF) to test multicollinearity among independent variables. The result in table 3 shows that VIF test is below 10 (from 1.01 to 1.25), and 1/VIF test is over 0.1. The result proved the independence of research selected variables.

4.4. Regression Analysis

Regression analysis is used to assess the relationship between firm's performance (ROA) and capital structure (TD, SIZE, AS, LQ, MA and RATE) in which five control variables are SIZE, AS, LQ, MA and RATE (Firm Size, Asset Tangibility, Liquidity, Management Capacity, and Offer Interest Rate). The regression result on table shows that R-square statistics of the model was 62 % and 78% respectively. The result indicates that with the value of Wald chi2 (6) = 109.26 and the value of Prob = 0.0000, the research model is appropriate to analyze the impact of capital structure on listed firms' performance on Vietnam Stock Market.

Table 4. Regression results: Impact of capital structure of listed firms' performance.

Variable	Coefficient	Std.Error	z-Statistic	Prob.
ROA				
TD	-0.1410	0.0070	-20.08	0.000***
SIZE	0.6909	0.1486	5.65	0.057*
AS	0.0567	0.0064	-8.90	0.000***
LQ	-0.0511	0.0155	-3.31	0.004**
MA	0.2011	0.0718	2.80	0.000***
RATE	-0.1173	0.0217	-5.39	0.044**

***Siginificant at 1%, **Siginificant at 5%, and *Siginificant at 10%

Source: Financial statements of listed firms and own computation from Stata Version 14

The regression result in table 4 shows that all selected variables of capital structure were the statistically significant factors affecting listed firms' performance measured by ROA. In which, the debt on asset ratio, asset tangibility and management capacity are independent variables with high significance at 1%. Liquidity and offer interest rate has statistical significance at 5%, and firm's performance has statistical significance at 10%. This result ensures that all six capital structure variables affecting to firms 'performance.

The total debts on total assets ratio (TD) is used as a proxy for capital structure and it has a negative and significant relationship with the dependent variable (ROA) which means that, when the total debts on total assets ratio of listed firms increases, it will result in decreasing of firms' performance. Or, if the total debts on total assets ratio of firms increase 1%, firm's performance will reduce 0.14%. Moreover, regression results also suggest that TD is statistically significant negative association with return on asset (ROA) with P-value of 0.000. This result implies that as a firms' debt level increases its return on asset is expected to decline because the excessive use of the leverage might impose high interest costs.

The firm size which measures log of total assets has positive and significantly affects firms' performance at 10% significant level on ROA which indicates that larger firms can have more opportunities to enhance their performance results because it is easier for them approaching more debt sources with lower cost. The result indicates that when firm size of listed firms increases, it will result in increasing of firms' performance. Or, if firm size increase 1%, firm's performance will improve 0.69%.

The composition of the asset structure (net fixed assets on total assets ratio – AS) has a positive and significant impact on listed firms' performance at 1% significant level. This result indicates that firms with a high ratio of AS have a higher performance ratio, which implies that large firms often use their fixed assets efficiently, so it has a positive impact on their performance. The result also indicates that if net fixed assets

on total assets ratio increase 1%, firm's performance will improve 0.06%.

Liquidity or risk liquidity (LQ) has a negative relationship with listed firms' performance over the period 2010 to 2016. If liquidity increases 1%, firms' performance will decrease 0,05%. It is a significant impact of liquidity on firms' performance, therefore, the listed firms show have policies to manage liquidity reasonably.

The management capacity (MA) shows a positive impact firms' performance (ROA). This result proves that if firms having number of members in control board reasonably, it seems to support a improvement in firms' performance.

Final selected independent variable is RATE (Vietnam Market Offer Rate), the RATE variable has a negative influence on Vietnam listed firms' performance. The outcomes show that if firms have debts with high offer interest rate, it normally gains fewer profits. It is obviously that excessive cost of the leverage will impact to firms' profit. In this research, if RATE increases 1%, firms' performance will reduce 0.12%. Therefore, it is important for firms seeking low-cost loans.

5. CONCLUSIONS

This research examines the impact of capital structure on firms' performance. The annual data over the period from 2010 to 2016 of 448 listed firms is collected from Vietnam stock market. Based on research sample of the 448 listed firms and using financial performance measures (Capital Structure -TD, Firm size - SIZE, Asset tangibility - AS, Liquidity - LQ, Management capacity - MA and Vietnam market offer rate - RATE), exponential generalized least square and descriptive stat tools (OLS) and Tobit model are used to estimate results. The findings show that all the three financial variables, total debts on total assets ratio, liquidity ratio and Vietnam market offer rate, negatively impact on firms' performance. Besides, other three variables, firm size, asset tangibility, management capacity, positively impact on firms' performance.

These results, in general, lead to the conclusion that capital structure choice is an important determinant of firms' performance. The result proves that with the increase in leverage as well as loans with high interest rate negatively affects the firms' performance. Moreover, the firm size, the asset structure and the management capacity positively impact on firms' performance. The results recommend that corporate managers should not use so much leverage in their capital. In addition, managers should consider seeking low – cost loans, remaining number of members in control board reasonably, and managing liquidity risk suitably.

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CROWDFUNDING IN SOME ASEAN COUNTRIES AND IMPLICATIONS FOR VIETNAM

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ABSTRACT: *Crowdfunding is a method of raising funds to finance projects and businesses, in which money is collected from a large number of people via online platforms. It is an innovative way of accessing alternative funds for new projects and businesses with lots of benefits but also drawbacks and challenges for both investors and fundraisers. In this paper, we are going to (i) review some features of crowdfunding; (ii) analyze the development of crowdfunding in two ASEAN countries including Malaysia and Thailand; and (iii) providing a closer look at crowdfunding in Vietnam as well as making some implications for developing this method in Vietnam.*

Keywords: *Crowdfunding, alternative funds, startup companies*

1. INTRODUCTION OF CROWDFUNDING

1.1. Definition of crowdfunding

According to the European Commission (2018), crowdfunding is a method of raising funds to finance projects and businesses, in which money is collected from a large number of people via online platforms (i.e. websites that enable fundraisers to interact with the crowd). It is an innovative way of accessing alternative funds for new projects, businesses or ideas, and is mostly used by startup companies or growing businesses.
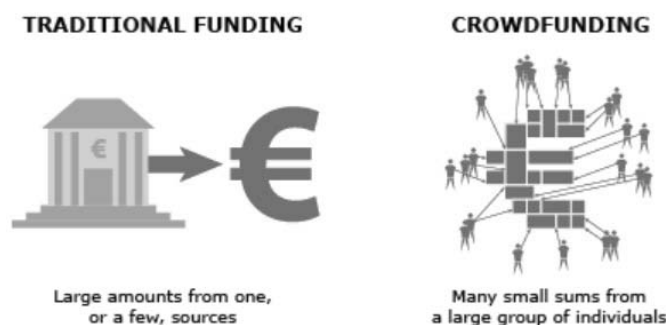
Fig. 1. *Traditional funding vs. Crowdfunding.*

Source: European Commission (2018)

1.2. Classifications of crowdfunding

As reported by the Financial Sector Deepening Africa (2017), based on return model, crowdfunding can be divided into four main types, including (i) loan-based crowdfunding (or peer-to-peer lending), (ii) equity-based crowdfunding, (iii) reward-based crowdfunding, and (iv) donation-based crowdfunding.

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- Loan-based crowdfunding (or peer-to-peer lending) is a financial return model, in which individuals lend money to a project or business with the understanding that the money will be repaid with interest. This method is litlle different from traditional borrowing from a bank, except that money is borrowed from lots of investors.

- Equity-based crowdfunding is a financial return model, in which individuals buy registered securities, by mostly startup companies or early-stage businesses. This method is similar to a venture capital or how common stock is bought or sold on the stock market.

- Reward-based crowdfunding is a non-financial return model, in which individuals donate to a project or business with the expectation of receiving a non-financial reward (e.g. goods or services) in exchange for their money.

- Donation-based crowdfunding is a non-financial return model, in which individuals donate to a project or business with no expectation of financial or material returns.

Because reward and donation-based crowdfunding are non-financial return models, they usually lack financial regurations. Meanwhile, loan and equity-based crowdfunding are typically regulated financial activities in most countries.

1.3. Benefits of crowdfunding

1.3.1. For borrowers

Overall, crowdfunding provides borrowers an opportunity to access money in an easier and cheaper way compared to traditional funding. Through online platforms, borrowers can quickly raise funds for their projects or businesses with no uprfront fees or collaterals. This is especially important for starup or early-stage companies which might be unable to access financial institutions' funding services. Furthermore, borrowers can also get marketing benefits, including: rising public attention around the project; receiving feedback and expert guidance on how to improve the project; estimating the potential customer base (De Buysere et al, 2012; Gatautis and Vitkauskaite, 2014; Schwienbacher and Larralde, 2012; Whitla, 2009). Moreover, crowdfunding brings borrowers an opportunity to leverage their projects to raise additional outside funds (Mollick and Kuppuswamy, 2014).

1.3.2. For lenders

Crowdfunding provides lenders or investors an opportunity to actively invest their money in new projects with or without financial returns. According to Gerber et al, 2012, Gerber and Hui, 2013, Hemer, 2011, and Oddani et al, 2011, the main motivations of lenders are: (i) identification with the subject and target of new projects and businesses; (ii) willingness to support small entrepreneurs, starup companies and early-stage businesses; (iii) satisfaction from sharing similar ideas with other investors; and (iv) enjoyment in participating and interacting with the project's team to reach the general target.

1.4. Risks of crowdfunding

1.4.1. For borrowers

According to the European Commission (2018), crowdfunding operates via online platforms which mostly use an all-or-nothing model. This means that if the funding target is reached, the borrower gets the money and if it fails, all investors will get the money back. Therefore, the first risk of crowdfunding is that borrowers might fail to meet a project's goal. Moreover, borrowers, especially starup or early-stage

companies, face challenges in estimating in advance the amount of targeted funds as well as disclosing innovative ideas and budget which might affect their intellectual property protection and competitive capacity (Agrawal et al, 2014; Pazowski and Czudec, 2014). Furthermore, crowdfunding brings borrowers lots of work relating to choosing platforms, building up investors' interest, managing collected funds and so on, which worths much of time and effort.

1.4.2. For lenders

Similar to borrowers, in order to optimize investments, lenders must obtain adequate understanding of crowdfunding models, which requires much of time and effort. Furthermore, due to information asymetries, lenders might face the risk of lacking knowledge and skills to evaluate the chances of success of the projects and verify how the funds collected are used (Mariani et al, 2017). According to Agrawal et al (2014), the main risks are fraud and abuse of funds. Specifically, the highest risks of lenders arise from financial return crowdfunding models and reward-based crowdfunding because the financial and non-financial returns might not be delivered as investors' expectations. Moreover, if the crowdfunding platform uses keep-what-you-earn or keep-it-all model (i.e. the borrower gets the money collected even if the funding target cannot be reached), the risk of failure will be higher for lenders.

1.5. Regulatory regimes

According to the Financial Sector Deepening Africa (2017), there are four main regulatory regimes toward crowdfunding:

- Lack of legislation: The crowdfunding market is classified as an exempt and there is no specific regulation on crowdfunding. In some cases, regulation protecting investors and fundraisers still applies, for example: problems relating to unfair interest rates, false advertising, etc.

- Intermediary/platform regulation: Loand and equity-based crowdfunding are regulated as financial intermediaries, and usuall required registration and other regulatory requirements depending on the national law, for example business conduct, governance and reporting requirements.

- Banking regulation: Loand and equity-based crowdfunding are considered banks, and thus required a banking licence for certain crowdfunding operations. Moreover, they are subject to full disclosure and reporting requirements.

- Two-tiered regulation: Crowdfunding platforms are monitored at the national level along with the local/provincial level. Therefore, with the same national regulation, crowdfunding at different locations might receive different regulations.

In the next section, we are going to analyze the development of crowdfunding in two ASEAN countries - i.e. Malaysia and Thailand – with the focus on financial return crowdfunding models before moving to Vietnam and making some implications for crowdfunding in this country.

2. CROWDFUNDING IN ASEAN COUNTRIES

ASEAN is a dynamic area that consists of 10 developing and diverse countries, each of which is in a different stage of economic and financial development (Focus Economics, 2016). The region has a combined population of more than 622 million, and is the seventh largest economic region in the world, with a Gross domestic product (GDP) under $2.5 trillion (Wolfgang Lahmacher, 2016). ASEAN's real GDP continues to grow at a rate of 4.5-5% annual (Focus Economics, 2016). By 2050, it is thought that ASEAN will constitute the fourth largest economy in the world (Vinayak H.V et al, 2014), with forecast that

ASEAN will overtake the European Union (Rajeshni Naidu – Ghelani, 2015). In particular, it is apparent that small and medium enterprises (SMEs) play an important role in the significant economic development of ASEAN countries in recent years. A report by Deloitte (2015) pointed out the importance of SME sector in ASEAN-5 (Indonesia, Malaysia, Philippines, Singapore and Thai Lan), remarking that at least one – third of GDP and 70% of employment are assigned to SMEs. The role of SMEs to that development is recognized by the ASEAN itself, in terms of income and job creation, gender and youth empowerment through their diverse business engagements. Their presence is widespread in both non-urban and rural areas. Therefore, SMEs are the backbone of ASEAN and SME development is the foundation for achieving long-term and sustainable economic growth and narrowing the development gap (ASEAN, 2012).

Obviously, SME is the backbone of economic activity in ASEAN, but they face fierce funding limitations in the traditional lending and capital markets. ASEAN has recognized that alternative funding source is an important way for SME to obtain funding requiring for the purpose of starting –up or executing innovative new creative projects that is hard to finance through traditional channels. Therefore, an alternative source of funding – crowdfunding - is being expanded in recent years. This section will highlight the key trend and development of crowdfunding in two ASEAN member states – Malaysia and Thailand with a focus on the existing and emerging regulatory and policy landscape.

2.1. Crowdfunding in Malaysia

In 2015, a total of $3.36 million was mobilized across Malaysia through crowdfunding. It was a significant increase from $1.03 million in 2014 (Asia Pacific Benchmarking Report, 2016). Donation-based crowdfunding covered 92% of the market activity. In 2014, Malaysian made it the first country in ASEAN initiated a dialogue inviting contributions from various stakeholders related to the legal framework for equity-based crowdfunding. The first Malaysian guidelines were issued on February 10, 2015, followed by passing of the Capital Markets and Services Bill (2015) in July. Then, in September 2015, the Malaysia Securities Service (MSC) has introduced the Alliance of FinTech Community to promote greater interest in the development of financial technology and provide regulatory clarity to encourage innovation in the industry. The legal framework for equity-based crowdfunding became licensed in February 2015 as part of the MSC's attempt to encourage innovation in FinTech. Building upon this framework, the MSC is now introducing the framework P2P legal, setting the registration requirements in Guidelines on Recognized markets. In 2015, a call for registration to be an equity-based crowdfunding was also announced. There were 27 applications to open their platforms, in which 6 registered equity-based crowdfunding platforms were approved in order to give SMEs greater access to capital in 2016 (List of Registered Market Operators for equity-based crowdfunding).

2.1.1. *Equity-based crowdfunding in Malaysia:*

The Public Consultation Paper No.2/2014 - "Proposed Framework for Community Funding" was issued by the Securities and Exchange Commission on August 21, 2014. Subsequently, the Market Regulation Guidelines under Section 34 of the Capital Markets and Services Act of 2007 was published on February 10 2015. That document introduces new requisite for registration of equity-crowdfunding platform and provides administrative arrangements for such operations. It replaces the Guidelines on Regulation of Market that have been issued in September 2007.

In 2015, six equity-based crowdfunding platforms became licensed after 18 months of the regulator engaging with the sector through consultation. The 6 platforms are: Alix Global, Ata Plus, Crowd+,

Crowdonmic, Eureeca, Propella and PitchIN. Utimately, a new guideline named the Guidelines on Recognized Markets was issued on December 10, 2015 and was licensed on December 15, 2015. The Guideline provides general requirements for registration and the procedure, administration and operation of equity-based crowdfunding platforms in Section F of the Guidelines. In general, the Guideline uses the approach of the US model in regulating equity-crowdfunding. In principle, it recognizes both equity and P2P lending as a means of making capital from eligible communities. However, it imposes certain restrictions on its structure, such as limitations on the condition of the issuer (fund seekers) as set out in Articles 12.14 to 12.17, on money limits and investment limits as prescribed in Article 12.18 and Article 12.22, and on the type of investor for a micro-funding institution as mentioned in Article 12.17 of the Guidelines.

Since the clauses of this Guideline are general, it is able to apply to both conventional and Islamic equity-based crowdfunding. The only clauses related to the Shariah requirements are the one on the appointment of Shariah advisors as mentioned in Part E of the Guidelines. There is no Islamic equity-based crowdfunding registered in Malaysia. This is different from Singapore which has encouraged one of the equity-based crowdfunding platforms to operate based on Islamic principles. Hence, with the expectation that there is a potential emergence of Shariah complaint equity-based crowdfunding in Malaysia, the current requirements are lacking proper regulatory and governance frameworks.

2.1.2. Loan-based crowdfunding in Malaysia

Investing through a MSC-registered P2P platform means investors are buying securities in the form of investment notes or Islamic investment notes. The new P2P framework militated on May 2, 2016. Operators who were interested in establishing and operating a P2P platform would submit their applications to the regulator from May 2 to July 1. 2016. MSC set out a number of key tasks for the platforms.

Loan based crowdfunding is available to all investors. However, the exposure of retail investors on any platforms is encouraged to limit to a maximum of 50,000 MYR at any given time (SC, 2016).

2.2. Crowdfunding in Thailand

The crowdfunding industry in Thailand is yet underdeveloped in comparison to other countries. There are only a few platforms existing and most of them are reward or donation-based crowdfunding. However, crowdfunding in Thailand is effective as an alternative source of funding for SMEs, since Thailand banks have tightened the requirements for funding in the recent years (Santos, 2015). The role of these SMEs for the Thai's economy is important because they attribute about 78% of the total employment market in the country and represent 37% of Thailand´s GDP as well (Santos, 2015). In 2016, the transaction value in crowdfunding in Thailand amounts to about US$ 1 million. However, until 2020 the transaction value is expected to show an annual growth rate of approximately 53%, which increases the total amount up to US$8 million in 2020 (Statista, 2015). Therefore, crowdfunding in Thailand might extent its importance within the next couple of years in order to ensure proper financing of SMEs - the drivers of the Thai's economic growth.

Thailand's securities regime is supervised by the Securities and Exchange Commission (TSEC). The majority of TSEC's regulatory authority in relation to securities is prescribed through the Securities and Exchange Act B.E. 2535 (1992) (SEA). While Thailand's equity market has increased from 24% of GDP in 1997 to 97% of GDP at the end of 2012 (ADB, 2013), the lack of a capital market for startup and technology companies is a key limitation of this system. Thailand tries its best to improve the situation through the creation of a regulations regime catering to crowdfunding in general and to equity crowdfunding in particular. This framework was set out by the Capital Markets Supervisory Board on May 15, 2015.

Equity-based crowdfunding in Thailand

The regulatory framework which announced in May 2015 focused in two regulations: (1) Notification of the Capital Market Supervisory Board; and (2) Notification of the Securities and Exchange Commission. Despite these announcements, no potential equity-based crowdfunding platform ever became the approved equity-based crowdfunding portal in Thailand. The main obstacle was that the initial Equity-based Crowdfunding Notification only allowed escrow agents to hold investors' subscription funds and there was no escrow agent's interest in joining the equity-based crowdfunding. TSEC amended the Equity-based Crowdfunding Notification in 2016 to address this problem by allowing those following entities to perform this role: (1) intermediaries (derivatives or securities business operators) who are able to perform asset holding functions; and (2) reliable parties under the supervision of a regulator (for example: Bank of Thailand).

Moreover, in this Notification, it is clearly seen that the capital requirement of being a crowdfunding platform in Thailand is quite different from many Asian countries, for instance, the minimum capital requirement for being a crowdfunding platform in Taiwan is 50 million TWD (around $1.6 million USD) instead of $0.15 million in Thailand. This indicates that it might be easier to establish a crowdfunding platform in Thailand; however, if compare to other countries, not only Asian countries but also western countries, the minimum capital requirement of crowdfunding platform in Thailand is significantly lower than other countries as well. Some legal scholars have expressed worry about the risk of investors and the risk of crowdfunding platform business failing due to the low capital requirement.

Due to the reason that equity-based crowdfunding has just launched in Thailand, it will take some time to fully comprehend the practical challenge of regulations. But this must be viewed as a good beginning for the Thai crowdfunding sector. According to TSEC, in near future, ongoing discussions with potential equity-based crowdfunding platform operators, potential entities taking on the role of holding subscription funds from investors and the prospect for equity-based crowdfunding in Thailand is expected.

3. CROWDFUNDING IN VIETNAM AND SOME IMPLICATIONS

3.1. Crowdfunding in Vietnam

3.1.1. Number of crowdfunding platforms

Crowdfunding is significantly growing in the world, but this concept is still relatively new for Vietnam. Crowdfunding is a new way to raise fund from a large community and an important source of fund for Startups. For new businesses, crowdfunding also brings them an opportunity to investigate the market whether their products or projects are well perceived by public or not. Even though this raising fund method is not common yet, the fact is that it is an emerging trend in Vietnam and more and more investors are attracted by this financial innovation.

Generally, crowdfunding are organised in four types: lending-based, equity-based, reward-based, and donation-based. However, there are only three categories in terms of lending-based, reward-based, and donation-based which are operating in Vietnam. Equity-based crowdfunding platform has not been founded in the market. Some significant crowdfunding platforms are shown in the table below.

Crowdfunding has just entered Vietnam in recent years as most of them were established in 2015. Even though the contribution of crowdfunding for financial development is modest, the potentail benefits that crowdfunding brings to the economy is relatively attractive.

Table 1. List of crowdfunding platforms in Vietnam

No	Crowdfunding platforms	Establishment year	Field of activities	Type of crowdfunding
1	Betado	2015	Public projects, art, movies, business.	Reward-based
2	Comicola	2014	Comics industry	Reward-based
3	Firststep	2014	Software, agriculture, game, entertainment…	Reward-based
4	Fundingvn	2014	Business projects	Reward-based
5	Fundstart	2015	Music, art, design, game, electronic, technology…	Reward-based
6	Charity Map	2012	Charity	Donation-based
7	Kindmate	2015	Charity	Donation-based
8	HuyDong	2015	Personal loans and underbanked investors.	Lending-based
9	Tima	2015	Personal loans, SME loans.	Lending-based

Source: The authors

3.1.2. Success of crowdfunding

Crowdfunding have already achieved first remarkable traction while some flatforms have successfully raised funds for small businesses and startups. In addition, crowdfunding brings other benefits for startups such as providing market investigation and marketing instruments.

Reward-based crowdfunding flatform is the most common form in Vietnam and has gained certain success such as Betado, Comicola. Comicola is considered as a successful crowdfunding flatform and has greatly contributed to finance young authors in comic's field. This website has openned a new way for newcomers entering the publishing industry. While calling fund for business, Comicola also supports authors by offerring content advice to writers, contacting and making deals with publishers on the writers' behalf. Until September 2018, Comicola has supplied more than 2.3 billion dong for 17 publishing projects.

Another typical reward-based crowdfunding type is Betado. The platform intentionlly raises funds for art projects such as publishing books, generating music video, preserving culture, rising up public awareness. From the beginning until now, Betado has supported for 27 startups with 1.77 billion dong. However, there are 12 out 27 projects which have failed in calling for funds.

Donation-based crowdfunding flatform is meaningful in Vietnam where many poor and low income people need to be helped. However, the fact that raising funds for charity is not effective as expectation due to several legal and operational issues. CharityMap was closed after 3 years operating. The other donation website – KindMate – has called for funds for 66 projects but 56 of them were unsuccessful since the rate of fundraising was lower than 50%.

Lending-based crowdfunding platform proves a potential fundraising for individuals and small businesses. Two prominent websites in this field are Tima and HuyDong. The former is targeting on individuals, households and making small loans in short time. By September 2018, the number of loan applicants through website of Tima was 2,010,901 and the number of lenders was 20,399. Simultaneously, Tima has disbursed 41,512 billion dong to borrowers. The latter, HuyDong, focuses on financing SMEs.

3.1.3. Challenges for crowdfunding

- Cultures and society

On the investor side, most of Vietnamese people are risk averse. This means that it takes more time to persuade lenders to pour their money into new projects, even profit or non-profit plans. For charity projects,

people are normally willing to help others in a short time rather than long time. For business projects, Vietnamese rarely believe in the ability of startups, due to their quality. Another aspect of Vietnam's culture is business depends much on individual relationship and investors prefer financing funds for those they definitely know in advance.

On the businesses side, Vietnamese people have a stronger fear of failure in comparision with the ones in the West. Therefore, they are more careful of sharing or discussing their ideas with public in general.

- Technology

Crowdfunding is a fundraising channel based on technology, thus, this flatform is heavily dependent on technological development. According to ITU (2016), Vietnam is one of countries which have a high degree of Internet and mobile utilization with more than 4.5 million internet users and 120.3 million mobile subscribers. This means the potential for crowdfunding development is so attractive. However, there are some technological issues in terms of data security and payment system that negative affect crowdfunding. (Hac H. Bui, 2017). Platform owners lack initiation and flexibility of protecting their data and data security is compeletely dependent on the government. Moreover, the forms of payment are becoming more diversifed in Vietnam, however, many people still prefer making payment through cash and bank transfer than 123Pay or PayPal, etc.

- Regulation

This is one of the main factors significantly impacting on crowdfunding development in Vietnam. Anh T. Nguyen (2018) indicated that until now, there is no offical legistration regarding to crowdfunding in Vietnam. Based on Credit institutions Law 2010, fundraising from public without State Bank's approval is illegal. In fact, thanks to the lack of government regulation, crowdfunding is not banned at the moment. Due to the sharp increase in startups, the draft for Small and medium enterprises (SMEs) supporting Law has already mentioned to "crowdfunding" concept. On the other hand, this law has not been approved and the regulation related to crowdfunding is meagre and general. Some compulsory requirements have not been referred in this draft, for instance, how to register with Government's agency, and how to report and supervise this service.

Furthermore, the process related to starting a new enterprise in Vietnam is relatively complicated compared to the one in the West. Even though this process has been improved recently, the documental process of a business registration is complex to startups due to the lack of legalized documents, financial resources and weak management. Based on World Bank's report, Vietnam is ranked 121th out of 190 countries based on the ease of starting a business (World Bank, 2017)

- Startups limitations

Apart from the objective factors, the main challenge for crowdfunding comes from the startups community itself. First, the qualities of projects provided by startups are not really good. Crowdfunding not only helps call funds for businesses, but aslo can be used as a tool for market exploration. By fundraising from public, a new innovation or product has an opportunity to demonstrate their advantage and benefit to public. Interested people can make comments and help startups to amend gradually their products. Nevertheless, the fact is not every startup can take advantage of crowdfunding to examine the market. Firms would focus on providing what they have rather than looking for what the market really needs. Next, marketing campains for crowdfunding and new startups are limited. Investors do not have much information about crowdfunding and how it works; therefore, they are more hesitant about putting money on this form.

3.2. Some implications for crowdfunding in Vietnam.

Firstly, regulation and legal policies related to crowdfunding should be established completely. An adequate legal framework will facilitate the development of crowdfunding and also build on investors' trusts. Vietnamese policymakers can learn from Malaysia and Thailand in generating legal framework for community mobilization. For example, Malaysia imposes some restrictions on crowdfunding operators, startups and investors. For flatform operators, they have to prove their operational as well as technological capabilities to operate, detect risks and protect customers privacy. For issuers, Malaysia sets out limits on the maximum amount that could be mobilize through crowdfunding. For investors, policymakers divide them into some categories and put the limits on the amount of money they can lend. In case they want to invest more, they have to prove their income.

Secondly, a reliable and modern payment infrastructure should be set up in order to create a basement for developing crowdfunding. Central Bank as well as commercial banks should enhance the variety of cashless payment including electronic payment and card payment. In line with expanding payment methods, regulators need to strengthen measures to detect and cope with data security violation or ensure cyber security.

Thirdly, information and knowledge of crowdfunding as well as new fin-tech services should be provided to all investors and enterprises. Being highly aware of crowdfunding' benefits and drawbacks could help investors make proper decisions on choosing reputable community raisingfund channels.

CONCLUSION

Crowdfunding is a method of raising funds to finance projects and businesses, in which money is collected from a large number of people via online platforms. It is an innovative way of accessing alternative funds for new projects and businesses with lots of benefits but also drawbacks and challenges for both investors and fundraisers. Crowdfunding might use financial return model (i.e. lending and equity-based crowdfunding) or non-financial return model (i.e. reward and donation-based crowdfunding). With the concern of investors' benefits, the former model usually receives more regulation and attention than the latter despite the fact that the latter model usually dominates the market of crowdfunding in most countries.

In Asia, crowdfunding is also developing and becomes more and more popular. By introducing the legal framework for equity-based crowdfunding, Malaysia is the first ASEAN country which has established a regulatory regime for a particular type of crowdfunding, followed by Thailand. These countries are on their way of improving the current regulation and developing new regulatory regimes for other types of crowdfunding, especially lending and reward-based models. In the context of growing funds raised by crowdfunding but lacking regulation on this issue, Vietnam should pay more attention on generating a legal framework for crowdfunding, setting up a reliable and modern payment infrastructure, and providing adequate information or knowledge of crowdfunding in order to encourage the development of this innovative method of raising alternative funds for SMEs, especially startup of early-stage businesses.

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RISK MEASUREMENT OF INDEX PORTFOLIOS ON FINANCIAL MARKETS – A COPULA APPROACH

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ABSTRACT: *In this paper, we propose a method for risk measurement of a portfolio containing indexes on financial markets, including stock and foreign exchange markets. Specifically, copula method is applied to estimate the Value at Risk (VaR) and the Conditional Value at Risk (CVaR) of some optimal portfolios consisting Vietnam stock index VNINDEX, some international stock markets such as the USA, Chinese, Korean, Japanese, French, Australian markets and exchange rates. The results show that, in the first scenario, in Vietnam, when one invests on both these markets, risk on stock market is higher than on foreign exchange. Therefore, in order to reduce the risk, one may probably invest on stock market with a lower proportion than on foreign exchange market. In the second scenario, when one invests on international and Vietnamese stock markets, one may diversify portfolio to some international stock markets such as Japanese, Korean or Australian ones beside Vietnamese market. Investing only on Vietnamese stock market is risky. In the third scenario, when one invests on international and Vietnamese stock markets and foreign exchange market, risk on stock market is still higher than on foreign exchange. In addition to investing on foreign exchange market, one may diversify portfolio to some international stock markets such as Japanese or Chinese ones. One should never invest only on single Vietnamese stock market.*

***Keywords:** Risk measurement; portfolio; stock market; foreign exchange market.*

1. INTRODUCTION

"Index-based investment" is quite popular in foreign markets, but relatively new in the Vietnamese stock market. In recent years, some companies, gold exchange in Vietnam has implemented products trading VN-Index to investors. "Index-based investment" means the purchase by the investors of an investment fund whose portfolios consist of a part or all of the securities constituting an index on the market. An investment fund that provides such a fund is called the index fund. On the basis theory, (Hoang Dinh Tuan, 2010) asserts that the portfolio of the portfolio is indeed a portfolio, so the measurement of portfolio risks is practicable. *Index investment has several advantages such as:*

First, it is easy to use. The biggest advantage of index investing is that it does not require any presence of investors in the transaction. All the investors have to do is choosing the index which they want to invest and then the fund management will do the rest. The return that the investor receives will be the performance of the index during that investment period. The most popular index funds in the world are S&P500, DowJones and Nasdaq.

Second, it is low-cost. Since the management of index funds is not too complex, the cost to investors for fund managers will be lower than that of conventional mutual funds. Dynamic funds are more profitable but compensate for the high costs associated with risk.

Third, it is higher efficiency. Index funds have historically performed better than other dynamic funds. They are proud that they bring higher profits while investment costs as well as participation fees are low.

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Index funds are highly profitable thanks to the diversification of their portfolio at a low cost to investors. High profitability makes index funds an attractive tool for investors.

However, index investment has some drawbacks:

First, there is no ability to beat the market. If index funds pursue "moments" of the market as other investors, they will show that they are not capable of doing better than the market. Active investment funds have the ability to adjust their portfolio to take advantage of the times when the market is "parallel". In the context of economic growth, index funds will outperform the active funds.

Second, the performance of the fund depends on the state of the economy. Index funds may also perform poorly in a stagnant economy. For example, if investors invest in the S&P500 in 2000, investors would actually lose money over the past decade. If the US economy had continued to grow slowly or had not grown, index funds would continue to perform poorly.

As we can see, index funds have their advantages and disadvantages as well. However, they are really a good investment tool for passive investors looking for quick and easy diversification at low cost.

This investment method already popular in most advanced markets around the world, it will inevitably be applied in other emerging markets in the future, for example in Vietnam. In fact, there are also a number of investment funds in Vietnam's stock market such as FTSE Vietnam Index ETF, Market Vectors Vietnam ETF (VNM), MSCI Frontier Markets Index, iShares MSCI Vietnam Investable Market Index Fund VFMVN30. Vietnam stock market is in the process of perfecting and developing, the annual growth rate of the market is quite high and larger than the world average. An index investment strategy is suitable for long-term investors with low risk tolerance, especially for new entrants who are lack of investment knowledge and experience or who have not enough time to closely monitor the market developments. Therefore, their goal is to achieve profitability as well as market risk. This investment approach is to reduce the risk while "putting eggs into many baskets" and easy to apply as well as cutting research costs when just tracking the macro information to predict the market trend. It save time for investors in basic and technical analysis on individual stocks in the short term. Therefore, the formation of index funds will give domestic retail investors a relatively safe financial product with relatively high profitability. This paper focus on presenting a tool for measuring indicator risk, so that investors are somewhat aware of the degree of risk when selecting indicators, and so that decision makers have confident information in selecting indicators to create index portfolios.

In recent years, the collapse of many financial institutions has spill-overed between markets. After those collapses, the role of risk management in financial investment is of particular interest. In particular, the importance of risk measurement is considered to be crucial. To measure the maximum amount of losses that could occur when holding a financial asset or a financial portfolio during an investment period, the "value of risk" measure is usually used (Value at Risk - VaR) at various levels of confidence (see (Hoang Dinh Tuan, 2010)). VaR model is widely used in market risk and credit risk management. However, according to a study by (Artzner et al., 1999), VaR is not a coherent risk measure, so diversification rules in investment are disrupted. In order to overcome this weakness, a new approach to risk measurement of the portfolio thanks to Conditional Value at Risk (CVaR) has been recently used. Due to some superior properties, the CVaR presents a more complete risk measurement than VaR. In this paper, the study proceeds to estimate both measures of risk.

Typically, due to certain technical conditions, the VaR, CVaR of the asset returns or the portfolio returns are calculated, so that the VaR, CVaR of the asset or portfolio are deduced.

Let r_t denote the asset or portfolio returns. VaR at the probability level p, denoted by VaR(p), is defined as follows:

$$P\left(r_t < \mathrm{VaR}\left(p\right)\right) = p \qquad\qquad (1)$$

CVaR at the probability level p, denoted by CVaR (p), is defined as follows:

$$\text{CVaR}(p) = E\left(r_t \mid r_t > \text{VaR}(p)\right) \tag{2}$$

In practice, there are several methods for estimating the VaR, CVaR. Some typical studies in Vietnam such as: Study of (Hoang Dinh Tuan, 2010) on traditional methods based on a hypothesis that the asset returns is normally distributed with unchanged mean and variance; study of (Tran Trong Nguyen, 2012) on the extreme value theory method; study of (Tran Trong Nguyen, 2013) on quantile regression model with heteroskedasticity; study of (Hoang Duc Manh, 2015) on the copula method. Copula method is a useful method in estimating depence structure and measuring financial risk. The co-author used copula method in a recent study, (Nguyen Thu Thuy, 2015). In this paper, the authors use the copula method to estimate the VaR, CVaR of the portfolio due to the advantages of this method (see Section 2). This study chooses the Student copula that describes the dependence structure of the assets in the portfolio, and then use this copula to estimate the VaR, CVaR of the portfolio. With such research problems, the paper focuses on two main ideas:

Firstly, the marginal distribution is built for each market index return. After that, the marginal distribution is fitted with Student copula functions so that this copula is chosen to describe the dependence structure between markets.

Secondly, perform the risk measurement for an optimum portfolio between markets at a given expected return by following such steps: (i) choosing the probability distribution for the market index returns; finding the optimal portfolio thanks to the Mean – Conditional Value at Risk (M-CVaR) model as in (Hoang Duc Manh, 2015); (ii) Estimating the VaR and CVaR of the optimal portfolio using the Student copula function chosen in the previous idea.

2. RESEARCH METHODOLOGY

2.1. Copula method

During the risk measurement of a portfolio, the asset returns are often assumed to be independent and identically distributed. However, in practice, these assumptions are often not satisfied. This fact makes it difficult to determine the joint distribution of assets and their dependence structure. The copula is a strong method to solve this problem. In other words, one can use the copula functions to determine the joint distribution of assets in the portfolio as long as their marginal distribution functions are known. Especially, copula method is quite useful in the study of extreme dependence and nonlinear dependence of assets.

Copula is a joint distribution built from the marginal distribution functions of one-dimension-random variables. Within the scope of this paper, the study mainly uses 2-dimension-copulas. In fact, higher-dimension-copulas are also constructed similarly to the two-dimension-copulas (see (Cherubini et al., 2004) and (Nelsen, 1998)).

Two-dimension-copula function

A two-dimension-copula function (refers to a copula) is a function C whose domain is $[0;1] \times [0;1]$, and value domain is $[0;1]$ and C satisfies the following properties:

1) $C(x) = 0, \forall x \in [0;1]^2$ if at least one component of x equals 0.

2) $C(1;x) = C(x;1) = x, \forall x \in [0;1]$.

3) $\forall (a_1;a_2),(b_1;b_2) \in [0;1]^2$ where $a_1 \leq b_1, a_2 \leq b_2$, it follows:

$$C(a_2;b_2) - C(a_1;b_2) - C(a_2;b_1) + C(a_1;b_1) \geq 0 \tag{3}$$

The problem of modeling dependence structures is that this feature does not always show

out of the joint distribution function under consideration. It would be of some help to separate the

statistical properties of each variable from their dependence structure. Copula functions provide us with a viable way to achieve this goal.

According to Sklar's theorem (McNeil et al., 2005, p.200), for $F_1(x_1)$, $F_2(x_2)$ are, respectively, the marginal distribution functions of the random variables X_1, X_2, there exists a copula function C such that:

$$F(x_1; x_2) = C(F_1(x_1); F_2(x_2)), \text{ for } \forall (x_1; x_2) \in R^2 \tag{4}$$

If F_1, F_2 are continuous, C is uniquely exists. Conversely, if C is a copula and F_1, F_2 are, respectively, the marginal distribution functions of the random variables X_1, X_2, the function F defined in (4) becomes the joint distribution function, which is built from marignal distribution functions F_1, F_2. Clearly, the Sklar theorem is particularly useful in studying the dependence structure and the risk measurement of portfolio whose assets are non-independent and non- identically distributed.

2.2. Research Methods

Based on the Sklar theorem and the formula of the VaR and the CVaR of a portfolio, this empirical research performs copula method on the data of the Vietnam stock market and the foreign exchange market in following steps:

(i) Data analysis: Descriptive statistics, preliminary investigation the properties of market index returns, test the normality distribution of returns.

(ii) Determine a copula function to describe the dependence structure of each porfolio of index returns. Firstly, this study build the marginal distribution functions for returns. According to (Patton, 2012), there are two methods to build marginal distribution functions. Those are parameter method and non-parametric method. In this paper, the research uses non-parametric method, i.e., the empirical probability distribution functions are used as marginal distribution functions. After that, copula Student is chosen to fit the data, in the way that we estimate the parameter of Student copula.

(iii) Estimate the VaR and CVaR values of some optimal portfolio including:

- The VNIndex and an exchange rate.

- The VNIndex and some international stock market indices, without exchange rate.

- The VNIndex and some international stock market indices, and exchange rate.

The Student copula which was chosen in step (ii) for each portfolio of marginal distrubution functions is used here to estimate the VaR and CVaR values of the responding optimal portfolios.

3. DATA AND RESEARCH RESULTS

3.1. Research data

The study uses daily closing data of the Vietnam stock market index (VNINDEX), and daily adjusted closing data of some international stock market indices (S&P500, SSE, KOSPI, JPX, CAC, ASX of corresponding USA, Chinese, Korean, Japanese, French and Australian stock markets) and the exchange rates of Vietnam Dong by the US dollar (VND/USD). The VNIndex was collected from https://www. vndirect.com.vn. International stock market indices were collected from http://www.indexbook.net. These international stock markets are chosen thanks to some evidence of contagion of these markets to Vietnamese stock market, which was shown in (Nguyen Thu Thuy, 2015) and (Tran Trong Nguyen et al., 2016). The foreign exchange rates of Vietnam Dong (VND) and United State Dollar (USD) was collected from https:// vn.investing.com. The data series were collected from May 2nd, 2013 to April 27th, 2018, including 1245 observations, in 5 years. As deviation of the holidays and trading hours between international markets, the data is adjusted suitablely. The returns of indexes are defined as follows:

$$r_t = \ln(I_t/I_{t-1}),\qquad\qquad\qquad\qquad\qquad (5)$$

where I_t is the value of the index at the closing time of the day t.

In practice, for simplicity, we denote the yield of the XYZ index as RXYZ. Descriptive statistics of the index returns of the two markets are computed in Table 1.

Table 1. *Summary of descriptive statistics of index returns.*

	RVNINDEX	**RASX**	**RCAC**	**RJPY**	**RKOSPI**	**RSP500**	**RSSE**	**REX**
Mean	0.000641	0.000120	0.000278	0.000279	0.000194	0.000419	0.000281	6.73E-05
Median	0.001343	0.000360	0.000426	0.000188	5.38E-05	0.000370	0.000615	0.000000
Maximum	0.037784	0.032849	0.040604	0.047444	0.029124	0.038291	0.056036	0.013710
Minimum	-0.060512	-0.041765	-0.083844	-0.060821	-0.032270	-0.041843	-0.088732	-0.013547
Std. Dev.	0.009836	0.008113	0.011128	0.010867	0.007241	0.007828	0.014706	0.001270
Skewness	-0.759107	-0.318438	-0.563045	-0.435735	-0.282337	-0.572022	-1.284819	0.787636
Kurtosis	7.034920	4.881264	7.754415	7.213951	4.938263	6.400727	10.67885	34.43362
Jarque-Bera	963.3511	204.4703	1237.393	959.7896	211.2582	667.2908	3398.596	51343.71
Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	0.797655	0.148890	0.346447	0.346937	0.241726	0.521799	0.349029	0.083736
Sum Sq. Dev.	0.120249	0.081824	0.153922	0.146789	0.065182	0.076168	0.268827	0.002004
Observations	1244	1244	1244	1244	1244	1244	1244	1244

In general, the average value of returns are relatively close to 0. All of Vietnam stock market, international stock markets and the foreign exchange market have positive investment efficiency since the average of returns are all positive. The most of skewness coefficients of returns are negative, except for the skewness coefficient of exchange return. The Q-Q normality distribution graphs of the returns show that these returns are all not normallity distributed (Figure 1). As can be seen, the tail of the distributions are separated from the straight line which shows the normallity distribution. It means that the returns have fat tail distributions, not normality distribution. The kurtosis coefficients of the returns are all high, from 4.9 to 34.4, which also show that the returns are not normality distributed. The abnormally distribution of returns is also supported by the Jaque-Bera statistic in Table 1. The Jaque-Bera test, with very small probability, rejects the hypothesis H_0: "the returns are normality distributed". Therefore, the normality distribution is not appropriate to study these returns.
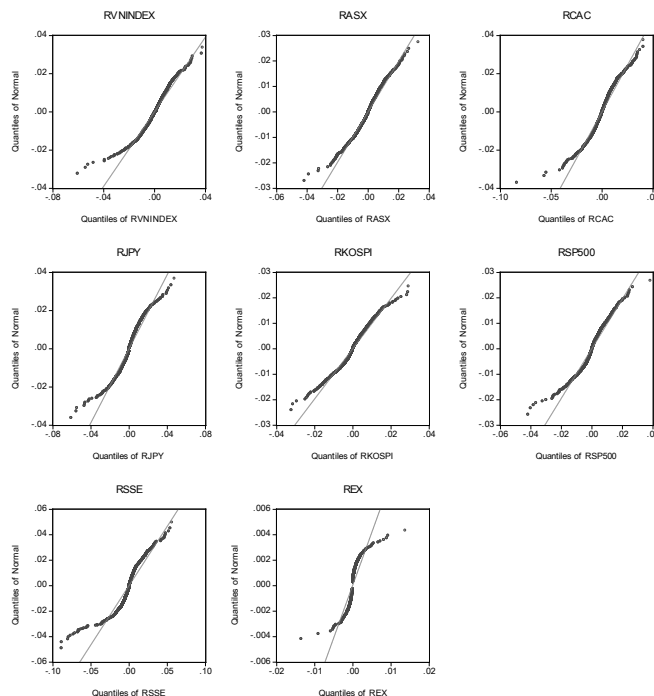
Figure 1. Q-Q graph of yield chains.

3.2. The estimation procedures of VaR and CVaR

In this section, the study uses the Student copula chosen aboved to measure the risk of portfolios, including the VNindex and an exchange rate. The estimation procedures of VaR and CVaR as follows:

Step 1: Using Generalized Pareto Distribution (GPD) to estimate the lower and upper tail of the probability distribution for each return; The middle distribution of each return is approximated by its empirical distribution thanks to the Kernel method.

In fact, to estimate the upper tail distribution, observations of at least 90% quantile of the returns and to estimate the lower tail distribution, observations at most 10% quantille of the returns. In addition, the previous research also uses the Maximum Likelihood Method to estimate the parameters of the GPD, and must ensure the convergence of numerical solutions. In this paper, the study applies the sampling rule as above to estimate the parameters of GPD distribution for the lower and upper tails for each return. Estimated results by Matlab software. The results are in Table 2.

Table 2. *Results of GPD parameter estimation for the lower and upper tail coefficients.*

Returns	Lower tail		Upper tail	
	Shape (ξ)	Scale (σ)	Shape (ξ)	Scale (σ)
Rvnindex	0.186758	0.00653135	-0.0202895	0.00572845
Rasx	-0.0560729	0.00624768	- 0.082239	0.00506877
Rcac	0.122396	0.00768653	-0.162154	0.00870068
Rjpy	0.125597	0.00767447	0.0215807	0.007497
Rkospi	-0.132716	0.00601704	0.045943	0.0039494
Rsp500	-0.0233668	0.00691633	-0.0204268	0.00449804
Rsse	0.301419	0.0113643	-0.0932815	0.0106485
Rex	0.303303	0.000767517	0.314174	0.000973257

In addition, we can observe the probability plot of the distribution patterns of the yield chains. Based on the probability distributions of the return series, we observe how the probability distribution of the series of marginal differs from the normal distribution and the distribution of GDP is being used, especially the distribution of the left and the right tails. It partially help us decide to use the GDP distribution or standard distribution to describe the distribution of the returns. To be more precise, we perform the following distribution test: As a result in probability theory, if the random variable X has a probability distribution function $F(x)$, then the random variable $U = F(X)$ is distributed uniformly in [0, 1]. This result has been applied in randomized simulation to generate the values of a random variable following a given distribution (e.g., standard distribution, Student distribution, exponential distribution,...). Some predict of suitability of GPD-Kernel-GDP probability distribution to returns can be explored from Figure 2.
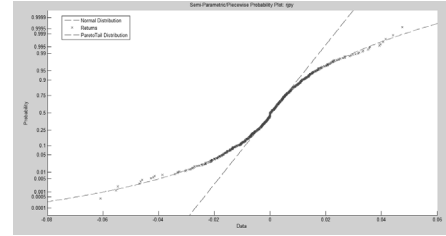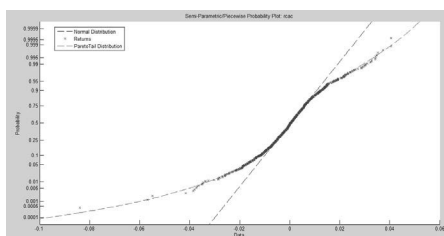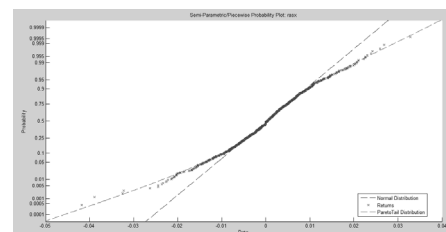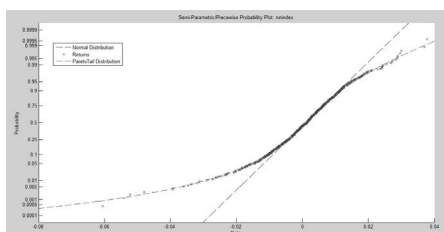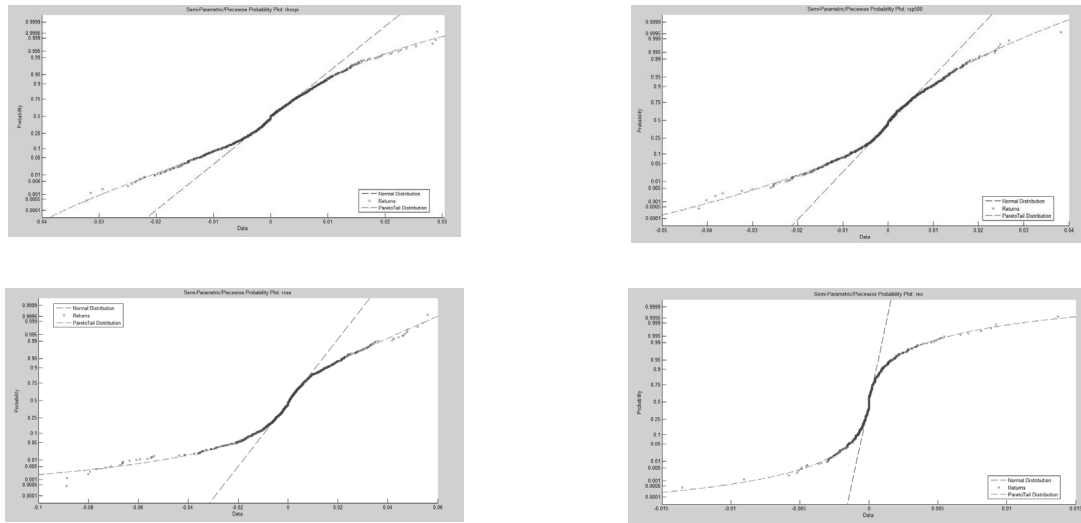
Figure 2. Some Probability distribution of returns.

Figure 2 shows that it would be significantly biased if we used usual normal distributions to describe the probability distribution of these returns, particularly the left and right tail of distribution. At the same time, if we use GPD to estimate the left and right tail of distributing these returns, it is quite consistent with the actual data. Because the plot of actual return is nearer the Pareto Tail Distribution than the Normal Distribution.

To confirm the suitability of GPD-Kernel-GDP (if exists) in the probability distribution estimates of the returns, we perform a distributed test for standardized yield chains, which is the series transformed by the probability distribution function (GPD-Kernel-GPD) of the original return series. It is also possible to prove that the correct GPD-Kernel-GPD form is indeed a probability distribution of the original returns. In concrete, to confirm the suitability of GPD-Kernel-GDP distribution in estimating the probability distribution of these returns, the study performed a uniform distributed test for series, such as: URVNindex, URusd-vnd, ... These series transformed by the probability distribution function (GPD-Kernel-GPD) of the original return series. The Anderson-Darling tests results are presented in Table 3.

Table 3. Probability values in the Anderson-Darling test for transformed series.

Urvnindex	Urasx	Urcac	Urjpy	Urkospi	Ursp500	Ursse	Urex
0.8177	0.6934	0.8013	0.5414	0.6331	0.6172	0.5234	0.0012

This result shows that the GPD-Kernel-GPD distribution is appropriate used to approximate the distribution of almost returns series, except for the returns of exchange rate (since the probability value of the Anderson-Darling test in the case of exchange rate is really equal to 0). Therefore, we will use the empirical distributions thanks to Kernel function of normal distribution for exchange rate, while GPD-Kernel-GPD distribution is used for the others.
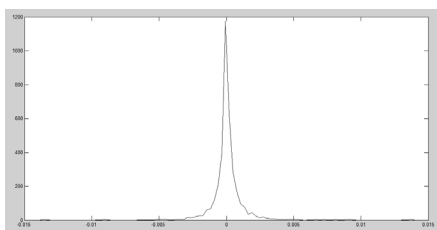
Figure 3. Density function graph by Kernel normal for exchange rate return.

Step 2: After selecting the probability distributions for the returns, we construct joint distributions to estimate risk measures and select the optimal portfolio.

Previously, the study performed empirical analysis to select the appropriate distribution for each return. Based on the Copula methodology, research can build the joint distributions of returns of the portfolio. In this approach, in order to estimate the VaR, CVaR and solve optimal problem, the study use the randomized simulation to generate the returns of the joint distribution. After that, the authors calculate the return of the portfolio and the risk measures. First, the author takes steps to calculate the VaR and CVaR measures for a particular category. For the series which were transformed into those whose value domain is [0; 1], the study estimates the parameters of Student Copula. Thanks to the Inference Functions for Margins (IFM) method, the study estimates the two parameters of Student Copula.

Step 3: Find the optimal portfolios at given expected returns thanks to the M-CVaR model. To do so, the study proceeds to estimate the effecient boundary according to M-CVaR model by calculating 20 marginal portfolios without bear sale. Therefore, the optimal portfolios are found.

Finally, once we get the weight of each assets in the portfolio, we estimate the VaR and CVaR of each portfolio.

In empirical results, we built 3 scenarios: first, one invests on Vietnamese stock market and foreign exchange market, index portfolio consists of 2 indices; second, one invests on some international stock markets relating to Vietnamese stock market and Vietnamese stock market, but no foreign exchange market index, index portfolio consists of 7 indices; third, one invests on some international stock markets, Vietnamese stock market, and also foreign exchange market index, index portfolio consists of 8 indices. Following above steps, we estimate risk of some portfolios of indices on financial markets as in below subsections.

3.3. Risk measurement of portfolio including of Vnindex and exchange rate

In the first situation, we consider a portfolio of two indices of Vnindex and exchange rate. The Student copula parameters are: the number of degrees of freedom, which is 53.2561, and the Correlation coefficient matrix, which is:

$$\begin{pmatrix} 1 & -0.04246 \\ -0.04246 & 1 \end{pmatrix}$$

We continue to estimate the efficient boundary of the portfolio:
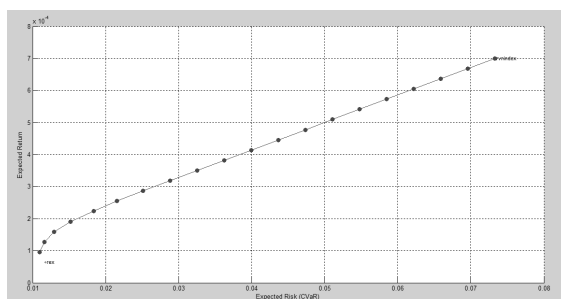
Figure 4. Efficient boundary for portfolio of Vnindex and exchange rate thanks to M-CVaR model.

Thanks to the results of the efficient bound of the portfolio, we calculate some optimal portfolios corresponding to some given returns, thanks to M-CVaR model. Here is the results:

Table 4. *Some optimal portfolios of Vnindex and exchange rate returns by M-CVaR model.*

	Porfolio 1	Porfolio 2	Porfolio 3
Preturn	0.03%	0.05%	0.07%
		Proportion	
RVnindex	0.3705	0.6852	0.9999
Rex	0.6295	0.3148	0.0001
Prisk	0.0267	0.05	0.0733

The results in Table 4 show that, in Vietnam, if one invests on both the stock market and the foreign exchange market, one should spend on a smaller proportion on the stock market than on the foreign exchange market to reduce risk. At a relative low return, such as 0.03%, one may invest 37.05% of the capital on Vietnamese stock market and 62.95% of the capital on foreign exchange market. When one increases the proportion of capital on stock market, and reduce the proportion of capital on foreign exchange market, the risk increases. Particularly, if one just invest on stock market only, the situation is the most risky.

The results are given in Table 5, which corresponds exactly to the portfolios in Table 4.

Table 5. *Risk measurement of portfolio Vnindex and exchange rate returns by Copula Student.*

Confidence level	Porfolio 1		Porfolio 2		Porfolio 3	
	VaR	CVaR	VaR	CVaR	VaR	CVaR
90%	0.4%	0.68%	0.72%	1.24%	1.05%	1.82%
95%	0.57%	0.88%	1.06%	1.62%	1.55%	2.37%
99%	1.06%	1.43%	1.93%	2.64%	2.82%	3.87%

3.4. Risk measurement of portfolio including of Vnindex and international stock market indices

In the second situation, we consider a portfolio of Vnindex and six international stock markets, but not exchange rate. The Student copula parameters are: the number of degrees of freedom, which is 6.8828, and the Correlation coefficient matrix, which is:

$$\begin{pmatrix} 1 & 0.06 & 0.146 & 0.035 & 0.128 & 0.186 & 0.100 \\ 0.06 & 1 & 0.204 & 0.233 & 0.219 & 0.225 & 0.115 \\ 0.146 & 0.204 & 1 & -0.005 & 0.289 & 0.532 & 0.096 \\ 0.035 & 0.233 & -0.005 & 1 & 0.249 & 0.009 & 0.118 \\ 0.128 & 0.219 & 0.289 & 0.249 & 1 & 0.338 & 0.232 \\ 0.186 & 0.225 & 0.532 & 0.009 & 0.338 & 1 & 0.144 \\ 0.100 & 0.115 & 0.096 & 0.118 & 0.232 & 0.144 & 1 \end{pmatrix}$$

We continue to estimate the efficient boundary of the portfolio:
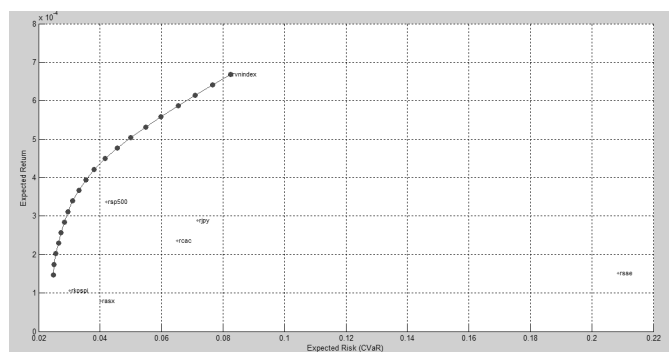
Figure 5. *Efficient boundary for the portfolio of Vnindex and international stock market indices thanks to M-CVaR model.*

Thanks to the results of the efficient boundary of the portfolio, we calculate some optimal portfolios corresponding to some given returns, thanks to M-CVaR model. Here is the results:

Table 6. *Some optimal portfolios of Vnindex and international stock market indices by M-CVaR model.*

Preturn	Porfolio 4	Porfolio 5	Porfolio 6
	0.02%	0.04%	0.06%
	Proportion		
RVnindex	0.0897	0.2565	0.8050
Rasx	0.2308	0	0
Rcac	0.0655	0.1116	0
Rjpy	0.1043	0.2123	0.0770
Rkospi	0.3924	0	0
Rsse	0.0931	0.4196	0.1180
Rsp500	0.0242	0	0
Prisk	0.0256	0.036	0.0682

The results in Table 6 show that, in a situation, if one invests on international stock markets and the domestic stock market, one should not spend only on the domestic market, but also international stock markets such as Korean, Australian and Japanese ones. Maybe, because these international stock markets have dependence structure with Vietnam stock market at some levels. Investors should notice that if they increased the proportion of capital on Chinese and Vietnamese stock market at the same time and reduced the proportion of capital on the other stock markets, the risk of the index portfolio would increase dramatically. Again, one should not invest on Vietnam stock market only.

The results are given in Table 7, which corresponds exactly to the portfolios in Table 6.

Table 7. *Risk measurement of portfolio Vnindex and international stock market indices by Copula Student.*

Confidence level	Porfolio 4		Porfolio 5		Porfolio 6	
	VaR	CVaR	VaR	CVaR	VaR	CVaR
90%	0.6%	0.95%	0.62%	1.07%	0.9%	1.51%
95%	0.84%	1.2%	0.92%	1.38%	1.27%	1.96%
99%	1.4%	1.81%	1.64%	2.17%	2.28%	3.38%

3.5. Risk measurement of portfolio including of Vnindex, international stock market indices and exchange rate

In the last scenario, we consider a portfolio of Vnindex, six international stock markets, and also exchange rate. The Student copula parameters are: the number of degrees of freedom, which is 8.3507, and the Correlation coefficient matrix, which is:

$$
\begin{pmatrix}
1 & 0.064 & 0.143 & 0.036 & 0.128 & 0.187 & 0.010 & -0.033 \\
0.064 & 1 & 0.208 & 0.236 & 0.225 & 0.231 & 0.114 & -0.08 \\
0.143 & 0.208 & 1 & -0.0006 & 0.290 & 0.529 & 0.093 & -0.024 \\
0.036 & 0.236 & -0.0006 & 1 & 0.252 & 0.011 & 0.120 & -0.025 \\
0.128 & 0.225 & 0.290 & 0.252 & 1 & 0.335 & 0.235 & -0.033 \\
0.187 & 0.231 & 0.529 & 0.011 & 0.335 & 1 & 0.141 & -0.0004 \\
0.010 & 0.114 & 0.093 & 0.120 & 0.235 & 0.141 & 1 & -0.012 \\
-0.033 & -0.08 & -0.024 & -0.025 & -0.033 & -0.0004 & -0.012 & 1
\end{pmatrix}
$$

We continue to estimate the efficient boundary of the portfolio:
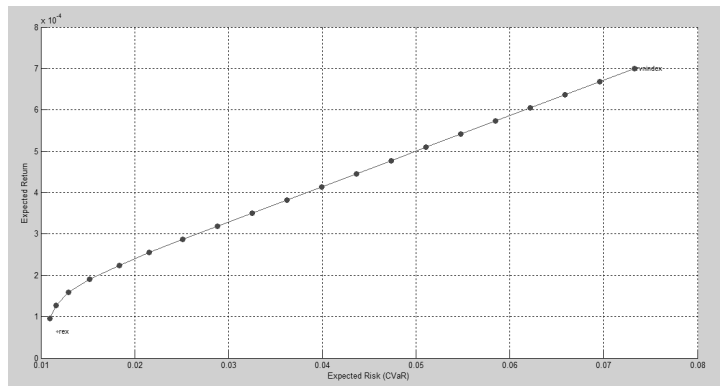
Figure 6. *Efficient bound for the portfolio of Vnindex, international stock market indices and exchange rate thanks to M-CVaR model.*

Thanks to the results of the efficient bound of the portfolio, we calculate some optimal portfolios corresponding to some given returns, thanks to M-CVaR model. Here is the results:

Table 8. *Some optimal portfolios of Vnindex, international stock market indices and exchange rate by M-CVaR model.*

Preturn	Porfolio 7	Porfolio 8	Porfolio 9
	0.025%	0.04%	0.06%
		Proportion	
RVnindex	0.1798	0.3493	0.7737
Rasx	0.0121	0.0374	0
Rcac	0	0	0
Rjpy	0.1179	0.1885	0.2021
Rkospi	0	0	0
Rsse	0.1766	0.2943	0.0242
Rsp500	0	0	0
Rex	0.5136	0.1305	0
Prisk	0.0163	0.029	0.0567

The results in Table 8 show that, in another scenario, if one invests on not only international stock markets, Vietnamese stock market but also foreign exchange market, foreign exchange market is once again a safe haven. We can see, if one spent over a half (51.36%) of the capital on foreign exchange market, some 17.98% of the capital on Vietnamese stock market and some 17.66% on Chinese stock market and some 11.79% on Japanese stock market, it is safer than that one spent some 34.93% on Vietnamese stock market, some 13.05% on foreign exchange market, some 29.43% on Chinese stock market and some 18.85% on Japanese stock market. And it is so risky when one just invests on Vietnamese stock market and Japanese stock market, and without on foreign exchange market.

The results are given in Table 9, which corresponds exactly to the portfolios in Table 8.

Table 9. *Risk measurement of portfolio Vnindex, international stock market indices and exchange rate by Copula Student.*

Confidence level	Porfolio 7		Porfolio 8		Porfolio 9	
	VaR	CVaR	VaR	CVaR	VaR	CVaR
90%	0.31%	0.53%	0.56%	0.93%	0.87%	1.48%
95%	0.44%	0.68%	0.78%	1.2%	1.24%	1.91%
99%	0.81%	1.12%	1.41%	1.97%	2.24%	3.2%

4. CONCLUSION

The study used the empirical distributions as the marginal distributions for the returns of indexes of the stock market and the foreign exchange market. The study also fitted the data with Student copula function. The study also used the GPD distribution and Kernel method to select the appropriate probability distribution GPD-Kernel-GPD pattern for all abnormality distributed returns. The results are those: exchange rate return is suitable with kernel model, while all the other returns are appropriate with GPD-Kernel-GPD pattern. The paper applied the M-CVaR model, Copula method and the random simulation to construct efficiency boundaries. For a given expected return of each investor, one can build an "optimal portfolio", and estimate its VaR, CVaR values.

From 3 scenarios which we assume, the results homogeneously show that:

First, if investors want high yields, they must accept high risk.

Second, the foreign exchange market is a safe haven for investors in financial investing. One should select foreign exchange market index as one component of the index portfolio. If there is not a foreign exchange market index in the index portfolio, one should diversify the portfolio on some international stock markets. Which international stock markets should be chosen? This is an interesting question that the authors are on the way searching. Some international stock markets which were studied in the paper is not really enough.

Finally, some future research can be extended from this paper are as follow:

First, we can study more copula functions to fit the data.

Second, some more international stock markets should be taken into consideration.

Third, we can expand the research to commodity markets such as world oil market, world or domestic gold markets, etc…

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PROFITABILITY AND MARKETABILITY OF MANUFACTURING FIRMS IN VIETNAM: POLICY IMPLICATIONS FOR VIETNAM MANUFACTURING STARTUPS

Dao Le Trang Anh∗

ABSTRACT: *Manufacturing sector has contributed significantly to the development of Vietnam economy recently. Manufacturing enterprises in Vietnam are also receiving abundant opportunities to attract investors, expand the market and gain more earnings under the context of economic integration. With the aim of providing policy implications to promote manufacturing startups in Vietnam, this study investigates the profitability and marketability efficiency of 102 experienced manufacturing firms listed on Vietnam stock market from 2007 to 2016 by employing two-stage DEA process. Moreover, the study applies Tobit regression models to estimate the impacts of financial and non-financial factors on efficiency performance of companies in Vietnam manufacturing sector and sub-sectors. From research findings, the study reveals that manufacturing firms in Vietnam are profitability efficient but marketability inefficient. Besides, holding more cash and controlling capital structures properly will help Vietnamese manufacturing companies to increase their efficiency performance. Based on conclusions and implications from experienced manufacturing enterprises, the study provides policy suggestions for the development of manufacturing startups in Vietnam.*

Keywords: *Manufacturing; Profitability and marketability efficiency; Startups; Vietnam*

1. INTRODUCTION

Manufacturing sector plays an increasingly pivotal role in the development of Vietnam. Statistics from The World Bank (2018) shows that the percentage of exported manufacturing products over total Vietnam's exported commodities has increased from 42% in 2000 to 83% in 2016. With the competitive advantages of low employment costs, large consumer population, better investment policies and improving infrastructure conditions, Vietnam is considering one of the most attractive destinations in Southeast Asia to reallocate manufacturing operationsfrom China (Lim, 2017).

Especially, on the last day of 2015, leaders of the ten state members of Association of Southeast Asian Nations (ASEAN) officially celebrated an introduction of a single economic community, namely ASEAN Economic Community (AEC). AECis oriented to become a manufacturing and trading hub that is resilient and highly integrated to the global economy (ASEAN, 2015). Following the AEC's establishment and provisions, there are numerous opportunities for both Vietnamese experienced and startup manufacturing enterprises to attract more investors, raise more funds and widen their markets.

Corporates' profitability efficiency and marketability efficiency are the two important measurements reflecting firms' operating and financial success. These performance evaluations figure out whether the firms have been using their existing resources effectively or not (Duzakinet al., 2007). Therefore, knowing the performance

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efficiency levels of the firms will help corporate managers to position their companies competitively and make wise decisions. Although profitability and marketability efficiency as well as the impacts of financial and non-financial characteristics on the companies' performance efficiencies are investigated widely for developed markets in previous literature, there is no study concerning these issues in Vietnam.

Hence, this study provides an assessment of manufacturing firms' profitability and marketability efficiency in Vietnam. The study also examines the effects of firms' financial and non-financial characteristics on Vietnam manufacturing enterprises' earnings and market efficiency. Moreover, this study separates manufacturing firms into three manufacturing sub-sectors based on the industries' production characteristics to compare the efficiency of firms in different manufacturing sub-sectors and identify the factors that significantly affect their profit and market valuation efficiency. From research findings, the study provides policy implications and suggestions for startup manufacturing businesses in Vietnam.

2.   LITERATURE REVIEW

2.1.   Profitability and marketability efficiency

Profitability of a business is defined as an ability to gain its income, while marketability is the capability to trade securities in the market. Therefore, a business's profitability efficiency is an important measurement for internal operation results. Marketability efficiency, on the other hand, is a critical proxy showing how the external market assesses real business's value (Hung and Wang, 2012).

A two-step Data Envelopment Analysis (DEA) process measuring profitability and marketability efficiency of a business was first introduced by Seiford and Zhu (1999) with an application for banking sector. By using DEA technique, Seiford and Zhu evaluate how 55 US commercial banks create income in the first DEA stage and how market assesses those banks' value in the second DEA stage. Specifically, in stage 1, three inputs (employees, assets and stockholders' equity) and two outputs (revenues and profits) are adopted. In the next stage, two outputs (revenues and profits) of stage 1 becomes the inputs, while the outputs are market value, total return to investors and earnings per share. After Seiford and Zhu (1999), scholars continue to explore the profitability and marketability efficiency of banks and financial institutions worldwide such asLuo (2003)'s study on the US large banks andKao and Hwang (2013)'s research on Taiwan non-life insurance firms.

The two-stage DEA process for profitability and marketability efficiency are not only employed for banks and financial institutions but also for non-financial companies. Zhu (2000) estimates earnings and market value efficiency performance for Fortune 500 companies by applying similar two-stage DEA inputs and outputs asSeiford and Zhu (1999). Then, Lo (2010) creates a profitability and marketability framework for sustainable business of the large US companies.

Regarding manufacturing sectors, there are various literature measuring manufacturing firms' profitability in both developed and emerging markets, including Chandra et al. (1998)'s study on Canadian textile companies, Duzakin et al. (2007)'s research on Turkish industrial enterprises, and Erdumlu (2015)'s research on Turkish textile firms. Nevertheless, only few papers investigate both profitability and marketability of manufacturing firms. For instance, Hung and Wang (2012) employ two-step DEA process of Seiford and Zhu (1999) for manufacturing firms in Taiwan. Lee et al. (2013) evaluate the profit generating and market value efficiency of Biotechnology and Medical Equipment Industries in Taiwan. In Vietnam, however, there is no study exploring the profitability and marketability efficiency of non-financial companies in general and manufacturing firms in particular.

## 2.2.	Financial and non-financial factors affect firms' efficiency performance

Timmer (1971), the first economist evaluates the effects of firms' factors on levels of efficiency, states that knowing the technical efficiency of an industry is an important issue; but finding the sources of inefficiency is twice as important. However, there has been a limited number of researches investigating the impacts of factors on firms' profit efficiency and no research estimating the determinants of marketability efficiency. In general, most of previous papers explore the influences of different factors on firms' technical efficiency. According to previous studies, the most dominant factors in the prior researches that have impacts on firms' efficiency levels include firm size, firm age, capital structure, firm liquidity, and industries' characteristics.

Timmer (1971) reveals that the number of labours and total assets, which reflect firm size, are two important elements that affect corporates' technical efficiency. However, the relationship between firm size and corporate efficiency are controversial across different countries and business sectors worldwide. Pitt and Lee (1981)'s research on Indonesia weaving companiesand Amornkitvikai and Harvie (2010)'s estimation on manufacturing firms in Thailandfind a positive binding between firms' scale and their efficiency levels. In contrast, Nikaido (2004)'s research in India andLe and Harvie (2010)'s study in Vietnam find negative impact of firm size on firms' efficiency.

Firm age is also a critical factor resulting in variations of firms' efficient levels. Previous studies of Timmer (1971)and Sandvold (2016) show the positive relationship between firms' age and firms' technical efficiency. On the contrary, the negative relationship between firm age and technical efficiency is demonstrated in the studies of Tran et al. (2008) and Singh et al. (2013).

With respect to corporates' capital structure, Margaritis and Psillaki (2007) and Mok et al. (2007) demonstrate a positive and significant effects of leverage ratio on firms' levels of efficiency.However, Zeitun and Tian (2007) and Cheng and Tzeng (2011) show an inverse and statistically significant relationship between the level of debts and firms' technical efficiency.

Regarding the impact of liquidity on firms' efficiency performance, Singh and Fida (2015) conclude that liquidity has a significantly positive relation with firms' efficiency levels. In contrast, Goldar et al. (2003) and Amornkitvikai and Harvie (2010) discover a negative effect of firms' liquidity on their technical efficiency.

Industries' characteristics also affect firms' efficiency. Badunenko et al. (2006) make a broad investigation on the efficiency of 35000 firms across 256 Industries in Germany and reveal that industry effects account for one-third of efficiency variations among the firms. Reiff et al. (2002) when estimating the efficiency of manufacturing industries in Hungary find that levels of efficiency vary among industries.

In Vietnam, there is a number of papers investigating the impacts of factors on Vietnam firms' technical efficiency. However, there is no study investigating the determinants of profit-generating and market-value efficiency of Vietnam's non-financial enterprises. Therefore, this research contributes to bridge the considerable gap in Vietnam literature.

3. RESEARCH METHODOLOGY

3.1. Research methods

This study employs **two-stage Data Envelopment Analysis (DEA) process** (Seiford and Zhu, 1999; Hung and Wang, 2012) to measures individual firms' profitability and marketability efficiency scores, and **Tobit regression model** (Tobin, 1958) to examine the impacts of firms' financial and non-financial characteristics on firms' efficiency performance.

3.1.1. Two-stage DEA process

Data Envelopment Analysis (DEA – Charnes et al., 1978) is a linear programming technique to compare relative efficiency of one decision-making unit (DMU) with other DMUs in the sample. This technique creates a frontier group of an efficient DMU and compares to other inefficient ones to assess efficiency. DEA does not require specifying functional form for efficiency frontiers, while allowing a combination of multiple inputs and outputs in calculating the efficiency. DEA enables researchers to identify relative efficiency of units working in a complex system. According to DEA, an efficient unit has efficiency index equal to 1, while indexes of ineffective units are measured by identifying their relative positions to the efficiency frontier. Hence, data generated from DEA is useful for managers to have a clear picture about their relative performance to other units so as to identify targets and improve the operation of inefficient units.

In this study, each manufacturing firm is an DMU. The firms' profitability and marketability efficiency are measured by the two-stage DEA process adapted from Seiford and Zhu (1999), Hung and Wang (2012) and modified as in Figure 1.
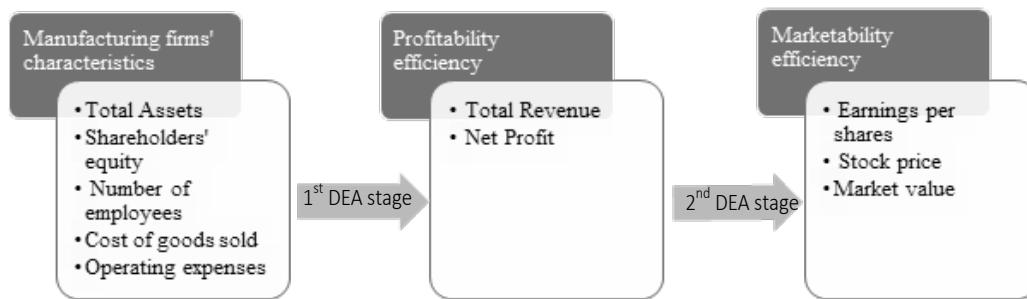
Figure 1. *Two-stage DEA process to measure profitability and marketability efficiency of manufacturing firms in Vietnam*

3.1.2. Tobit regression models

After obtaining firms' profitability and market performance scores from two-stage DEA process, the study employs Tobit regression model (Tobin, 1958) to investigate the impacts of the companies' financial and non-financial characteristics on corporates' efficiency performance in manufacturing sector and sub-sectors. With the efficiency scores' properties of 0 to 1, the Tobit regression model is considered to be the most suitable model for intercepted data (Gujarati, 2011).

With the aim of investigating the impacts of both financial and non-financial factors including *headcount* (Timmer, 1971), *total assets* (Timmer, 1971; Pitt and Lee, 1981), *firm age* (Pitt and Lee, 1981; Chu and Kalirajan, 2011), *leverageratio* (Mok et al., 2007; Cheng and Tzeng, 2011), and *liquidity* (Goldar et al., 2003; Fida, 2015; Edjigu, 2016) on Vietnam manufacturing firms' efficiency performance, this study constructs Tobit regression models as follows:

Model 1:

$$PROF\_EF_{it} = \alpha_1 + \alpha_2 AGE + \alpha_3 CASH_{it} + \alpha_4 HEADCOUNT_{it} + \alpha_5 LEV_{it} + \alpha_6 TA_{it} + \epsilon_{it}$$

Model 2:

$$MRK\_EF_{it} = \beta_1 + \beta_2 AGE_{it} + \beta_3 CASH_{it} + \beta_4 HEADCOUNT_{it} + \beta_5 LEV_{it} + \beta_6 TA_{it} + \epsilon_{it}$$

Where: *PROF_EF* and *MRK_EF* are Profitability and Marketability efficiency scores of firms measured from DEA method*; AGE* is the number of years since the firm's information was first listed in the Vietnam stock market; *CASH* represents liquidity and is the percentage of cash and equivalents over total assets; *HEADCOUNT*

is the number of employees at the end of the year;*LEV*represents capital structure andis percentage of total liabilities over total assets*; TA* is total assets and determined by the natural logarithm of the firm's total assets.

Finally, following Reiff et al. (2002) and Badunenko et al. (2006) who state that industry characteristics affect firms' efficiency levels, this study classifies Vietnam manufacturing firms into sub-sectors to determine if there is any difference in efficiency levels as well as their determinants among various manufacturing industries.

3.2. Data collection and categorization

The study collects annual data of 102 experienced manufacturing companies that are listed on Ho Chi Minh Stock Exchange and Hanoi Stock Exchange during a ten-year period from 2007 to 2016. All data in the research are extracted from Bloomberg, SPEEDA, companies' financial statements and annual reports.

Based on manufacturing industries' production characteristics in Vietnam, the study categorizes 102 investigated manufacturing companies into the three sub-sectors as in table 1:

Table 1.*Manufacturing sub-sectors' classification and number of investigated firms*

Sub-sector number	Name of manufacturing sub-sector	List of manufacturing industries	Number of investigated firms
1	Global technology application	- Chemicals, pharmaceuticals	15
		- Equipment, machinery and vehicles	
2	National resource-intensive production	- Coke and refined petroleum products	44
		- Metallic and non-metallic mineral products	
		- Rubber and plastics products	
3	National labour-intensive production	- Wood, paper products, recycling products	
		- Textiles, leather and footwear	
		- Printing and publishing	
		- Food, beverages and tobacco	43
		- Furniture and household goods, jewellery	
		- Other unclassified manufacturing industries	
Total			102

4.   RESEARCH RESULTS

4.1.   Two-stage DEA process results

4.1.1.DEA results of stage 1 – Profitability efficiency scores

By applying DEA technique, the research gains the profitability efficiency scores of individual Vietnamese listed firms in manufacturing sector and sub-sectors. The average scores of firms in manufacturing sector and in each sub-sector in ten years are reported in Table 2 below:

Table 2.*Profitability efficiency scores of firms in manufacturing sector and sub-sectors*

Sub-sector	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Avg.
1	0.961	0.926	0.908	0.941	0.908	0.939	0.932	0.930	0.942	0.900	0.929
2	0.940	0.919	0.902	0.936	0.938	0.936	0.944	0.928	0.908	0.898	0.925
3	0.941	0.884	0.873	0.899	0.910	0.908	0.918	0.897	0.888	0.886	0.900
All 0.943 0.905			0.891	0.921	0.922	0.925	0.931	0.915	0.905	0.893	0.915

As shown in table 2, the profitability efficiency scores of Vietnam manufacturing firms are relatively high (the average score for all firms in 10 years is 0.915). However, the levels of firms' profitability efficiency in manufacturing sector and each sub-sector fluctuate over time. While sub-sector 2 and sub-sector 3 have the same trend with the manufacturing sector during the period 2010 - 2015, sub-sector 1 has different movement (see Figure 2). However, on average, manufacturing firms in sub-sector 1 has the highest profitability efficiency scores than other sub-sectors and all manufacturing sector during ten-year period from 2007 to 2016.
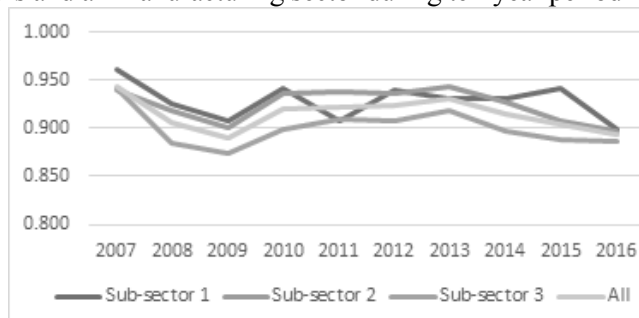
Figure 2. *Movement of profitability efficiency of Vietnam manufacturing firms*

4.1.2. DEA results of stage 2 – Marketability efficiency scores

Table 3 reports the marketability efficiency scores of Vietnam experienced listed firms in manufacturing sector and each sub-sector.

Table 3. *Marketability efficiency scores of firms in Vietnam manufacturing sector and sub-sectors*

Sub-sector	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Avg
1	0.379	0.443	0.312	0.337	0.371	0.285	0.305	0.248	0.135	0.118	0.293
2	0.461	0.433	0.420	0.419	0.315	0.280	0.334	0.275	0.205	0.199	0.334
3	0.477	0.439	0.411	0.456	0.392	0.322	0.365	0.351	0.245	0.237	0.369
All	0.456	0.437	0.400	0.423	0.356	0.299	0.343	0.303	0.212	0.203	0.343

In comparison with profitability efficiency, the scores of marketability efficiency of investigated firms is significantly lower (the average score of all firms in the manufacturing sector during the period of 2007 – 2016 is 0.343).

When taking the average marketability efficiency scores, sub-sector 1 still has more fluctuated movement than other sub-sectors. The sub-sector 1 also has the lowest average marketability efficiency scores during the period of 2007 – 2016. However, all of the three sub-sectors have the tendency to go down over time (see Figure 3). It indicates that the investigated firms in this research are becoming more and more marketability inefficient.
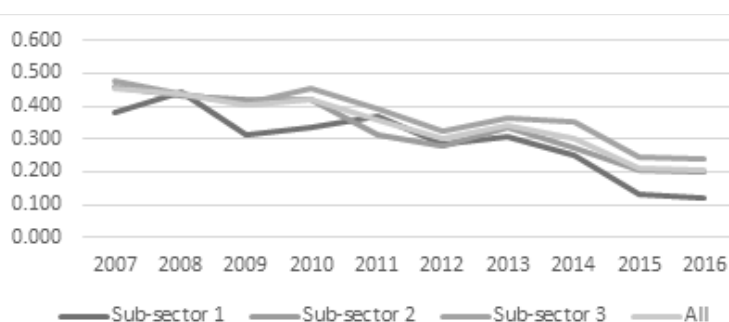
Figure 3. *Movement of marketability efficiency of Vietnam manufacturing firms*

4.2. Tobit regression results

4.2.1. Descriptive statistics:

A table of descriptive statistics to provide an overview of Vietnam experienced manufacturing firms' financial and non-financial characteristics is given below:

Table 5. *Descriptive statistics of independent variables*

	AGE	CASH	HEADCOUNT	LEV	TA
Mean	4.38	0.113	1210	0.43	2.97
Median	4.00	7.89	643.00	0.43	3.02
Maximum	13.00	0.54	10565.00	0.85	6.99
Minimum	0.00	0.03	1.09	0.05	-0.35
Std. Dev.	2.72	10.46	1549.14	0.20	1.43
Skewness	0.51	1.56	2.54	0.10	0.13
Kurtosis	2.82	5.25	10.40	1.99	2.90
Jarque-Bera Prob.	0.00	0.00	0.00	0.00	0.39
Observations	587	587	587	587	587

Regarding non-financial variables, the average number of years listed and the average number of employees in the research are 4.38 and 1210 respectively. In terms of financial variable, the average percentage of cash and debts over total assets are 11.3% and 43% correspondingly.

Besides, descriptive statistics table has shown the results of skewness and kurtosis calculation as well as Jarque-Bera test. The results show that except Total Assets (TA), all other variables in the models are not normally distributed.

For manufacturing sub-sectors' investigation, each sub-sector's means of variables are reported in Table 6.

Table 6. *Mean of variables in each sub-sector*

Mean	AGE	CASH	HEADCOUNT	LEV	TA
Sub-sector 1	6.15	0.123	814	0.41	3.739
Sub-sector 2	5.73	0.961	1177	0.48	3.236
Sub-sector 3	6.13	0.118	1417	0.41	2.769

Table 6 shows that sub-sector 1 is the most experienced group because of the longest time listed in Vietnam stock market. Sub-sector 1 also has the largest capital but smallest number of employees. This data is appropriate to the characteristics of sub-sector 1 that is highly innovative. In contrast, sub-sector 3 is has the smallest total assets but the highest number of employees due to the production feature of this sub-sector that is labour intensive.

4.2.2. Effects of financial and non-financial characteristics on manufacturing firms' profitability efficiency

Table 7 reports the regression results of Model 1 testing the effects of financial and non-financial factors on firms' profitability efficiency scores:

Table 7. *Tobit regression results for Model 1*

	All	Sub-sector 1	Sub-sector 2	Sub-sector 3
Variables	Coefficent	Coefficient	Coefficient	Coefficient
C	0.844***	0.847***	0.874***	0.818***
AGE	-0.003***	-0.003	-0.004***	-0.003***
CASH	0.001***	0.002***	0.002***	0.001***
HEADCOUNT	0.0000009	0.0000237**	0.00000259	-0.00000265

| LEV | 0.091*** | -0.027 | 0.106*** | 0.128*** |
| TA | 0.011*** | 0.018*** | 0.002 | 0.014*** |

*Note: ***, **, * level of statistical significance is equal to 1%, 5% and 10%, respectively.*

Among five independent variables, CASH has significantly positive impacts on firms' profitability efficiency in manufacturing sector and all of three sub-sectors. That is, the higher the levels of cash over total assets are, the better scores of profitability efficiency the Vietnam manufacturing companies achieve.

LEV and TA both have positive and significant effects on manufacturing sectors but have different impacts on sub-sectors. While LEV is positively related to profitability efficiency of firms in sub-sector 2 and 3, TA has the co-movement with the companies' earning efficiency in sub-sector 1 and 3. These results indicate that if the manufacturing companies in sub-sector 2 and 3 increase their level of debts, they will get higher profitability efficiency scores. Similarly, if the businesses in sub-sector 1 and 3 raise the total capital, they will attain better income-generating efficiency.

In contrast, there are negative and significant relationship between AGE and firms' profitability efficiency in manufacturing sector, sub-sector 2 and sub-sector 3. All of the relationships above are significant at 1% level. Thus, in sub-sector 2 and 3, manufacturing firms with more experience of listing on the stock market tend to be less efficient in generating profits.

Finally, HEADCOUNT only affects firms' ability to generate income in sub-sector 1. This relationship is positive and significant at the level of 5%. The result signifies that when the manufacturing firms in sub-sector 1 increase the number of employees, they are likely to be more profitability efficient.

4.2.3. Effects of financial and non-financial characteristics on manufacturing firms' marketability efficiency

Tobit regression results of Model 2 estimating the effects of financial and non-financial factors on firms' marketability efficiency scores are displayed in Table 8:

Table 8. *Tobit regression results for Model 2*

Variables	All	Sub-sector 1	Sub-sector 2	Sub-sector 3
	Coefficent	Coefficent	Coefficent	Coefficent
C	0.785***	0.632***	0.788***	0.832***
AGE	-0.017***	-0.014**	-0.022***	-0.014***
CASH	0.001	-0.001	0.002	0.0003
HEADCOUNT	0.000004	-0.00003	0.00001	0.000005
LEV	-0.320***	-0.466***	-0.195***	-0.409***
TA	-0.069***	-0.004	-0.084***	-0.079***

*Note: ***, **, * level of statistical significance is equal to 1%, 5% and 10%, respectively.*

In manufacturing sector and all of three sub-sectors, CASH and HEADCOUNT has no impact on firms' marketability efficiency.

In contrast, for entire manufacturing sector and different sub-sectors, AGE and LEV both show negative and significant relationship with the corporates' market value efficiency. That is, the longer time the companies listed in the stock market and the higher level of debts the companies hold, the less marketability efficient the businesses are.

Lastly, TA has no effect on firms' marketability efficiency in sub-sector 1 but has negative influences at 1% level of significance on market value efficiency of firms in manufacturing sectors as well as sub-sector 2 and 3. Hence, when the firms in sub-sector 2 and 3 enlarge their total assets, they get lower market value efficiency.

5. RESEARCH CONCLUSIONSAND POLICY IMPLICATIONS

5.1. Conclusions

Running two-stage DEA method and Tobit regression models on 102 experienced manufacturing companies listed in Vietnam stock market, the research comes into the following conclusions:

First, the study reveals that, in general, Vietnam manufacturing firms are profitability efficient but marketability inefficient. Besides, different manufacturing sub-sectors achieve different levels of profitability and marketability efficiency. Sub-sector 1 containing manufacturing firms with high technology application have the highest average score of profitability efficiency but lowest average score of marketability efficiency during ten-year period from 2007 to 2016. In contrast, sub-sector 3 with labour-intensive manufacturing firms have the lowest average score of profitability efficiency but highest average score of marketability efficiency in the same period.

Second, there is a reverse relationship between the number of listed years of Vietnam manufacturing firms and their efficiency performance. That is, old Vietnam listed manufacturing companies tend to be less profitability and marketability efficiently than newer ones. Explaining for this phenomenon, according to Agarwal and Gort (1996 and 2002), operating for a long time in the industry may lead to obsolete knowledge, technology, and competitive advantages for the companies. Another reason is that success and experience gradually create regulations through organization and processes, which can frame firms in procedure-related rigidities, thus harm the development of firms (Leonard-Barton, 1992).

Third, financial factors have diverse impacts on firms' profitability and marketability efficiency in manufacturing sector and each sub-sector. To all manufacturing companies, holding more cash is beneficial for company's ability to generating profits. Borrowing more loans, however, have two-sided effects on firms' efficiency performance. The empirical results show that higher debts can help manufacturing firms enhance profitability efficiency but impair the companies' marketability efficiency. Besides, enlarging enterprises' scales might also demolish firms' market value efficiency.

5.2. Policy implications for manufacturing startup companies

According to the development of manufacturing industries in Vietnam, there are abundant opportunities for startup companies in this sector. From empirical results assessing Vietnam experienced manufacturing companies, this study provides implications for manufacturing startups in Vietnam as follow:

As the newcomers in the market, the startup companies should make use of their advantages including innovation and technology to better their ability of generating profit, especially in sub-sector 2 and 3, which mostly depend on resource-intensive production. Also, startup companies should focus on market attractiveness to boost their businesses' market value.

In terms of financial strategy, startup companies should hold an adequate amount of cash because it improves both profitability and marketability efficiency. With enough cash, there will no shortage in daily operation. Moreover, managers also have chances to choose the best projects to generate future profits.

Finally, startup companies should consider their capital structure very carefully. There is a trade-off between profit and market value when the companies borrow more loans. If the startups need to boost their profit, increasing level of debts might be a good choice. However, if the startups need to boost their market value, the debt ratios must be low. To enlarge the company, raising total equity should be considered before raising the debts.

5.3. Policy implications for Vietnamese government

The study suggests several policy implications for Vietnamese government to help entrepreneurs open their own manufacturing startups and operate them profitably:

- Highly supporting manufacturing startup companies in listing process and raising funds from potential investors. By this way, manufacturing startup companies will be able to increase their firm size by raising total equity and lessening the debt ratio.

- Building a financial mechanism that promote the development of manufacturing startups such as low leasing fee for production facilities, low-interest loans and incentive tax rates. With lower expenses, startup company can increase their internal source of fund as well as have more cash in hand.

- Synchronously developing the markets of goods and production inputs, so that startup manufacturing companies can have sufficient resources to develop their production and business.

- Providing mechanisms to promote the export of manufacturing goods in countries that have signed the trade agreements, thus increasing the profitability of manufacturing firms.

- Intensifying the training for startups to raise the managerial, financial as well as research and development capability, so that they are able to survive, stand stably and grow in the market.

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THE IMPACT OF THE MICRO FACTORS TO THE LIQUIDITY OF LISTED STOCKS ON THE HO CHI MINH STOCK EXCHANGE

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ABSTRACT: *The paper aims at investigating the effect of the micro factors on the liquidity of listed stocks on the Ho Chi Minh Stock Exchange. The data of 182 listed companies on the Ho Chi Minh Stock Exchange (HOSE) were used to for this study which covers a period of 5 years from the first quarter of 2011 to the third quarter of 2017. The result shows that company size, market to book value, earning per share and financial leverage have insignificant relation with the liquidity of stocks.*

Keywords: *Liquidity; liquidity stock; listed stocks; micro factors.*

1. INTRODUCTION

Liquidity is one of the most important factors in assessing the stability and effectiveness of the stock market. The liquidity of the financial market, especially the stock market liquidity is a matter concerned by managers, investors, government, and researchers. In good condition of the liquid share, investors can easily sell stocks to recreate initial funds or easily sell it again and invest in other stocks for profit. On the other hand, if the stock is illiquid, investors may have troubles in the transaction (resulting in transaction costs). So, they may suffer financial loss from non-withdrawal when the stock price falls.

Liquidity plays an essential role for a business because it is the position, the prestige, the potential of a business. The stock of firm has good liquidity when it is easy to trade on the market, attracts investors to invest in to seek for profit. Therefore, business has a surplus capital. In contrast, if the stock of a business is illiquid, the business will suffer a lot of negative impact on the performance. That will force them to sale their investment projects, assets. They have to raise capital at expensive fees. Still, the worst is bankruptcy. Therefore, studying about stock's liquidity, especially, the factors affecting the liquidity is very important.

Over the past ten years, the financial market has grown exponentially in Viet Nam. But also it contains many inherent risks and potentialities depending on the fluctuation of the macroeconomic and the enterprises themselves. On the stock market, the risk of stock's liquidity is increasing with more complex trends. Although the liquidity risk on Viet Nam securities market has not been clearly disclosed, this has made difficulties in making investment decisions which is a great concern of policymakers developing the market, public companies and investors.

In Vietnam, the number of studies on the liquidity of stocks up to now still has a variety of gaps. Major studies focus on measuring macroeconomic fluctuations, measuring micro factors very little, or just focusing on a particular micro factor. In addition, the results of the research have not come to a uniform conclusion and clarified the impact of micro factors on the liquidity of stocks on the stock market.

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Starting from the need for research, the research team decided to select the topic "The impact of micro factors on the liquidity of stocks of listed enterprises on the Ho Chi Minh Stock Exchange".

2. STUDY OVERVIEW

2.1. Measures of liquidity

Liquidity is an abstract concept, with various definitions by researchers and professional investors. In the simplest sense, liquidity is the low level of trading a certain stock. Previous research mainly focused on developing liquidity measures from developed markets to emerging ones. A number of measures have been introduced to choose how to measure the liquidity of a stock from a variety of perspectives and various liquidity concepts. Typically is Amihud (2002) that measured liquidity via price sensitivity, Lesmond et al. (1999) measuring liquidity based on the frequency of the zero-yielding day, or Roll (1984) measuring liquidity based on bid and ask price. Liquidity is such a broad definition of many different aspects that only one measure cannot cover all. Domestic writings by authors such as Tran Thi Hai Ly (2015) have used four liquidity measures which are the relative price differences, stock turnover, price sensitivity measure, the frequency of zero-yielding transactions day to consider the impact of monetary policy on the liquidity of the Vietnamese stock market. In addition to adoption of the above measures, the study by Le Dat Chi and Hoang Thi Phuong Thao (2015) uses two additional measures, which are the implied price difference and market depth to increase the soundness of the study on "The impact of the global financial crisis on the liquidity of Vietnam's stock market".

2.2. Impacts of factors on stock liquidity of listed companies

2.2.1.Factors of company size

According to previous studies in the world, the size of an enterprise's operation is primarily measured by the level of market capitalization. In the process of their development, enterprises have a tendency to expand their sizes to diversify their production activities; the larger the size of their capital is, the easier it is to attract institutional or professional investors. Proper liquidity means high likelihood to attract investors to put money into investment opportunities in order to make profits in the market. The results of studies in developed and developing countries are also consistent with the mentioned rationale above, given that the size of the business is in mutual relation to the liquidity of the stock. (Woon Gyu Choi, David Cook (2005); Shuenn (2007); Madyan et al. (2013); Wasfi A. Al Salamat (2016); Sedeaq Nassar (2016). However, while examining the determinants of 1048 US companies from 1971 to 1994, Opler et al. (1999) have shown that the relationship between company size and stock liquidity is inverse. The author argues that larger companies with better access to capital markets will hold less cash, which in turns makes the liquidity index worse.

2.2.2. Factors of market to book value

The market to book value (MB) is an indicator to determine the real value of a company by comparing the book value (book value) with the market value of the company. This coefficient determines whether the stock price of the company is above or below the value by comparing the market value with the book value. If the ratio is greater than 1, it means that the market value is greater than the book value. Thus, investors are assessing the value of the company higher than the book value. If the stock price is rising and being traded in a large amount in the market, liquidity will increase. Conversely, if the coefficient is less than 1, then the market price is lower than the book value, which means a decrease in stock price or the reduction in liquidity. Investors use this ratio as a factor in determining whether or not to invest in the stock. The research conducted by Madyan et al. (2013) shows the direct correlation between the book to market value and the liquidity of the stock. However, the results were inverse in the studies by Wasfi A. Al Salamat (2016) and Sedeaq Nassar (2016).

2.2.3. Factors of business performance

According to previous studies, business performance of an enterprise is usually measured by three main indicators: return on assets (ROA), return on equity (ROE), earnings per share (EPS), providing information on the performance of businesses on the financial side and attaching to the economic interests of investors. With regards to the perspective of equity holders, ROE and EPS are specially paid attention to because they reflect how much return after tax is earned for each equity invested. On the corporate managers' side, ROA is a notedindicator as it shows the efficiency of asset management and usage to generate profit (each asset to generate how much return after tax). Stocks of proper business performance, high profitability and high-income levels will attract investors to exploit profit opportunities and thus increase the liquidity of stocks.

Studies conducted by Wasfi A. Al Salamat (2016), Woon Gyu Choi and David Cook (2005) contend that earnings per share (EPS) are directly related to stock liquidity. However, a study by Sedeaq Nassar (2016) suggests that there is a negligible relation among ROE, EPS and liquidity of stocks.

2.2.4. Factors of financial leverage

The leverage of the business includes operational leverage and financial leverage. Among previous studies of factors affecting stock liquidity, all have used financial leverage to reflect the leverage of an enterprise.

According to the study conducted by Opler et al. (1999) experimenting the factors affecting the liquidity of 1048 US companies from 1971-1994 and Ferreira and Vilela (2004) and Sedeaq Nassar (2016) reveals that the inverse relation between liquidity and leverage. While based on what is shown in Wasfi A. Al Salamat (2016), financial leverage has a direct proportion with liquidity.

In Vietnam, some authors considered liquidity at the market level and found that the liquidity of the stock market in Vietnam is not high (Do Duc Minh (2010), Nguyen Thanh Phong (2012)). The number of previous researches on the stock liquidity of listed companies on the stock market is relatively small, most of which focus on the use of macro-measurement models, those that thoroughly study the influence of micro variables on liquidity have not been properly paid attention to. The lack of an evaluation of this micro-factor system will be a shortcoming in objective measurement of stock liquidity.

A research by Nguyen Dinh Thien, Nguyen Thi Mai Tram and Nguyen Hong Thu mentioned the impact of the following factors: (1) P / B ratio = Price / Book value, (2) ROA = returns / Average Asset, (3) Debt Ratio = Debt / Total Assets on liquidity of listed companies in Vietnam, using secondary data extracted from financial statements of listed companies on Vietnam stock market and calculated in the period of 2007 - 2013. The second study by Tran Thi Hai Ly (2015) has looked at the effect of monetary policy on the liquidity of the Vietnam stock market in the period from September 2007 to November 2014, through two variables of monetary policy including money supply growth and interbank interest rate. The third study by Le Dat Chi and Hoang Thi Phuong Thao (2015) discusses the methods of measuring liquidity and the empirical model of examining the impact of the global financial crisis.

3. METHOD OF RESEARCH

3.1. Data Analysing

The sample size is chosen based on the listing time requirements of enterprises. In particular, the calculation requires that the data sequence be long enough. Therefore, after the screening process, 182 listed enterprises were selected for the study.

This paper is concentrated on researching for non-finance enterprises. Data used in this paper contain 182 companies listed in the HOSE from January 2011 to September 2017. Data is supplied by Stoxplus – a company focusing on gathering and analysing financial data in Vietnam.

3.2. Researching Variables

Basing on the literature reviews, this paper is analysed "the influence of the micro factors on the liquidity of HOSE's stock", using following regression model:

$$LQT_{it} = \beta_0 + \beta_1 SIZE_{it} + \beta_2 MB_{it} + \beta_3 EPS_{it} + \beta_4 LEV_{it} + u_i + \varepsilon_i \qquad (1)$$

In this model:

LQT : Liquidity

SIZE: Company size

MB: Market to book value

EPS: Earning per share

LEV: Financial leverage

β_i (beta): The coefficients of liquidity β_i

Table 1. *Independent Variable.*

Factors	Calculation	Definition
Company size	Size = Ln (Total Assets)	The company size is primarily measured by the level of total assets
Market to book value	*MB = Market Value Of Firm / Book Value Of Firm*	The market to book value is an indicator to determine the real value of a company by comparing the book value (book value) with the market value of the company.
Business performance	*EPS = Earnings After Tax / Total Outstanding Shares*	Earnings per share is the portion of a company's profit allocated to each outstanding share of common stock. Earnings per share serve as an indicator of a company's profitability.
Financial leverage	LEV = Total Liabilities / Total Assets	Financial leverage is the degree to which a company uses fixed-income securities such as total liabilities and preferred total assets.

Source: Author's summary

The coefficients β1 to β4 are showed the effect of micro factors on the liquidity of listed firms. With a defined level of statistical significance, if the coefficients are zero, it means that the coefficient is not statistically significant, meaning the factor is not affect the liquidity of stocks of listed firms on the HOSE.

To base on that, the authors propose the following hypotheses:

3.2.1. Company size

The size of an enterprise's operation is primarily measured by the level of market capitalization. In the process of their development, enterprises have a tendency to expand their sizes to diversify their production activities; the larger the size of their capital is, the easier it is to attract institutional or professional investors.

Proper liquidity means high likelihood to attract investors to put money into investment opportunities in order to make profits in the market. In addition, shares of large-scale enterprises can be traded more easily, more quickly. The results of studies in developed and developing countries are also consistent with the mentioned rationale above, given that the size of the business is in mutual relation to the liquidity of the stock. (Madyan et al. (2013); Wasfi A. Al Salamat (2016); Sedeaq Nassar (2016)). Inheriting these studies, the research team makes one hypothesis about the impact of company size on stock liquidity:

Hypothesis 1: The company size influences positively on the listed stock's liquidity on the HOSE

3.2.2. Market to book value

The market to book value (MB) is an indicator to determine the real value of a company by comparing the book value (book value) with the market value of the company. If a company has a market price of stocks higher than its book value, this is usually a sign that the company is doing well, earning a high return on its assets. Investors use this ratio as a factor in determining whether or not to invest in the stock. According to a study by Madyan et al. (2013), Nguyen Dinh Thien et al. (2014) showed a direct correlation between market to book value and stock liquidity. The authors propose hypothesis (2) that the market value of the book value will affect the liquidity of the stock.

Hypothesis 2: The market to book value of the firm has a positive impact on the liquidity of listed stocks on the HOSE

3.2.3. Business performance

Hansen, S., & SungSuk, K. (2013); Sedeaq Nassar (2016); And national research showed that the relationship between business performance and stock's liquidity was a positive impact. This can be explained by the fact that if a business has good business results and high profitability, then high-interest shares will attract investors to exploit profit opportunities and thus increase the liquidity of the stock. In terms of business performance, in a similar way to ROA, ROE, and R, the research team suggest that EPS is likely to have a positive impact on the liquidity of stock. This view is also verified in studies by Wasfi A. Al Salamat (2016), Woon Gyu Choi & David Cook (2005).

Hypothesis 3: Earnings per share have a positive impact on the liquidity of listed stocks on the HOSE

3.2.4. Financial leverage

The leverage of the business includes operational leverage and financial leverage. Among previous studies of factors affecting stock liquidity, all have used financial leverage to reflect the leverage of an enterprise.

The use of leverage is a double-edged sword. For high growth companies, as most companies are state-owned, it is often easy to receive preferential terms without considering the effectiveness of using (or otherwise, this is a state-sponsored company, so its risk is very low even if the business uses leverage). For low-growth companies (often without governmental factors), it is feared that borrowing increases the likelihood of bankruptcy, thus not leveraging the investment. However, it should be noted that during the research period from 2011 to 2017, the market saw a lot of difficulties. Opportunities for businesses were less, and the risks were higher. If business leverage at a high level will be a disadvantage, investors will not venture to take part. This suggestion was also mentioned in the study by Nguyen Dinh Thien et al. (2014) or Opler et al. (1999). Applying test results in the above studies, the hypothesis (4) on the effect of financial leverage on the liquidity of stocks:

Hypothesis 4: Financial leverage has the opposite effect on the liquidity of stocks listed on the HOSE
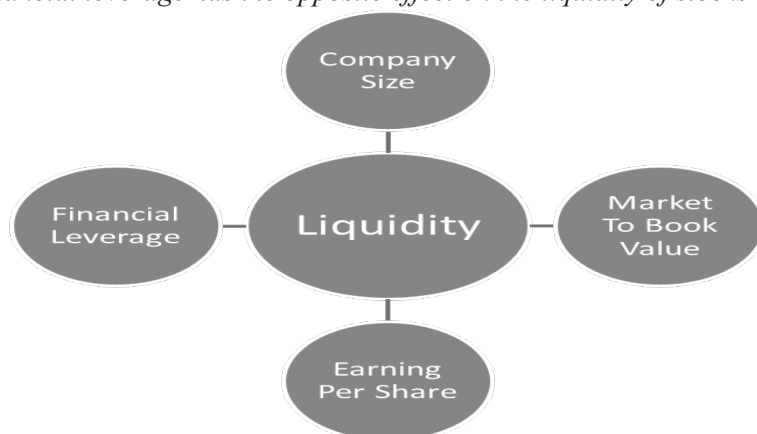
Fig.1. *Study hypothesis.*

4. CONCLUSIONS

4.1. Descriptive statistic and Matrix of correlation

Table 2. *Descriptive Statistics of Variables.*

Variables	Observations	Mean	Standard Dev	Minimum	Maximum
Size	4914	27.98338	1.279983	25.37816	32.95373
MB	4914	0.8026956	0.6898522	0.07061	9.159143
EPS	4914	642.1008	949.9543	-6054.714	19608.96
LEV	4914	0.4972366	0.2070515	0.0014605	0.9768643
Turnover	4914	0.0361323	0.0884772	0	2.501797
Zeros	4914	0.2509428	0.1399984	0	0.9230769

Source: Calculation of authors

In the Table of Descriptive Statistics of Variables, the index SIZE has a minimum fluctuation value of 25.378 to a maximum of 32.95 and has an average value of 27.98 and a standard deviation of 1.23 indicates a large difference between the companies and the scale of them. Therefore, there are some companies with large assets, while some companies have small assets throughout the study period.

MB of about 0.07 indicates that at least one stock is valued lower than the book value, to 9.1 the stock price is greater than the book value implies that the business is expected to thrive. Future. The average value of 0.8 and the standard deviation 0.68 show no significant change in the market-to-book ratio across firms.

EPS has ranged from -6054.7 to 19608.96, meaning that while there was a profitable return per share for investors up to 608,896 dong, there was another business that resulted in a stock loss of 6054.7 dong. The average value is only 642 dong and the standard deviation is 49 dong.

LEV has values ranging from 0.001 to 0.98, which means that the total debt to total assets ratio is very small for some businesses, indicating that a number of other firms depend heavily on Equity funds to finance their assets while total debt is approximately equal to total assets, meaning that some companies rely heavily on debt to finance their assets. This index has a significance of 0.5 in the market with leverage level is still no risk and the standard deviation 0.2 there is a large fluctuation between financial leverage of enterprises in this period.

Turnovers have ranged from 0 to 2.5; 3.6% on average, while the difference was 8.8%. Although there was no big difference between liquidity in firms, average liquidity was not high.

The Zeros measure has a value from 0 to 0.92, with an average value of 25%, a standard deviation of 13.9%, and no significant fluctuation of the index between firms during the study period.

Table 3. *Correlation result between Size and MB, EPS, LEV, Turnover, Zeros.*

	Size	**MB**	**EPS**	**LEV**	**Turnover**	**Zeros**
Size	1.0000					
MB	0.2235	1.0000				
EPS	0.0774	0.2144	1.0000			
LEV	0.2720	-0.0713	-0.1777	1.0000		
Turnover	0.0974	-0.1652	0.1029	-0.0228	1.0000	
Zeros	-0.3260	-0.1167	-0.0940	0.0270	-0.2666	1000

Source: Calculation of authors

The result shows that the highest correlation coefficient is between the leverage ratio and the variable scale that is positive while the lowest correlation coefficient is between return on equity and Turnover. Further, it can be seen from the Table of Correlation result between Size and MB, EPS, LEV, Turnover, Zeros that no correlation coefficient greater than 0.3 means that there is no multi-collinearity between independent variables with one of the dependencies.

4.2. Selecting an appropriate model

Initially, the authors used the Hausman test to select either the fixed-effects model (FEM) or the random-effects model (REM) for the data set to be studied.

❖ *A measure of liquidity Turnover*

Table 4. *Hausman test result.*

Test: H0: difference in coefficients not systematic	
chi2 (3)=	92.84
Prob> chi2=	0.0000

Source: Calculation of authors

According to a test result, the p-value of the test is 0.000 which is smaller than the statistically significant level, so it is eligible to reject Ho, i.e the choice of the fixed-effect model is appropriate.

Table 5. *FEM result.*

Turnover	**Estimation coefficient (β)**	**T**	**P_value**
SIZE	0.0232064	5.68	0.000
MB	0.0349849	14.09	0.000
EPS	0.0000112	7.20	0.000
LEV	-0.0241892	-1.70	0.090
C	-0.6365153	-5.70	0.000
Confidence interval	95%		

Source: Calculation of authors

Table 5 has shown the results of the fixed-effect model. The result has shown that only LEV was not statistically significant at 5% significance level.

❖ *A measure of liquidity Zeros*

Table 6. *Hausman test result.*

Test: H0: difference in coefficients not systematic	
chi2(3)=	26.57
Prob> chi2=	0.0000

Source: Calculation of authors

According to a test result, the p-value of the test is 0.000 which is smaller than the statistically significant level, so it is eligible to reject Ho, i.e the choice of the fixed-effect model is appropriate.

Table 7. *FEM result.*

Zeros	Estimation coefficient (β)	T	P_value
SIZE	-0.0155789	-2.75	0.006
MB	-0.0294767	-8.55	0.000
EPS	-3.68e-06	-1.70	0.089
LEV	0.0968585	4.89	0.000
C	0.6647563	4.29	0.000
Confidence interval	95%		

Source: Calculation of authors

Table 7 has shown the results of the fixed-effect model. The result has shown that only EPS was not statistically significant at 5% significance level.

According to both test results, the choice of the fixed-effects model is appropriate for all liquidity measures. The result has shown that impacts of factors on liquidity measures are also significant.

First of all, SIZE that represents the factor of company size indicating a positive effect on the measure of liquidity and negative effect on the measure of illiquidity, implying that the larger the size of their total assets is, more increasing the liquidity of stocks is. This result is consistent with the results of the study of Woon Gyu Choi, David Cook (2005); Shuenn (2007); Madyan et al (2013); Wasfi A. Al Salamat (2016); Sedeaq Nassar (2016) and the author's expectations.

MB has a consistent with the impact on liquidity measures, implying that the impact of the ratio of the market value per share to the book value per share increases the stock's liquidity. This result is consistent with the results of the study of Madyan et al. (2013), Nguyen Dinh Thien et al (2014) and the author's expectations.

EPS influences the measure of liquidity Turnover. Therefore, the result has shown the positive effect between earnings per share and the stock's liquidity. This result is consistent with the results of the previous studies in the world and the author's expectations.

Financial leverage influences the measure of illiquidity Zeros, financial leverage has a positive effect on illiquidity, means that the higher the financial leverage is, the lower the stock's liquidity is. The result is consistent with the author's expectations.

The result of quantitative analyzing shows that relations between liquidity of stocks and micro factors are existing and statistically meaningful. Especially, with a 95% confidence interval, both of company size and market to book value have expected, significant, and consistent effects on liquidity for all liquidity

measures. The rest of earnings per share and financial leverage are negligible impact on the stock's liquidity, which has been found to be statistically significant in one out of two liquidity measures.

5. CONCLUSION

From the quantitative analysis of the impact of micro factors on the liquidity of the listed stocks. The authors found that the improving liquidity for listed stocks, especially, the listed code on the HOSE is essential. Improving liquidity can be based on the indirect impact on financial factors in the affected enterprises, as was demonstrated in the quantitative analysis. Accordingly, the authors propose a number of solutions and recommendations:

Firstly, to improve the business performance**.** The enterprise shows lots of growth is always a desire of the investors. Therefore, improving the performance and profitability of enterprises not only makes sense in improving the liquidity of stock of enterprises (according to the results of the research model, earnings per share positive effect on the liquidity of stocks) but also helps enterprises viable and thrive in turbulent conditions of the economy.

Secondly, to improve leverage efficiency besides to control the situation ensure payment or to increase the financial leverage for these listed firm; the first thing to be recognized that increase efficiency as well as to take advantage of loans capital. When mobilized a certain amount of loan capital that it is the time to make sure arm leverage, which is placed on a precise fulcrum to gain better profitability. However, using lots of debt, not only pressure on repayment but also increase settlement risk. Therefore, control risk and take advantage of the financial leverage that the tax shield is enough to compensate for incurred costs, so not only the profit's enterprise improving but also attracting the interest of investors.

Thirdly, to ensure sustainable growth. I.e if growth at a too fast and no commensurate with the development resources was needed so the level of risk is too high. A small fluctuation of the market may also be made to be bankrupt enterprises.

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THE AFFECT OF CAPITAL STRUCTURE ON FIRM PERFORMANCE: EVIDENCE FROM THE CONSTRUCTION FIRMS LISTED ON THE VIETNAM STOCK EXCHANGE

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ABSTRACT: *The topic of capital structure has been widely explored among the literature. Many research have tried to identify the optimum capital structure that would allow profit maximization for companies. However, with capital structure, there have been many divergent findings due to different sectors exhibiting different behaviors and model that attempt to establish relationship between capital structure and firm performance. This research therefore, seeks to identify the effect of capital structure on firm performance of 41 publicly listed construction firms listed on the VietNam Stock Exchange from 2014 to 2017.*

The objective of this research is to determine the effect and significance of capital structure on profitability, the relationship between LEV, SIZE, GROWTH, TAX and AGE with ROE.The researcher uses secondary data from audited financial statements of construction firms published from the construction firm's website.

The data collected were analyzed using excel and E-views 7 econometric software to come up with descriptive, regression and correlation results. The significance of data was measured using normality test and related, correlation, covariances , multicollinearity and heteroscedasticity of the data was investigated to check the significance of the model. The findings revealed that capital structure effect on financial performance of construction firms.

Keyword: *construction firms, capital structure, firm performance,VietNam Stock Exchange*

1. INTRODUCTION

Capital structure has been a popular research topic among the financial scholars.

A significant number of research were identified the effect of capital structure on firm performance in developed and developing countries. In the developed countries aspect, Tailab (2014) did research on American energy, Tifow and Sayilir (2015) did research Turkey manufacturing firm and Abeywardhana (2016) did research on United Kingdom manufacturing sector small and medium enterprise (SME). From 2013 forward, most of the research done in capital structure was carried on developing countries. Ogebe, et al (2013) did research on Nigeria firm performance. Kajananthan and Nimalthasan (2013) did research on Sri Lankan manufacturing firm, Hasan, et al (2014) did research on Bangladesh food, fuel and power, pharmaceuticals and miscellaneous sectors companies, Mwangi, et al (2014) did research on Kenya non-financial listed companies performance, Zeitun and Tian (2014) did research on Jordanian non-financial listed companies, Leonard and Mwasa (2014) did research on Kenya listed companies and Akeem, et al (2014) did research on Nigeria manufacturing companies performance.

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No research has been done to examine the effect of capital structure on firm performance of VietNam construction firms. Therefore this study will provide the empirical evidence on the effect of capital structure on performance firm of Vietnam construction firms from 2014 to 2017.

This paper is divided into five parts: the second section reviews literatures related to the effect of capital structure on firm performance; the third section presents the methodology and data analysis; the fourth section deals with the results and dicussions; the main conclusion are discussed in the last section.

2. LITERATURE REVIEW

According to Myers (1984), capital structure is choose of debt, equity or hybrid securities for firm to finance their business while Harris and Raviv (1991) indicated capital structure as a part of solution problem overinvestment and underinvestment. Myers (2000) defines the capital structure is a mixture of the debt and equity securities used to finance real investment. Roshan (2009) indicated that capital structure is a financial structure of an entity, is combines of debt and equity fund maintained by an entity. Finally, Brendea (2011), stated that capital structure is the long term financing used by entity while Nirajini and Priya (2013) added that capital structure refer to the way which the entity financed a mixture of long term capital and short term liabilities.

The first theory established from capital structure is the Modigliani and Millers (1958) which the research found that capital structure has no brought any impact to the firm's market value and average cost of capital. M&M 1958 theory is based assumption of perfect capital market with no tax, no transaction cost and risk free debt (Modigliani & Miller, 1958). M&M's 1958 has been supported by Cole, et al (2015) research, capital structure had no relationship with companies' stock price. In year 1963, Modigliani and Millers have published a new research paper to correct their previous error and indicated debt finance given tax advantage to firm (Modigliani & Miller, 1963). Hence, the capital structure is relevant to the firm value and firm able to maximize firm value by raise debt level in their capital structure (Sabin and Miras, 2015). Nirajini and Priya (2013) research show support to this theory, a positive relationship between debt and firm performance. M&M theory (1858 and 1963) was criticized as unrealistic due to the impractical assumption (Sabin & Miras, 2015). Imperfect capital market, transaction cost and bankruptcy cost exist in real world lead the M&M's theory to be limited applicability (Foo, et al., 2015). Deeds, et al (1995) also indicated M&M's theory only suitable to explain the capital structure decision in small firm only. Even M&M theorem have some weakness, but it provided a basis concept for the capital structure and a foundation of other theories (Ahmad, et al., 2012). Ahmeti and Prenaj (2015) also supported MM theory goes beyond the propositions themselves.

Trade-off theory was develop by multi research paper and grew up from the M&M relevant theory (Myers, 1984). Tradeoff theory indicated each financial source has own benefit and cost (Awan & Amin, 2014). The firm's optimum capital structure is identified by the tradeoff of the benefit and the cost of debt finance (Myers, 1984). Trade-off theory indicated higher profitability firm will be able to take more tax advantage by increases borrowing without risking financial distress and apply a higher portion of debt finance in capital structure (Kausar, et al., 2014). Several studies such as Goyal (2013), Javed and Akhtar (2012), Salawu (2009), Coleman (2007) and Negasa (2016) provided empirical evidence to supporting tradeoff theory, a positive relationship between debt level and profitability. However, trade-off theory were criticizes that it is correct under the assumption of no cost of adjustment (Myers, 1984). Besides that, trade-off theory has ignored the effect of retain earning in the capital structure, retain earning is no cost and no

risk (Frank & Goyal, 2005). Pettit and Singer (1985) criticize that trade-off theory is not suitable for small firms, because small firms don't have enough earning to trade-off cost of debt.

In other hand Performance is a complex word and holds myriad of meanings, due to its dimensional nature. The word can be viewed at different angle: financial and company. An entities performance can be derived by using variable that represent yield, revenue, growth and consumer satisfaction. On the other hand, financial performance, which demonstrate the maximization of shareholders wealth, can be measured by looking at a company's productivity. The calculation of financial performance is done by using profitability ratios such as Return on Assets, Retained Income, Earnings per share, Return on Investment, Price per Earning ratio, Market Capitalization, etc. When determining which profitability ratio is to be used, the objectives of firms plays a crucial role in this matter. In this research, it focuses more on firm's performance, which increases market value. Return on Assets and Return on Equity are the most popular profitability ratio used (Tudose, 2012). Previous researches have demonstrated a positive relationship between Return on Assets and capital structure. For instance, John (2013), conducted a research on the effect of capital structure on firm performance in Nigeria. By utilizing correlation analysis, and regressing data from 2007 to 2011 and employing Return on Equity (ROE) and Return on Asset (ROA) as dependent variable, and Long term Debt to Capital (LDC), Debt to Capital (DC), Debt to Common Equity (DCE), Short term Debt to Total Debt (SDTD) and Age of the Firm (AGE) as proxy for independent variable (capital structure), He found out that all independent variables were directly and significantly related to ROA, with the exception of LDC which delivered a negative but significant correlation. On the other hand, Riaz (2015) regressed data ranging from 2009 to 2013 using panel least square technique and correlation analysis. By using yearly reports of 28 listed companies in chemical industry of Pakistan, his findings showed that Total Debt Ratio (TDR) and Short-Term Debt to Total Asset (STDA) had a significant negative impact on ROA. But LTDA showed an insignificant negative effect on ROA. The relationship between ROA and Time InterestEarned (TIE) was positive as well as significant. However, Debt to Equity Ratio (DER) and Long-Term Debt to Asset LTDA) had negative and insignificant influence on ROA.

In many research conducted, ROE has delivered a negative but insignificant relationship.Khan (2012), stated in his research that financial leverage and company's profitability, represented by ROE demonstrated a negative relationship which was not significant. To represent leverage, he used Total Debt to Total Assets Ratio as well as Short Term Debt to Total Asset. Likewise, Hassan, et al. (2014) also noticed the lack of significance between capital mix and profitability measured by ROE Also, Baharuddin et al. (2011), by regressing data of construction companies from 2001-2007 of 42 construction firms listed in bursa Malaysia, and using debt to asset ratio as their independent variable, they came to a conclusion that there was a negative but significant relationship between

profitability and debt to total asset ratio. Similar result was obtained by Youssef & El-Ghonamie (2015) who employed debt ratio as independent variable with the research focusing on Egyptian construction firms

Overall literature shows that there is a negative but significant relationship between debt to asset and debt to equity with net profit margin in construction sector

3. METHODOLOGICAL FRAMEWORK

Hypothesis development

LEV: The agency theory predicts that, when firm uses more debt, the manager will face more risk of bankruptcy and then be more efficient, agency cost decreases and a better performance of company is

expected. So under the agency theory, there should be a positive relationship between leverage and the firm's performance. When a firm is operating well, the potential bankruptcy risk is low and the firm can be able to use a heavier leverage. However, under pecking order theory, firms with better profitability will tend to use less debt. As the franchise-value hypothesis in Berger and di Patti (2002) goes, the firms may use equity to protect the rents or franchise value, they will still maintain equity when they are performing well. And when a firm is over-leveraged, additional cost of debt will damage the performance of company. So the relationship between leverage and firm performance is mixed.

Hypotheses: There is a positive relationship between LEV and firm performance

SIZE: Size is an important determinant of a firm's performance. Larger firms are usually more diversified, better-managed and have a larger risk tolerance. Small firms, on the other hand, may find it more difficult to solve the information asymmetry problem and thus may appear to perform worse than big companies. Penrose (1959) argues that bigger company is easier to achieve economic of scale and then results in a better performance. The paper expects a positive relationship between firm size and firm performance. The following hypotheses will be tested:

Hypotheses: There is a positive relationship between size and firm performance.

AGE: When firms grow older, they are usually more experienced. During the growth, firms invest in research and development, store their human capital resource, and gradually discover what they are good at. Hopenhayn (1992) shows that older firms are expected to enjoy better performance. The paper expects a positive relationship between firm age and firm performance. The following hypotheses will be tested:

Hypotheses: There is a positive relationship between age and firm performance.

GROWTH: It is obvious that growth opportunity is important to a firm's performance. The paper uses sales growth as proxy. Brush (1999) argues that sales growth influence the firm's ability to catch opportunities of investment, the use of new technology and provides opportunities for economic of scale, thus benefiting the health of the whole company. The paper expects a positive relationship between firm sales growth rate and firm performance. The following hypotheses will be tested:

Hypotheses: There is a positive relationship between sales growth rate and firm performance.

TAX: Tax levels and tax structure will all influence the profitability and performance of company. When a firm is performing well, it receives a better profit, which means the firm will have more profit before tax, so it will tend to pay more tax. So this paper expects a positive relationship between firm tax burden and firm performance. The following hypotheses will be tested:

Hypotheses: There is a positive relationship between firm tax burden and firm performance.

Variable and Regresion Model

- **The dependent variable**

There are many different mearsurement of firm profitability which are used to study the relation between capital structure and firm performance. The simplest form among these measurement is ROA, which is measured by dividing net income with total assets. Beside that, to measure the owner's profitability ROE is used. Based on the literature and empirical studies, ROE are chosen the proxies for profitablity,

- **Regression Model**

This research will use two OLS regressions to study the relationship between capital structure and

firm performance. The first regression is set without square of LEV; the second regression is set with square of LEV to exam if there is a non-linear relationship between the dependent variable and the independent variable. All variables other than LEV are control variables which control for the characters of firms that may affect firm performance. Robustness check is added to both regressions in case of heterogeneity problem. All data and regressions are run by Eview 7.1. The two regression formulas are shown below:

$$ROE = \beta_1 LEV + \beta_2 SIZE + \beta_3 GROWTH + \beta_4 TAX + \beta_8 AGE + C$$

$$ROE = \beta_1 LEV + \beta_2 DE^2 + \beta_3 SIZE + \beta_4 GROWTH + \beta_5 TAX + \beta_6 AGE + C$$

Variable measurement

Table 1: Variable measurement

Variable	Definitions	Construction
ROE	Return on Equity	Gross profit / Total equity
LEV	Debt/Asset	Total Debt/Total Asset
LEVsquare	Square of LEV	Square of LEV
SIZE	Size of firm	Log (Asset)
GROWTH	Sales growth in previous year	Sales of N/ Sales of N-1 - 1
TAX	Tax burden	Tax / Gross profit
AGE	Age in operation	YEAR(N) – Birthday + 1

Methodology and Data Analysis

VietNam Stock Exchange (HNX and HOSE) host approximately 739 companies (Source: State Security Commission of Vietnam 30/06/2018) listed that comes from 25 different idustries within the economy. This reseach used the secondary data of construction firms to determine the affect of capital structure on firm performance. We use the data of 41 construction listed companies on the VietNam Stock Exchange in the period of 4 year from 2014 to 2017. Data was collected from financial statements officially published for a fiscal year from 1/1/N to 31/12/N on both Hanoi Stock Exchange (HNX) and Ho Chi Minh Stock Exchange (HOSE) and from the construction firm's website.Since we controlled for the condition of ongoing bussiness in this period our sample was well balance.

Which are the dependent variables (Return of equity) and independent variables (LEV, SIZE, GROWTH, TAX, AGE). An Eviews 7.1 Econometric solfware will be use for this purpose. The aim is to obtain the objective of this research which it to establish whether there is a relationship between capital structure and profitability of construction firms and whether such relationship is significant or not.

4. RESULT AND DICUSSIONS

Table 2: Summary of variables

	ROE	LEV	SIZE	GROWTH	TAX	AGE
Mean	0,051925	0,679023	5,729068	0,277170	0,618855	11,59756
Median	0,067474	0,725740	5,742024	0,102363	0,458561	12,00000
Maximum	0,502989	1,000000	7,200777	6,115587	8,336630	18,00000
Minimum	-1,732476	0,012106	1,000000	-0,930426	-0,729129	4,000000
Std, Dev,	0,226678	0,167448	0,621809	0,830909	0,879907	2,823476
Skewness	-4,606103	-1,906312	-2,370763	3,533394	5,533894	-0,102926
Kurtosis	32,21984	7,891625	22,24572	20,60189	43,48554	2,579738
Jarque-Bera	6414,202	262,8380	2684,679	2458,401	12037,43	1,496470

Probability	0,000000	0,000000	0,000000	0,000000	0,000000	0,473201
Sum	8,515663	114,6398	939,5671	45,45586	101,4922	1902,000
Sum Sq, Dev,	8,375380	4,570331	63,02337	112,5367	126,2006	1299,439
Observations	164	164	164	164	164	164

Table 2 present statistically: the average ROE of firms was 5.19%, the lowest was -173% and the highest was 50%.The lowest value is a very negative number because in these businesses, there are ineffective businesses that make profit before interest, tax or negative profit after tax.

Leverage (LEV) in company reached an average of 0.68, the highest was 1 and the lowest was 0.01. The debt in capital structure is approximately equal to 1 because of the inefficient business situation in some enterprises, resulting in negative profit after tax for many consecutive years, reducing the size of equity. decrease, negative equity.

Growth rate of the business listing are built at the average value at the 27,72%, low gain -93%, high gain 611%. Growth speed for business are not allowed in the construction company.

Table 3: Correlation matrix

Table 3 presents the correlation coefficients for all variables considered. As can be seen that there is the negative relation between profitability and the leverage (LEV).

	ROE	LEV	SIZE	GROWTH	TAX	AGE
ROE	1,000000					
LEV	-0,187030	1,000000				
SIZE	0,142434	0,183767	1,000000			
GROWTH	0,117048	-0,294767	-0,074478	1,000000		
TAX	0,047635	0,134066	0,066865	-0,018792	1,000000	
AGE	0,152221	0,312124	0,219174	-0,163553	-0,020486	1,000000

Table 4: Regression Model with out square

Dependent Variable: ROE
Method: Least Squares
Date: 07/25/18   Time: 10:08
Sample: 1 164
Included observations: 164

Variable	Coefficient	Std, Error	t-Statistic	Prob,
LEV	-0,362024	0,112137	-3,228418	0,0015
SIZE	0,052675	0,028180	1,869264	0,0634
GROWTH	0,023579	0,021401	1,101767	0,2722
TAX	0,020597	0,019499	1,056312	0,2924
AGE	0,017646	0,006447	2,737120	0,0069
C	-0,220724	0,167880	-1,314770	0,1905

R-squared	0,117981	Mean dependent var	0,051925
Adjusted R-squared	0,090069	S,D, dependent var	0,226678
S,E, of regression	0,216228	Akaike info criterion	-0,189064
Sum squared resid	7,387243	Schwarz criterion	-0,075654
Log likelihood	21,50325	Hannan-Quinn criter,	-0,143024
F-statistic	4,226900	Durbin-Watson stat	1,949501
Prob(F-statistic)	0,001238		

Table 4 above represent the result of the return on equity regression model. According to the results obtained, the constant value of the model is -0.2207. Meaning return on equity will amount to -0.2207, when other factors affecting it are reduced to zero. The coefficient for the return on equity against LEV is -0.3620 Hence, from the regression result, the following model was derived.

ROE= -0.3620LEV + 0.0526SIZE + 0.0235GROWTH + 0.0205TAX + 0.0176AGE - 0.2207

In pursuit to the above model, a unitary increment in debt to asset (LEV) will reduce the return on equity of the company by 0.3620. The debt to asset has also an inverse relationship with return on equity. Hence, to increase return on equity, the debt to asset will need to be reduced. This value can be explained because existence of debt would mean that the company has to pay fixed interest to its creditors, thereby reducing the total earnings of shareholders from invested capital.

Table 5: Regression Model with square of DE

Dependent Variable: ROE
Method: Least Squares
Date: 07/25/18   Time: 10:09
Sample: 1 164
Included observations: 164

Variable	Coefficient	Std, Error	t-Statistic	Prob,
LEVSQUARE	-0,929186	0,337690	-2,751592	0,0066
LEV	0,668133	0,390176	1,712389	0,0888
SIZE	0,047864	0,027667	1,730021	0,0856
GROWTH	0,033080	0,021252	1,556553	0,1216
TAX	0,022313	0,019116	1,167216	0,2449
AGE	0,015586	0,006361	2,450273	0,0154
C	-0,413146	0,178742	-2,311406	0,0221

R-squared	0,158559	Mean dependent var	0,051925
Adjusted R-squared	0,126402	S,D, dependent var	0,226678
S,E, of regression	0,211867	Akaike info criterion	-0,223967
Sum squared resid	7,047386	Schwarz criterion	-0,091655
Log likelihood	25,36528	Hannan-Quinn criter,	-0,170253
F-statistic	4,930791	Durbin-Watson stat	1,879919
Prob(F-statistic)	0,000120		

The results of the study in Table 5 show that the performance of company has the highest correlation with the capital structure when the debt ratio of company reaches 69.53% (the extreme value of the second function). This means that the performance was positively correlated with the capital structure as the debt ratio increased to 69.53% and had a negative correlation with the capital structure when the debt ratio exceeded 69.53%. Thus, the statistic in Table 2 shows that the average debt ratio of these enterprises is 67.9% which is positively correlated with the business performance.

In this model, the size of the company influences the business performance of listed companies in the construction industry; increased turnover rate; The tax rate on the net profit and the life of the business have the same impact on business performance in the construction industry.

5. CONCLUSION

Given the specification of constructional firm, as well as Vietnam's emerging market, an insight into the determinants and mechanism of capital structure is vital on its own merit. In spite of the large number of studies concerning the literature of capital structure, the drivers behind the choice of financing are still open for further researches. The primary purpose of this research is to shed light on determinants of capital structure in constructional companies in Vietnam's developing economies.

From that purpose, we attempt to implement comprehensive and accurate data set from Vietnam's stock exchange, to filter the companies based on the nature of industry, and to formulate two different models in order to minimize the threat of endogeneity. The findings offered some difference and meaningful results.

The analyses of the capital structure indicate that there is a significant negative relation between LEV and the profitability. This means that the construction firms should give more attention to the capital structure and in the long term, construction firms should consider the markets factors to forecast and make the appropriate plan for the future. That helps these firms determine the optimal capital structure. Beside that, due to the industry nature, construction firms have to come up with new solutions to cut costs and improve the productivity, such as develop the system LEAN-BIM-Prefabrication/Modularization which create a closed construction process from design to construct and assemble the building components.

In conclusion, the study examined the impact of capital structure on firm's performance selected construction firms listed on the Vietnamese Stock Exchange for the period from 2014 to 2017. These findingshave important implications for both capital structure and firm's performance of Vietnamese construction firms. Even though highly attempts in bring about clear evidence cuts via empirical results, our study still remains a lot of limitation with highly demand for future fulfilment: sample size is limited; the study is based on secondary data. Future studies should be done to include a wider number of Vietnamese construction firms and firms from similar Asian contexts.

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DETERMINANTS INFLUENCING COST SYSTEM IN VIET NAM'S PUBLIC HOSPITALS

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ABSTRACT: *In Vietnam, public hospitals are increasingly operating in a highly competitively environment and therefore cost management has become an imperative.The purpose of this research is to establish the factors influencing cost system development success among public hospitals in Vietnam. In order to achieve this objective, primary and secondary data were used. The secondary datainclude books, journals, periodicals, unpublished research materials and the internet and the primary data includeinterview and a well structured questionnaire administered to 260 respondents in the 50 public hospitalssampled from the population. The data collected from the questionnaire were analyzed using relevant econometrictests. The results suggest a relationship between the factors influencing the cost system development in public hospitals in Vietnam.*

Keywords: *Cost system, public hospital, Vietnam*

1. INTRODUCTION

The health sector is one of the most important parts of the service sector due to its impact on the protection as well as promotion of human life. Hospital organizations have been facing difficulties and challenges in balancing limited resources and costs to provide their demand for services. Historically, hospitals have worked for decades under unconcerned managers regarding services costs management. Moreover, up to current days, attempts for measurements and control have not been well accepted.One of the main challenges of hospital managers is development of cost information for decision-making and proper pricing of services. Hospital managers must provide health-care services needed by the community at an acceptable level of quality and at the least possible cost; therefore, they need information on the actual cost of the services they provide.

The basic purpose of cost systems is to determine the cost of aproduct or service by assigning manufacturing costs to products or servicesthat company produces or provides. cost system consist of differentaccounting methods used in order to define the cost per unit. Accountingmethods used in cost system enable the evaluation of products as a resultfrom the manufacturing or providing process. It is important to point out that differentcost systems differently affect the product or service evaluation. The choice ofcost system was based on the type of the production process. Today, traditional cost systems which are no longer suitable touse in modern operating conditions. Business conditions are changing rapidlybecoming

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more and more complex. The most important direct cost element inmodern cost structure becomes indirect costs(overheads). This change in cost structurefound traditional cost systems inappropriate for product or service evaluation.In order to avoid the inaccuracy of traditional cost systems in product or service evaluation, the new cost systems such as based on activities, time- driven activities, performance- focused activities and ratioofcosttocharges have been developed.

Modern costing methodsare very popular in many developed countries and more familiar with many developing counties such as China, Thailand, Malaysia, etc. However, it is still a new method in Vietnam. There were very few research related to these issued in Vietnam.

In this study, we examined factors influencing the by using a survey data. The factors we examined include cost variability, cost important, perceived complexity, organizational support, system state, satisfaction legal system, use legal system. We tested our model and hypotheses by using a sample of 260 respondents in the 50 public hospitalsin Vietnam.

The remainder of the paper is organized as follows. First, we discussed the theoretical background of our study focusing on cost accounting methods, field study and offer our research hypotheses. Second, we described the research method approach. Third, we present our results that test our predictions. Finally, we offer a discussion of the research results before concluding.

2. LITERATURE REVIEW

2.1. Cost Accounting Methods

Cost accounting is the process of estimating and classifying costs incurred by an organization. These costs can be analyzed at the organizational or departmental level, but Gapenski and Reiter have noted that "the holy grail of cost estimation is costing at the service or individual patient level" (2016). It seems Gapenski acknowledged the increasingly important role cost accounting is likely to play in the health-care market. The most recent updates of his widely-used textbooks on health care finance and accounting included much-expanded coverage of techniques for estimating costs at the product or service level.

As different industries have evolved over time so have cost accounting methods and the management accounting research analyzing these methods (Kaplan and Porter, 2011). Different approaches to managerial and cost accounting have emphasized different components of the methodologies such as, accurate cost capture or the ability to capture financial and non- financial performance measures (Ittner, Larcker and Meyer, 2003). There is a wide spectrum of costing methodologies (e.g. value-based management, benchmarking, life cycle costing, and target costing) that can help inform managers. The literature has identified various cost management accounting techniques, such as, activity-based costing (ABC), activity-based management (ABM), time-driven ABC, target costing, balanced scorecards (BSC) and ratio of cost-to-charges (RCC) (Kaplan and Anderson, 2007). This paper will focus on five specific cost accounting techniques seen primarily in the health-care environment: traditional costing, activity based costing, time-driven activity based costing, performance-focused activity based costing.

Traditional Costing is a cost accounting methodology that allocates organizational overhead to a specific output based on a predetermined cost driver or by using a pre-determined percentage rate (Paulus, van Raak and Keijzer, 2002). The traditional costing technique is easy to understand and apply. It requires minimal financial and/or managerial investment which helps explain its wide use and acceptance. However, these costing methods have been criticized for failing to account for differences in product/service lines and marketing channels and for producing inaccurate and unrealistic representations of a product or service's true cost.

Activity-Based Costing is a costing approach developed by Kaplan in the mid-1980s. Activity-based costing (ABC) has been the subject of numerous articles and books (Cooper and Kaplan, 1991; Gapenski and Reiter, 2016; Kaplan and Cooper, 1998). This approach has been widely adopted in public and private, service and managerial organizations. Activity based costing is widely used in the preparation of budgets as it serves as a planning mechanism that shows the relationship between goal achievement and resource intensity. Activity based costing takes a rational approach to product and service costing, since it begins with an effort to identify the fundamental activities and resources involved in producing an output. The indirect expenses are then allocated to the activities using cost drivers that are carefully selected to reflect the use of each particular resource pool. This methodology has been found to produce accurate and rational financial management information, and to provide information that helps managers make accurate product mix decisions, product price calculations, and consumer profitability analyses (Horngren, et al., 2010).

The basis for ABC is a belief that all activities exist to support the production and delivery of goods and services and that all indirect costs can be traced and allocated to individual products and services (Velmurugan, 2010). Activity based costing provides managers a more accurate view of the 'true' cost of their products and services. The accuracy of the ABC can lead to different evaluations of costs and profitability as compared to other simpler costing approaches . Activity based costing is designed to provide more accurate information about product costs so that management can focus its attention on value-added activities (Velmurugan, 2010). Activity based costing has been found to generate information that is superior to traditional systems (McGowan, 1998). The use of ABC systems has been found to help organizations make better product mix decisions, product price calculations, and consumer profitability analyses . The use of ABC is also associated with improved firm performance and increased manager and employee satisfaction.

Time-Driven Activity Based Costing (TDABC) is a managerial accounting approach introduced in 2004 by Kaplan and Anderson. Time-driven activity based costing is an attempt to overcome some of the weaknesses associated with ABC. TDABC differs from traditional ABC, in that time is used as the primary cost driver. The assumption underlying the TDABC method is that most resources (i.e. manpower, equipment, and facilities) have capacities that can be measured in terms of time (Namazi, 2009). TDABC does not require the identification of 'activities' that the ABC method does. With TDABC no individual activities are needed because the default cost driver is time. TDABC reduces the influence of personal preferences on cost estimation by eliminating managerial discretion in cost driver selection.

Time-driven activity based costing is simpler to implement than ABC and it integrates well with available data from electronic resource planning systems. Time-driven ABC also enables fast and inexpensive cost model maintenance (Kaplan and Anderson, 2004, 2007). However, the features that make TDABC easier to implement can reduce its usefulness relative to ABC. Under the TDABC system, the activities associated with the indirect expenses are not identified. Time-driven ABC uses a single activity measure and this single cost-time relationship may not represent the actual cause-effect behavior of the costs (Namazi, 2009). The identification of specific drivers can potentially help identify inefficient processes which is one of the most valued components of ABC. Using time as a measure for practical resources may be relevant for some small service firms but not suitable for other more complex enterprises with different department outputs since indirect costs cannot be tied back to the employees' work time (Namazi, 2009). This may hold especially true in a health-care organization where different activities may require a wide range of skill sets.

Performance-Focused Activity Based Costing (PFABC) is a third iteration of ABC. PFABC is a hybrid ABC method that attempts to overcome some of the weaknesses associated with TDABC and ABC. PFABC attempts to extend the value of this managerial cost system as a means to examine organizational performance. PFABC is an intensive costing process that requires several steps to properly allocate indirect expenses. PFABC is similar to ABC in that it requires the identification of major cost activities but dissimilar to TDABC in the ways that activities' resource use is determined. With PFABC, the actual resources for each activity can be assessed in a variety of ways, including interviews, surveys, or based on actual utilization of time, materials or other resources (Namazi, 2009). This is a difference between PFABC and conventional ABC, where the cost driver is determined via specific activities or TDABC where the cost driver is time.

The other significant difference between PFABC and other costing approaches is that PFABC calculates the cost drivers' standard rate (quantity) and price variances. This helps managers evaluate the true drivers of cost by separating the analysis of volume and price variances. The extra processes in the PFABC approach make PFABC more difficult to establish but enable PFABC to offer a richer and more detailed examination of the organization's activities.

PFABC does hold several advantages over the traditional ABC and TDABC (Namazi, 2009). PFABC focuses more on the implementation stage by identifying each important activity explicitly and directly mapping the resource costs to the activities. PFABC's focus on budget variances also helps managers to identify excess capacity. PFABC offers managers more information than other accounting methods. It is a powerful planning and performance evaluation tool, as it can identify variances, such as rate, efficiency, and volume variances. It is the one costing mechanism that is used to examine the efficiency and effectiveness of an organization.

2.2. Field Study: The Public Hospitals in Vietnam

Over the past decades, the health care activities in Vietnam have been strongly promoted to meet increasing demand of the people. Therefore, the systematic development of hospitals and medical centers has also been encouraged. Recently, the health care system has come to be mixed between public and non-public health care providers. The public ones are still playing dominant roles, especially in prevention, research, and training. There are three levels of hospitals and medical centers: central level, provincial level, and district level.

Although many public hospitals have successfully transferred from fully state-subsidized mechanism into self-independent financial model, there remain difficulties for both hospitals and patients after the change. These problems include hospitals facing higher costs for upgrading technology and equipment while patients spending more on doctor care, which were previously supported by the state budget. The model, while encouraging doctors to improve both their attitude and services, means that the hospitals will have to be responsible for their own loans and monthly interest payment as well as the quality of medical workers. Another issue that could worsen over time is the overlapping in the preventive health-care system and the overload at central-level hospitals. Thanks to financial autonomy, more hospitals have invested boldly in high-technology applications, which will take away patients from local-level hospitals and clinics and gradually create a difference within the two-tier health-care system.

Economic growth and demographic changes are driving demand for health-care services throughout Vietnam, and not just in the two economic centers of Hanoi and Ho Chi Minh City. Public, provincial-level hospitals funded by the governments are undergoing upgrades of their facilities and opening new

departments for specialty treatment. Such developments are creating new opportunities for medical devices in Vietnam. The country represents a potentially large health-care and medical equipment market. According to Business Monitor International (BMI), Vietnam's health-care expenditure was estimated at $16.1 billion in 2017, which represented 7.5 percent of the country's GDP. BMI forecasts that health-care spending will grow to $22.7 billion in 2021, recording a compound annual growth rate (CAGR) of approximately 12.5% from 2017 to 2021.In particular, Vietnam's public health-care expenditure is predicted to increase at a CAGR 9.5% in the period of 2016–2021 compared with 17.2% in the period of 2011-2016. This is partly due to the government's effort in promoting partnerships between public and private health-care providers to share the cost. Private health-care expenditure is expected to grow at a CAGR of 7.5%, with a large part of the growth due to increased insurance coverage for employees.

The Vietnam health-care sector is currently facing the following challenges:

◆ Most hospitals are outdated and face chronic overcrowding. Hospitals in major cities like Ho Chi Minh and Hanoi often do not have the capacity to serve both local and provincial patients.

◆ Much of the existing medical equipment in public hospitals in Vietnam is obsolete and needs replacement. Many hospitals lack sufficient equipment for surgery and intensive care units.

◆ Vietnamese public hospitals rely largely on a State budget to upgrade their facilities, equipment, and services. The total budget for the health sector has increased, but is still too low to meet the demands.

◆ A shortage of qualified medical staff is common in many hospitals. Doctors and nurses work under stressful conditions and wages are relatively low.

◆ As high-quality health-care service is not available in country, Ministry of Health (MOH) estimates that around 40,000 Vietnamese people spend approximately $2 billion to travel abroad for high quality medical service every year.

2.3. Hypothesis development

Drawing from Cardinaels et al's (2003) summary and previous research in the area, we examine the importance variables in explaining the decision for public hospitals usage the cost system development. Specifically, we examine: cost variability, cost importance, system state, perceived complexity, organizational support, satisfaction legal system, use legal system.

Cost variability:

Cost variance is the difference between a cost's actual amount and its budgeted or planned amount. Firms with a higher level of indirect overhead and greater heterogeneity in the way products make use of the firm's resources, are expected to introduce more refined cost systems (Bjornenak, 1997; Krumwiede, 1998; Gupta and King, 1997). This issue may also play a role in a hospital context. Hospitals are often known as settings with many indirect cost categories. They further treat various patients via divergent care processes that often consume overhead differently.

Thus, it can be hypothesised that:

Hypothesis 1 (H1):Cost variability has a positive impact on the extent of cost system development.

Cost importance:

The cost information system plays an important role in every organization within the decision-making process. An important task of management is to ensure the control over operations, processes, activity sectors, and not ultimately on costs.This issue mainly captures the way firms in other industries perceive

cost data as crucial for their decisions and their competitive position (Estrin et al,. 1998). Given the current pressure on margins, this issue may especially apply to hospitals. We predict that the stronger the importance attached to cost data, the more likely that a hospital will adapt its cost system.

Thus, it can be hypothesised that:

Hypothesis 2 (H2): Cost importance has a positive impact on the extent of cost system development.

System state:

The system state is a combination of critical system components. This issue concerns the general elaboration of the IT-system within a firm. The more elaborated and integrated the system and the more performance measures it gathers, the easier it is to introduce cost systems that make use of IT-systems and their information (Cooper, 1988). However, given that systems in the health care sector are often designed to only fulfil legal requirements (Jackson, 2001), the culture and the resources within a hospital may not yet be established to integrate different system applications and various types of performance information. Thus, it can be hypothesised that:

Hypothesis 3 (H3):System state has a positive impact on the extent of cost system development.

Perceived complexity:

Perceived complexity is the degree to which an innovation is difficult to understand and use. This issue in fact captures whether the firm's operational environment is perceived as complex. Arguments in other industries seem to suggest that complex-dynamic organizations may especially benefit more from accurate cost systems (Cooper, 1988; Anderson, 1995). This seems true for complex organizations such as hospitals that often treat highly complex care processes. A possible counter argument is that this perceived complexity may obstruct cost system improvement; the cost system problem requires very specific data from these complex processes, which may be too difficult to obtain in hospital settings.

Thus, it can be hypothesised that:

Hypothesis 4 (H4): Perceived complexity has a positive impact on the extent of cost system development.

Organizational support:

Organizational support is the degree to which employees believe that their organization values their contributions and cares about their well-being and fulfills socioemotional needs. This aspect captures the organizational support towards cost system use. While cost innovations in other industries flow from top management support (Shields, 1995), hospitals are further unique in a sense that they have to work with physicians that are implicitly contracted without being employed for the hospital (Eldenberg, 1994; Elckloo et al,. 2004). As physicians are responsible for a large part of the health care expenditures, their support towards cost control in general may be important for further cost system enhancement. Besides management and physicians, the support of the heads of various nursing departments is an additional factor that should not be overlooked. In sum, hospitals may be further evolved on the spectrum of cost system design when different organizational members support cost control.

Thus, it can be hypothesised that:

Hypothesis 5 (H5): Organizational support has a positive impact on the extent of cost system development.

Satisfaction legal system:

As already mentioned, hospitals are legally required to use a predefined cost allocation scheme. This unique setting allows us to test to which extent hospitals are satisfied with this system. Due to the level of detail, satisfaction may be high, such that hospitals may not screen other options of cost system design (Innes

and Mitchell, 1999). Conversely, criticisms within a hospital suggesting that the legal system would still produce unreliable cost estimates may however initiate cost system change (Kerschner and Loper, 1987).

Thus, it can be hypothesised that:

Hypothesis 6 (H6): Satisfaction legal system has a negative impact on the extent of cost system development.

Use legal system:

This factor can be perceived as slightly different from the previous one. While being unsatisfied about the legal system, hospitals may still consider the system sufficient and consequently use it for their decisions. However, if management starts to question the decision usefulness of these figures (Jackson, 2001), hospitals may be more likely to change towards refined costing such as ABC.

Thus, it can be hypothesised that:

Hypothesis 7 (H7): Use legal system has a negative impact on the extent of cost system development.

3. RESEARCH METHODOLOGY

3.1. Data collection

Researchersusually employ either a qualitative approach or a quantitative approach. The qualitativeapproach is used to explore factors that are related to the research questions, whilethe quantitative approach is used to test relationships between these factors. This study is an explanatory study which wasbased on theory testing. To test the hypotheses in this study, a large amount ofcross-sectional data is needed. Therefore, the quantitative approach is moreappropriate for this study than the qualitative approach.

Data was collected using five main different sources for triangulation: publicdocumentation, interviews, site visits,survey questionnaire survey and assisted access to the organization'sinformation systems. First we analyzed public documentation related to cost systems in health-care sector (annualreports, governmental studies, internet literature) which provided importantbackground information. Second, the visits to the organization provided the main data for theanalysis, in particular interviews. The in-depth nature of semi-structured interviews could possibly discover otherpractical issues not commonly discussed in research articles or textbooks. The semi-structured interviews wereconducted with individual staff members; therefore the unit of analysis for this study isindividual staff members.The targeted population selected for the semi-structured interviewcomprised 17 staff members who are senior and middlemanagers and accountants (cost system users) in public hospitals. Furthermore, these interviewees had different rolesin cost system development: as part of the project team, as users, or as external observers.Each interview was based on a previously defined check list. Fourth, site visits added furthersources of data for the study: the direct observation of plants, laboratories, deliveringand stocking areas and access to internal programs and archives. This access wasparticularly important in understanding the difficulties of the cost system exercise and thecomplexity of the processes tackled.For testing the relationship between the variables and the usage of cost system, data for this study were collected using survey questionnaire. The questions in the survey are taken from previous researchers with some slight modifications. We first developed all scales and questions in English and then translated in to Vietnamese. In order to ensure the purpose of accuracy and correct understanding, two Vietnamese experts in English checked the translations. Most of the questions used five point Likert scale which is equivalent to "1 = strongly disagree", "2 = disagree", "3 = neutral", "4 = agree", and "5 = strongly agree". Sample are selected through purposive sampling technique.

3.2. Research Model and Data Processing

Our research model is presented in Figure 1 (see Appendix). The figure shows the relationship between two parts of the model. The first part is concerned with seven variables. The second part is concerned with the extent of cost system development.

We adopted and modified scale from several previous researchers (Table 1 see Appendix).

The data collected for this study were analyzed using a SPSS 20.0 software. The dependent and the independent variables were each assign a code that will aid the interpretation of the output from the SPSS system. In the SPSS software program, coefficientalpha, factor anditem-to-totalcorrelation analysis was used to structure and classify the variables. The different questions were asked pertaining to each of the variables was collapsed into a single variable. Then, logistic regression method was used to analyze the data.

Test of reliability determines if the variables should be included (or omitted) for further analysis. A specified value of cronbach's alpha is used as a cut-off point in making the decision. For this study, cronbach's alpha of 0.7 is applied. Factor analysis was performed on all items that form independent variables of this study. The purpose of this test is to determine the appropriate groupings of these variables for further analysis. For the purpose of this study, the cut-off point for significant loading is >.400. This is in line with Hair et al. (1998) who considered items that display factor loading of .400 and above as important.

Finally the logistic regression analysis is used to test the hypothesis. Logistic regression is suitable when the variable under study is categorical.

4. RESEARCH FINDINGS

4.1. Reliabilityanalysis

The value is defined as Cronbach's coefficient alpha that is between 0 and 1 in most cases. 0 indicates no internal consistency and reliability, while 1 indicates strong internal consistency and reliability (Bryman and Bell, 2007). A result of less than .400, indicates that the item measures something different from the scale as a whole. From the Cronbach's coefficient alpha result, all values exceed .400, showing efficient internal reliability for all measurement items in our survey. The main alpha values of independent variables ($X2$, $X3$, $X4$, $X5$, $X6$, $X7$) are all over .700, proving very good internal consistency and reliability for the scales in our survey.The Corrected Item-total Correlation for all items were over .400, indicating acceptable level of reliability.The result of the reliability test is summarized in Table 2.

4.2. Factor analysis

In factor analysis, all items measuring same construct loaded on a single factor with high factor loading ranging from .600 to .900 which establishes convergent validity or convergence of all items to their respective theoretical defined constructs (Hair et al., 2014). Similarly, not a single case is there where cross factor loading is greater than .500 and all items loaded on their respective factors and it indicates the existence of discriminant validity.

In this study, two factors analyses were conducted using the principal extraction method and varimax rotation of 19 items of the independent variables group. The Kaiser-Meyer-Olkin measure of sampling adequacy was .691. This value was significant. Similarly, Bartlett's test of Sphericity was significant ($p<.000$), indicating sufficient correlation between the variables. Hence, KMO and Bartlett's test proved the suitability of current data for factor analyses. The high values of item-to-total correlation are also supporting the convergence validity and internal consistency of constructs. The factors analysis results are summarized in Table 2 (see Appendix).

4.3. Factors influencing thecost system development and hypotheses testing

In order to examine the relationship between the cost system development and all independent factors, correlation and regression analyses are used. The Table 3 (see Appendix), illustrates that cost system development is significantly correlated and has positive relationship with X1 ($r = .401$, $p < .01$), X2($r = .459$, $p < .01$), X3 ($r = .380$, $p < .01$), X4 ($r=.362$), X5 ($r=.716$, $p <.01$). The relationship cost system development is significant and has negative relationship with X6 ($r = -.510$, $p < .01$) and X7 ($r=.-523$, $p <.01$).The finding suggests that all independent variables havesignificant influence on cost system development among public hospitals in Vietnam. The value in parentheses denotes the significant value of each variable. Therefore all hypotheses are supported.

Multicollinearity can cause unstable estimates and inaccurate variances which affects confidence intervals and hypothesis tests. X2, X3 are highly correlated with X1, X4, X5, X6 and X7. So that, they were decided to exclude them from the analysis before running logistic regression.

Logit (also called logistic regression) estimates models in which the dependent variable isa dichotomous dummy variable – the variable can take only two values, 1 and 0. These models aretypically used to predict whether or not some event will occur. This method uses an estimation technique called Maximum LikelihoodEstimation (MLE), an advanced algorithm that calculates the coefficients that would maximize thelikelihood of viewing the data distributions as seen in the data set. It is also not subject to the samedegree to the classical assumptions that must be met for a reliable linear regression.The logistic regression estimates help to determine the intensity of influencing each factors may offer. The adjusted R^2- Nagelkerke indicates that the regression model explains 84.6% of the variance in cost system development (see Table 4 in Appendix).

From the Classification Table shown in Table 5(see Appendix) below, it can be said that, the model predicted the value 0-Use cost system according to state regulations, but the actual value (observed value) was 1-Use cost system according to state regulations with modified. It also shows that if the model were to predict the Y-values as 0 or 1, the model would be correct 92.7% times. This is a high percentage compared to the naïve model of 50%.

4.4. Factors Influencing cost system development

In order to determine which variable has significant impact on cost system development, Table 6 (see Appendix)on Variables in the Equation is referred. From the analysis, it can be seen that fivevariables are statistically significant (at $p< 0.05$ and $p< 0.1$) in the relationship between the proposed variables and the cost system development. From Table 6, it can be said that if p value is below 0.1, the variable is significant at the 90% level. In this study, all five variables X1, X4, X5, X6, X7 are significant.

Table 6 indicated the degree of relationship of predictors have with cost system development. The factor that had the strongest effect on cost system development was cost variability ($\beta= 7.886$, $p= .000$), these values support the hypothesis 1 (H3) that cost variability has a positive impact on the extent of cost system development. This positive effects of X1 dimensions are consistent with Krumwiede (1998); Gupta, King (1997); Eddy et al., empirical findings indicate that increasing levels of cost variability lead to a greater need for cost system development.

System state had the second strongest effect ($\beta = 2.581$, $p=.002$), these values support the hypothesis 5 (H5) that system state has a positive impact on the extent of cost system development. This result is also consistent with the empirical work by M.Shields (1995); Eddy et al., (2003).

Organizational support ranked third (β = 1.829, p= .005), these values support the hypothesis 4 (H4) that organizational support has a positive impact on the extent of cost system development. It was argued in the literature that the development of cost system is relatively high in support from organizations. In this vein, Shields (1995); Eddy et al., (2003) argued that the choice of cost system is dependent on organizational support.

The factors that had the negative effect were X6 (β =-.3.099, p= .005), X7 (β =-3.005, p= .001) these values support the hypothesis 6 (H6) that satisfaction legal system has a negative impact on the extent of cost system development and the hypothesis 7 (H7) that usage legal system has a negative impact on the extent of cost system development. *The satisfaction legal system, usage legal system concepts and implications are consistent with the decreasing use cost system development(Innes and Mitchell, 1995; Eddy et al., 2003). Thus, it can be expected that hospitals that pursue legal system are not likely to develop thecost system.*

$$\text{Log}_e[\frac{P(Y=1)}{P(Y=0)}]=36.577+ 7.886*X1+1.829*X4 + 2.581*X5 -3.099 X6 -3.005*X7$$

Where: Y (Y=1) = Use cost system according to state regulations with modified.

X1= Cost variability,

X4= Organizational support,

X5= System state,

X6= Satisfaction legal system,

X7= Use legal system

5. CONCLUSION

The aim of this case study was to identify factors and explore the process influencing the implementation of cost system in Vietnam public hospitals. We have identified a number of factors which have influenced the implementationof cost system: cost variability, perceived complexity, organizational support, satisfaction legal system, use legal system.

The margin of error embedded in the traditional cost system was no longer tolerable in today's business environment. It is no longer sufficient for organizations to only provide service of high quality but organizations are also required to offer competitive pricing in order to survive in the marketplace. The stiff competition in this borderless world has forced many health-care organizations to press for more accurate information as basis for decisions. The traditional cost accounting system that relied heavily on averaging of overhead cost across various products could no longer satisfy this need. Thus it is hoped that the pressure to compete be viewed positively by the market players. Public hospitals should strive to improve their competitiveness and one of the aspects is to improve their costing techniques to reflect thisdevelopment

The modern cost system long been seen as a tool to provide the management with a more accurate service costing. However, it should be noted that modern cost system provided the organizations with a whole spectrum of usefulness in decision making. The information generated from cost system can be used for planning, pricing, budgeting, and performance measurement. On the other hand, the decision to adopt new cost system required the public hospitals to invest financially by providing training, and software and hardware for the system. It also required investment in terms of man-hour and commitment from all levels. Therefore organizations need to weigh the appropriateness of the system to the cost involved in adopting and implementingit.All the findings of this study describe the experiences of the participants regarding cost system development.

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THE APPENDIX

Figure 1: Research Model
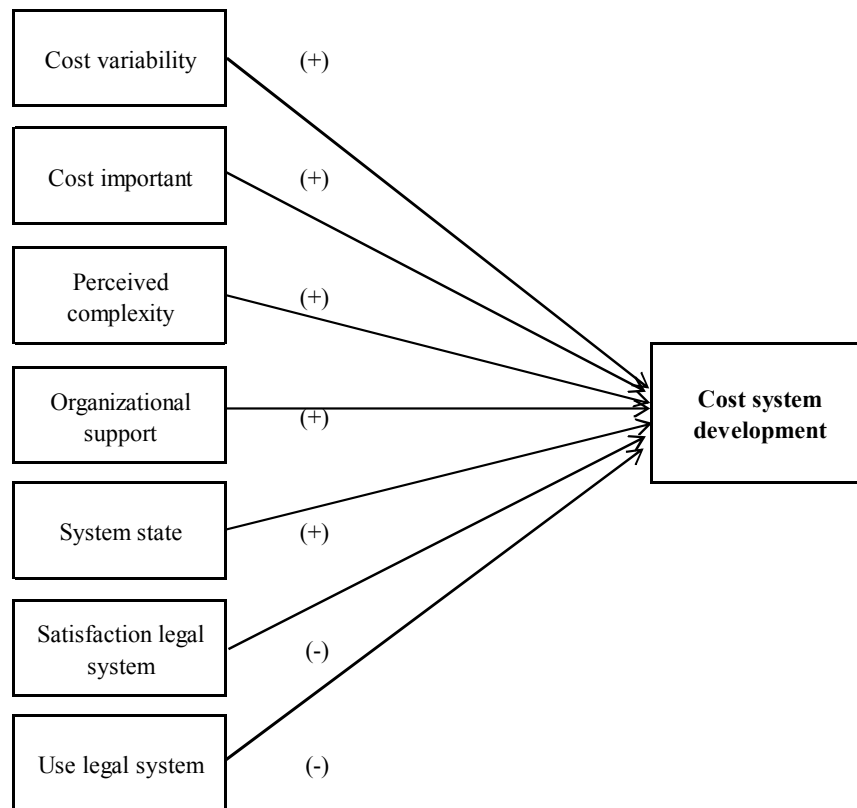
Table 1. The constructs of the adapted research model with relevant studies

Construct Factors/Items	Coding
Independent variables	
Cost variability	**X1**
Certain care processes (DRG's), patients require more costs than others	d1
The indirect costs constitute a larger part of total costs	d2
Cost importance	**X2**
Cost information is important for staying competitive as a hospital	d3

Accurate cost data is crucial for our hospital	d4
System state	**x3**
Cost systems are linked to a spectrum of different performance measures	d5
The various IT systems (electronic patient files, inventory) are strongly integrated	d6
It is difficult to use our systems for defining standard activities at the patient level	d7
Perceived complexity	**X4**
Care process in our hospital are highly complex	d8
For our specific hospital it is complex to allocate cost in an accurate manner	d9
Organizational support	**X5**
The board of directors strongly supports cost allocation (top management)	d10
The medical board strongly supports cost system use (physician)	d11
The physicians strongly favor the use of cost systems (physician)	d12
Heads of various nursing departments support cost control (nursing)	d13
Satisfaction legal system	**X6**
We are satisfied with the legal cost system	d14
Cost drivers of the legal system allocate cost in a logical manner	d15
Cost calculated under the legal system quite accurately reflect the true cost	d16
Use legal system	**X7**
The legal system is easy to use	d17
The legal system is not optimal but it satisfies our decision needs	d18
The legal system is often used in our decisions	d19
Dependent variable	**Y**
Use cost system according to state regulations	0
Use cost system according to state regulations with modified	1

Table 2. The result of the reliability test and factor analysis

Construct Factors	Items	Cronbach's alpha	Corrected Item-total Correlation	**Factor loading**
X1	d1	.620	.499	.796
	d2		.499	.875
X2	d3	.821	.697	.906
	d4		.697	.901
X3	d5	.768	.617	.823
	d6		.688	.868
	d7		.575	.796
X4	d8	.857	.758	.912
	d9		.758	.918
X5	d10	.878	.578	.731
	d11		.836	.904
	d12		.769	.850
	d13		.778	.857
X6	d14	.757	.616	.810
	d15		.621	.826
	d16		.554	.734
X7	d17	.890	.719	.839
	d18		.837	.935
	d19		.851	.931

Table 3. Correlation Matrix

	Variables	N	1	2	3	4	5	6	7	8
1	X1	260	1							
2	X2	260	.006	1						
3	X3	260	.102	.507**	1					
4	X4	260	.119	.629**	.653**	1				
5	X5	260	-.211**	.489**	.403**	.304**	1			
6	X6	260	.002	.605**	.818**	.521**	.577**	1		
7	X7	260	-.019	-.397**	-.356**	-.336**	-.622**	.452**	1	
6	Y	260	.401**	.459**	.380**	.362**	.716**	-.510**	.523**	1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 4. Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	90.665[b]	.619	.846

Table 5. Classification

		Predicted		
		Adopt		Percentage Correct
Observed		0.00	1.00	
Adopt 0.00		80	15	84.2
1.00		4	161	97.6
Overall percentage				92.7

* The cut value is .050.

Table 6.Variables in the Equation

		B	S.E	Wald	df	Sig.	Exp (B)
Step 1[e]	X1	7.886	1.868	17.814	1	.000	.000
	X4	1.829	.684	7.145	1	.005	6.228
	X5	2.581	.838	9.488	1	.002	13.209
	X6	-3.099	1.097	7.976	1	.005	.045
	X7	-3.005	.892	11.341	1	.001	.050
	Contants	36.577	9.849	13.792	1	.000	.000

a. Variable(s) entered on step 1: X1, X4, X5, X6, X7

HOW MANAGERS PERCEIVED INTERNAL CORPORATE SOCIAL RESPONSIBILITY? AN EMPIRICAL STUDY OF INDONESIAN WOMEN EMPLOYMENT

Nadya Fallanda Sutedjo* - Kurnia Perdana**

Abstract: *The aim of this study is to find out the perception among the managers on employment practice and human rights of Indonesian women employee. The research was conducted by using quantitative approach. Data collection was gathered through a questionnaire to perform the Kruskal-Wallis and Mann-Whitney U test that compare the managers' perception. The samples of the research are top, middle and lower level managers in Indonesian companies. We found 3 most important managers' perception concerning human rights, they are needs of particular unit to handle complaint of discrimination, guarantee of rights to associate and give opinion and work force. There are also 3 most important managers' perception on employment practice. They are sexual harrassment, time flexibility for breastfeeding, and counselling facilities and employee risk anticipation. The originality of this study is empirically exploration of the multilevel managers' perception of women employment practice and human rights in Indonesia.*

Key words: *perception, human rights, woman employment, multilevel managers, internal CSR.*

INTRODUCTION

The Company in its operations cannot ignore the interaction with the stakeholders. The stakeholders' role is urgent since they might affect the company's operations including the success of the CSR policy. Various motivations behind CSR performance are to earn profit and economic value of the company, firm political legitimacy, the fulfilment of social demand and the fulfilment of the demand of business ethics values (Garriga and Mele, 2004).

Implementations of business ethics based on the relationship with the stakeholders has unique and specific interaction with one or two ways exchange. These are the fundamental interaction firm with its stakeholders. Shareholders invest in a company and receive the potential return for dividends and capital gains. Creditors lend funds and collect payment of interest. Distributors and retailers engage in the market as they distribute the product or services. Employees contribute their competency and knowledge in exchange for salary, benefits and the opportunity for individual satisfaction and professional carrier development.

Business will not operate without employees who run the corporate function. Due to the importance for both legal and ethical responsibility, firm's interaction with the employee should be managed properly and carefully. On the other hand, employees are increasingly questioning the meaning of their work and companies that fail to realize it will face the problems in attracting, retaining and engaging the best employees (Bhattacharya et al., 2008). Employers have obligation to provide safe and healthy work facilities, equal opportunity among the employees. As the employees who are exposed to internal CSR are more engaged than those exposed only to external CSR practices (Ferreira and de Oliveira, 2013).

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Furthermore there is an interesting uncontested evidence that stronger CSR performance would generate firm's positive reputation and is associated with stronger financial performance results showed by strong relationship between employee engagement and stock price, income growth, and overall financial performance (Edmans, 2011). There are some good reasons for companies to be more fully engage with their employees, could be begin with proper decency to competitive advantages in recruiting, career development, productivity and retention to more effective human resource management (Marvis, 2012).

On the other hand Mueller et al (2012) showed that perceived of CSR was positively related to employees' affective commitment. Alam (1999) has undertaken a research in New Zealand about perceptions of business ethics of middle and lower managers. Moreover Menz (2011) reviewed the disconnected research on various functional top management team members; to identify the variables of interest, the dominant relationships, and the contributions; and to organize the existing knowledge into a framework.

Feminist perspective nowadays is one among the top of research issues (Jia and Zhang, 2013; Grosser, 2015; Alonso-Almeida et al, 2015). Companies' perceptions of CSR have been partially analysed based on top managers and mostly offer comparison between men and women (Alonso-Almeida, 2015). Grosser & Moon (2005) demonstrated that information disclosed in companies' CSR reporting which use the integration of human capital management reporting, CSR reporting guidelines and socially responsible investment indicators concerning with gender mainstreaming was very limited. That limitation showed that internal CSR performance related to women employment is very low. Very few companies disclosed information about difference of salary between men to women (Cahaya et al, 2012)

Based on our best knowledge there have been no research focused on managers' perception of the women employment practice and their human rights. Hence, we strongly interested to investigate the perception of multilevel managers concerning the internal CSR of Indonesian woman employment.

CSR IN INDONESIA

In Indonesia, Gunawan (2010) investigated the eight important aspects to the stakeholder regarding the annual report disclosure among 119 listed companies in Indonesia Stock Exchange in the year 2003-2005. The result showed that there was a gap between the important information experienced by the stakeholder and the information disclosed by the companies. The important CSR information isproduct, environment, sustainability, human resources, energy, external relation, community and other information (Gunawan, 2007). In the area of corporate social and environmental disclosure on the official web site, the Indonesian listed companies showed low performance. The most disclosed information is community and followed by human resources. And it could be conclude that practice of Indonesia corporate social and environmental disclosure is still at an early stage. (Djajadikerta and Trireksani, 2012)

On the other hand, CSR in Indonesia is a mandatory based on Indonesian Law No 25 (2007) and Indonesian Law No 40 (2007). Furthermore From 1 August 2012, under the Indonesian Securities Supervisory Agency's (BAPEPAM) regulation, all listed companies are required to disclose any CSR activities in their annual reports. Whether it is voluntary or mandatory the adoption of CSR has created ambiguity concerning the substance and procedures (Waagstein, 2011).

In internal CSR context, Indonesian companies do not clearly communicate labour responsibility issues. Majority of employees in Indonesia perceive that CSR is about donation. As a result, the CSR performance disclosed was more likely to focus on 'donation' or 'community development' information (Djajadikerta et al, 2009). Cahaya et al (2012) argue that companies in Indonesia showed low level of

labour issues in their reporting as Indonesian companies do not take into account that communicating in labour responsibility issues as a key precondition of CSR. Consistent with Gunawan (2010) and Gunawan (2007) that employee issues were disclosed with very limited information in the annual report.

INTERNAL CSR

The corporate decision-making process has to able to foster the participation and self-governance of employees as a part of corporate governance. The approach to industrial relations and labour unions provide a critical atmosphere for a potential governance role for employees as they affect mode, agenda, and effectiveness of various practices of employee participation (Young and Thyil, 2009).

Internal CSR demonstrated by Albdour and Altarawneh (2012) has significant relationships between governance, organizational engagement and job engagement. We could classify internal CSR practice into two dimensions, labour practice i.e. work life balance, training and education, health and safety, at the same time human rights i.e. work diversity and employees' human rights. Women are sensitive in the field of employment. The increasing of work hours would have stronger effects for women employee particularly in urban area (Gond et al, 2011; Pratomo, 2014).

Managers need to comprehend that considering the internal CSR, means company manage their internal stakeholders in a responsible strategy (Luthans, 2005; Lee et al, 2013). The implementation of responsible business practice could support company in creating competitive advantage, positive influence on employee loyalty and employment (Dagiliene, 2010).

MANAGERS' PERCEPTION OF CSR

Deshpande (1997) responded that there may be difference in perception of proper ethical beliefs and conduct based on gender, age and educational background. Older managers, male managers and lower educated managers were perceived more unethical than the reverse. Yet, in the year 2000 approaches, in conjunction with the standardized of education level in managers position and less male dominated, has changed prior research results become more ethical.

Research conducted by Grosser (2015) declared that top managers have limited perception of the scope and scale of CSR practice, defining it loosely with reference to business discretionary behaviour. They conceptualized CSR much more widely such as describing core business operations and operational impacts to companies' stakeholders, widen the profit potential in the market and intersectionof business and human rights. Top managers also perceived that three major interest group as company's stakeholders are the media and the public opinion, clients or consumers and suppliers (Viia and Alas, 2009). Andre (2013) argue that there are five ways to understand CSR concept deeply based on the corporate behaviour concerning of CSR practice are critical conception, ethical or normative, instrumental, supererogative and sustainable.

In addition, Luthan (2005) argued that managers' perceptions are different to the employees' perception and Alam (1999) denoted that middle and lower managers have strong beliefs concerning of business ethic and CSR. Some of them were indicated that emphasis based on religion for corporate ethical environment aspects, social values and ethical audit, commitment of top management, reward for good ethical values were perceived as the important factor of CSR. However, the involvement of the middle and lower managers are quite divergent, depending on the specific corporate social activities (Hutjens, 2015)

Based on the relevant literature authors developed the following general RQ:

RQ1. What are the perception of different level of managers regarding the human rights of women employees?

RQ2. What are the perception of different level of managers regarding the women employment practice?

HYPOTHESES DEVELOPMENT

Previously research describe that top managers with their strong authority have wider CSR paradigm and they prioritized more on external aspect such as implementation of business ethics, greater positive public opinion, increasing number of loyal consumers and manageable supplier rather than internal aspect (Deshpande, 1997; Andre, 2013; Grosser, 2015). Meanwhile middle and lower managers who work at the technical level, viewed CSR as an instrument to improve productivity, increase volume of sales and corporate sustainability. Divergent results were showed by some research on middle and lower managers' perception. Some scholars found religion, social sensitiveness and culture are the considerably aspect of CSR (Djajadikerta et al, 2009; Hutjens, 2015).

According to the arguments, we posit the following null-hypotheses as follow:

H1: There are significant perception differences of woman employees' human rights among multilevel managers.

H2: There are significant perception differences of woman employment practice among multilevel managers

Methodology

This pilot study was conducted in Indonesia during March 2014 – April 2015 on the managers' perception of woman employment practice and human rights of woman employee practice. In order to investigate the difference of internal CSR among the managers, we develop a two parts questionnaire comprising 18 questions, 9 questions are concerning human rights of women employee in the first part. And the second part is concerning practice of woman employment. The survey used a six-point Likert Scale ranging from strongly agree to strongly disagree in obtaining richer numerical pattern in the managers' perception.

Currently women have work experience consistent with men, even though in some sociological theories proven that there is no divergent ethical perception and responses between men and women, except in their experience in similar occupational condition (Luthan, 2005; Weeks, 1998). Some studies in western countries found that women were more ethically sensitive than men. Yet in eastern countries i.e. China and Thailand showed opposite result, those men were proven more ethically sensitive and caring than women (Roxas and Stoneback, 2004). Hence we do not distinguish gender as a consideration in the determination of sample.

The multilevel managers gathered in the study are typically found in eachorganisations.They are top, middle and lower managers. Top level are responsible for controlling and overseeing the entire organizations. They are elected by shareholders to established corporate policies and make management decision. Middle level managers are responsible for executing organizational plans which comply with the company's policy. They are company employees that are accountable for controlling and overseeing a department. Middle managers are at an intermediary between top level management and lower level management. Low level managers focus on controlling and directing. They serve as role models for the employees and also directly supervise day to day activities.

The questionnaire delivered by e-mail and by hand to target respondents by using random sampling method. An early of the questionnaire was discussed with some PhD candidates hence based on the feedback from the respondents, several revision were applied to the wording and contents of some questions. Here, table 1 describe the number of questionnaire were distributed and the number returned for each group.

Table 1. Target groups and response rate

Target Groups	Distributed Questionnaire	Received Questionnaire	Response Rate
Top Managers	200	114	57.0%
Middle Managers	200	175	87.5%
Lower Managers	200	156	78.0%
Total	**600**	**445**	**74.2%**

The non-parametric technics were conducted to testify the perception difference or homogeneity among managers regarding internal CSR. Test was conducted by using Kruskal-Wallis and Mann-Whitney U applied through testing null-hypotheses. The test is conducted for identifying whether the average perception of the investigated variables used in the study is identical for all managerial levels.

The study sample consisted of 445 randomly selected top, middle and lower managers. The mean age for the sample managers was 42 years. The result shows that 189 (42.5%) respondents were female and 256 (57.5%) were male. All respondents hold university degree, the category used were diploma or lower, bachelor or master and doctoral degree or equivalent. 15 respondents (3.3%) hold doctoral degree, 331 (74.3%) hold master degree and 99 (22.4%) hold bachelor degree.

FINDING AND DISCUSSION

First part of the questionnaire sought information about the multilevel managers' perception in women employees' human rights. Kurskal-Wallis test was conducted for each of the multilevel managers to find out whether there were differences between respondent groups.

The tests' results showed statistically significant differences. Dependence was observed at the 5% significance level ($\chi^2 = 8,122$, df = 2, $p = 0.517$). The null-hypothesis that there are significant perception differences was accepted.

The information gathered from Table 2 provided the results relating to the perception multilevel managers after conducting the Mann-Whitney U test. Based on the test's results we found significant different perception between top managers and middle managers (p = 0,508) and consistent result between top managers and low managers (p = 0,081). But we found no different perception between middle managers and low managers (p = 0,032). It is evident as we see at the Table II that the overall pattern of responses to this first part of the questionnaire is consistent with some prior research which identified the human rights in business practice as top management surely bears the biggest commitment and responsibility rather than middle and lower managers regarding the values of human rights particularly for woman employee (Deshpande, 1997; Barclay and Markel, 2009; Mueller et al, 2012).

Three things that are deemed to be the most important things, the existence a particular unit which able to handle complaints discrimination (4,66/5), the second most important theme was about company to guarantee the rights to association and opine(4,55/5) and the third rank is the work force for women employee (4,43/5).

Statistically, it is evident that to prioritize the gender equality is still needs some particular instruments to anticipate discrimination for women employment in Indonesia. Such as exclusive body to handle the gender

discrimination and particular regulation to guarantee the basic rights for women employees. In practice on the level daily workers, reported there are still many additional enforcement of work hours (overtime). Some provincial governments are also considered contributing on limitation of woman employment, for example the enactment of late hours at night. Curfew is considered to limit several professions such as paramedics, plant workers and greengrocer (Suparno, 2008; Kinasih, 2007; Hennig et al, 2012).

Some common women discrimination in Indonesia are the enactment of the appearance attraction as a requirement in the work recruitment process, the lower rate of wages for women worker since the determining of basic wages based on the need of men, and narrower opportunities to get promotions to the higher level.

The second part of the questionnaire present information about the multilevel managers' perception in woman employment practice. Kruskal-Wallis test was applied to each of the multilevel managers to discover differences or homogeneity of respondent groups in terms of woman employment practice.

The Kruskal-Wallis tests' results showed statistically significant differences at the 5% level of significance ($\chi^2 = 9,240$, df = 2, $p = 0.525$). The null-hypothesis that stated there are significant perception differences of woman employment practice was accepted.

Respondents were asked whether they perceived about woman employment practice in Indonesia. As can be seen in Table 3 was the results of the Mann-Whitney U test, statistically describe the perception of multilevel managers. We discover significant different perception between top managers and middle managers (p = 0,273) and the pattern results between top managers and low managers (p = 0,201). Yet we found no different perception between middle managers and low managers (p = 0,041).

Based on Table 3 there are three things that are most important perceived by multilevel managers concerning women employment as follow, sexual harassment (4,48/5), the second rank is flexibility of time for breastfeeding (4,27/5) and as the third rank is company expected provides counseling facilities and labour risk prevention for women employees (4,20/5). The biggest problem is still on the sexual violence against women workers. More than 70% of Indonesian women who worked abroad have experienced sexual violence. This is because due to the imbalance of power relations between employers and workers (Strassler, 2004; Kinasih, 2007; Suparno, 2008).

Physically contact, verbally intimidation until sexual harassment in the work place sometimes were executed as pure crime. The victim should face the incident without worth helpfully assisted by the company. As the company try to avoid the bad of corporate image since the widespread news by the media. As the socially responsible organisation, the firm should provide proper law assistance for the victim and extend the other facility needed until the incident completely done.

Although Government through the Ministry of Manpower of the Republic of Indonesia has regulateby a circular letter number 03/2011 on guidelines for the prevention of sexual harassment, but the implementation has not been able to decrease the number of sexual harassment incident. Government was considered slow in handling problems of women workers especially the ones working abroad as the intensively interstate diplomacy was needed beside the law enforcement. However there is also a lack of effective law instruments which unable to fully protect the victims of sexual violence. (Burke and McKeen, 1995; Peterson, 2003; Chuang, 2006).

Some efforts to change the culture of stigmatization was trying to do by National Commission of Woman and Children together with 37 NGOsin 20 provinces which are members of the network of 16-day campaign against sexual harassment in 2014. The campaign proposed Sexual Violence: Recognize and Handle as the theme. The goal of this movement is the availability of legal guarantees for cases of sexual violence.

The second rank is the importance of the flexibility to provide spare time and spot for breastfeeding or reddened breast milkattheworking hours. Some problems might occur for married working woman is differ than single woman. The working mother with baby is more sensitive and need priority protection. The government's respond on the woman employment has clearly seen by the issued of law that provide the flexibility of woman as an individual such as pregnancy furlough and late night working time.

The government has arranged through the Regulation of the Minister of Health of Indonesia number 15 of 2013 and Law no 13/2003 verse 76, 82, 83. However, the interesting fact that encountered many women employees do not require the provision of a special time and place for breast feeding to the company. They decided to give formula (Lestari, 2012). Because of the women employees' disability to overcome the constraints such as the lack of support from husband or even family, the long distance from home to work place and other physical problems.

Many women workers assume that milk is the substitution of and equal to breast milk. Whereas breast milk is the most suitable and the best meal for baby. The acknowledgement for women employees concerning breastfeeding is needed. Currently many NGOs campaign to the women workers to provide breast milk before they leave for work by pumping and store it in the refrigerator. Otherwise they also campaign to the companies to provide flexible time for pumping the breast milk at the work hours.

The third is availability of training and development for female employees which provided by board of director was still limited, not only in Indonesia but also in the UK, French, Italy and Spain. Further research is still needed to see whether the decision of limitation of training and development for women employees is based on the personal aspect such as minority factor or professionalism (Green, 1993; Heilman and Chen, 2003). Thus it is consistent with the instrumental theory and integrative theory of Garrigaand Mele (2004). Since the directors have responsiveness in facing social issue and process to manage women employment within the organization.

CONCLUSION & FUTURE RESEARCH

Considering the findings and discussion, it could be conclude by we that improvement of employment law enforcement is definitely needed, until the balance and harmony of rights and obligation among woman employment, firms and government occurs. The implication while woman as the victim of discrimination, sexual harassment, physically and verbally intimidated in their work hours and environment, the victim would have equal, right, and proper law protection and enforcement. As in Indonesia law enforcement is one of the government biggest weaknesses beside corruption and nepotism.

Additionally top managers' strong power gives them the discretion to apply "interpretive frames", when deciding which demands and interest to consider in the process of decision making for the employees regulation. Yet the middle and lower managers have indeed been associated with higher social orientation and might exercise the most direct impact through supervision (Grojean, 2004).

Top managers also undoubtedly are capable to decide resource allocation and determine the strategy formulation including human resources policy through which genuine relevance of corporate strategy, while middle and lower managers only serve to implement the policy that has been determined.

The perception managers on internal CSR have fulfilled and meet the objectives that generate long term employee productivity and using the business power in a responsible way and integrate the corporate practice with social demands. This study is consistent with Garriga and Mele (2004) and Andre (2013) concerning instrumental theory and ethical theory.

Patterns of multilevel perception that occurs between human and labour's rights of women are exactly the same. We suggests as the future research to investigate whether universal human rights and human resources management practice as a two dimensional of internal CSR has significant relationship to the contribution for ethical corporate sustainability. It seems more challenging, however, is to develop a new theory. This research also provides useful reference for future researchers on this topic.

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Table 2. Results of multilevel managers perception on women employees human rights.

	1*			2*			3*			4*			5*			6*			7*			8*			9*		
	M1	M2	SD	M1	M2	SD	M1	M2	SD	M1	M2	SD	M1	M2	SD	M1	M2	SD	M1	M2	SD	M1	M2	SD	M1	M2	SD
TM	3.06	3	0.81	3.09	3	0.79	3.73	4	0.68	4.78	5	0.52	5.75	6	0.43	5.85	6	0.51	5.86	6	0.35	4.7	5	0.48	3.96	4	0.57
MM	4,51	5	0.61	4.85	5	0.39	4.80	5	0.41	3.91	4	0.31	4.89	5	0.47	5.27	5	0.47	5.02	5	0.46	4.04	4	0.27	3.71	4	0.51
LM	4.69	5	0.61	4.62	5	0.49	4.69	5	0.47	3.82	4	0.41	4.58	5	0.53	4.87	5	0.34	4.81	5	0.39	4.52	5	0.52	4.13	5	0.57
Tot	4.09		0.67	4.19		0.56	4.41		0.52	4.17		0.42	5.07		0.43	5.33		0.44	5.23		0.40	4.42		0.42	3.94		0.45
Rank	8			6			5			7			3			1			2			4			9		

TM: Top Managers, MM: Middle Managers, LM: Lower Managers

1*. Women employees discrimination,

2*. Labour union seriously concern in women discrimination,

3*. Women employment dialog,

4*. Particular regulation to guarantee the basic rights for women employees,

5*. Forced employment,

6*. Exclusive unit to handle the gender discrimination,

7*. Guarantee of rights to associate and give opinion,

8*. Equal sanction,

9*. To identify particular spots potentially risky for the women employees,

Table 3. Results of multilevel managers perception on women employment practice.

	1**			2**			3**			4**			5**			6**			7**			8**			9**		
	M1	M2	SD	M1	M2	SD	M1	M2	SD	M1	M2	SD	M1	M2	SD	M1	M2	SD	M1	M2	SD	M1	M2	SD	M1	M2	SD
TM	4.21	4	0.69	4.11	5	0.67	4.28	5	0.72	4.22	4	0.67	3.98	3	0.57	4.53	4	0.72	3.88	3	0.55	4.07	4	0.64	3.99	5	0.66
MM	3.97	5	0.66	4.09	5	0.64	3.87	4	0.79	4.35	4	0.66	4.57	5	0.65	4.54	3	0.71	4.31	4	0.56	4.29	5	0.59	3.86	4	0.78
LM	4.35	5	0.58	4.22	5	0.69	4.45	4	0.76	3.65	4	0.71	4.26	5	0.69	4.36	5	0.63	4.28	3	0.65	4.26	5	0.61	4.24	4	0.75
Tot	4.18		0.64	4.14		0.67	4.20		0.76	4.07		0.68	4.27		0.64	4.48		0.69	4.16		0.59	4.21		0.61	4.03		0.73
Rank	5			7			4			8			2			1			6			3			9		

TM: Top Managers. MM: Middle Managers, LM: Lower Managers

1**. Training and education for development program,

2**. Representative ratio in the certain position,

3**. Special health facilities for women employees,

4**. Carrier development program,

5**. Flexible time for breastfeeding,

6**. Sexual harassment,

7**. Extra allowance for women employees,

8**. Counselling facilities and employee risk anticipation,

9**. Daycare for working mother.

FINANCIAL DISCLOSURE AND COST OF EQUITY CAPITAL

Truong Hoang Diep Huong*

ABSTRACT: *Financial disclosure plays a very important role for organizations and individuals when participating in the stock market. For commercial banks, adequate and timely disclosure of financial information will increase transparency and affect not only the behaviour of investors in the market but also the customer's decision to deposit and using bank's services. Disclosure of information is not only an obligation to comply, but also the interest of the bank in enhancing its reputation and image in the market. It is the most effective channel to convince investors, showing professionalism and respect for shareholders, which help banks reduce the cost of equity. However, the reality is that many commercial banks do not pay due attention and show full responsibility to investors in the disclosure of information. This study shows the role of information disclosure in reducing the cost of equity through a review of theory, empirical evidence from previous research. Through which, this study suggests policy recommendations for managers of commercial banks, supervisors and investors.*

Keywords: financial disclosure, cost of equity, commercial banks

1. Introduction

The relationship between information disclosure and cost of equity have attracted the interest of many scholars around the world, such as the studies by Armitage and Marston (2008), Botasan (2006), Zhang and Ding (2006), Handa and Linn (1993), Jeffrey and Rusticus (2012) and Easley and O'Hara (2004).) ...

Based on both qualitative and quantitative methods, studies have shown the opposite effect of information disclosure on the cost of equity across multiple channels. For example, a study by Bary and Brown (1985), Handa and Linn (1993) argues that high enterprise disclosure will help investors reduce their estimation risk, which inturn reduce the cost of capital. Diamond et al. (1991) and King et al (1990) found that information disclosure helps reduce information asymmetry, thereby reducing transaction costs (expressed through bid-ask spread) which investors must pay more to traders to capture that information, leading to lower cost of capital. On the other hand, the study by Easley and O'Hara (2004) found that information disclosure helped increase demand for shares, thereby increasing liquidity and reducing capital costs. In addition, using data from capital markets in China, the study by Zhang and Ding (2006) also provides scientific evidence to demonstrate the inverse relationship between information disclosure and cost of equity capital. Using interviews with CFOs, Armitage and Marston (2008) also point out that CFOs' common perception is that disclosure of information will help businesses reduce capital costs.

This relationship has been proven in commercial banks through research by Poshakwale and Courtis (2005). Cheynel (2013) also pointed out that those businesses (including banks) with more voluntarily financial disclosure bear a lower cost of equity capital than the less informant one. This relationship has the potential to promote disclosure and reduce information asymmetry between banks and investors.

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Thus, many studies conducted on information disclosure and cost of equity have confirmed the opposite relationship between these two indicators. However, studies also suggest that the level of impact is strong or weak depends on a number of factors, such as the business characteristics (activity feild, magnitude of the enterprise, level of competition ...) and the business environment characteristics (such as market information disclosure, government regulations ...). In addition, the measurement of information disclosure and the cost of equity in high risk business such as the banking sector also require individual attention (Nguyen Thi Phuong Hong, 2016).

As that, the author selected the topic of research: *" the effect of financial disclosure on cost of equity of banks in Vietnam",* with the objective: (1) summarising theoretical basis, (2) measuring Vietnamese commercial banks disclosure level, and (3) testing the effect of financial information disclosure on cost of equity of commercial banks in Vietnam.

2. LITERATURE REVIEW ON DISCLOSURE AND COST OF EQUITY CAPITAL

2.1. Financial disclosure in Banking system

Information disclosure plays an important role for investors, businesses and regulators. For investors, financial disclosure helps reduce information asymmetry in the financial markets, helping them understand business situation and better their investment opportunities. As a result, investors can make sound investment decisions, helping to preserve capital and gain expected returns. In addition, thanks to information disclosure, investors can control the operation of the business, reducing the problem of agency costs. For supervisory authorities, information disclosure helps regulators monitor markets, prevent risk, especially systemic risk in a business sector with a high degree of risk like bank.

For businesses, increased disclosure reduces information asymmetry and makes investors more aware of the value of business development in the long run. Investors in high disclosure firms tend to have long-term investment visibility (Rikanovic, 2005). Managers, under the control of investors, are also more focused on long-term goals. Since then, financial disclosure has the effect of increasing the long-term value of the business.

Information disclosure studies define the concept of information disclosure as the level of information that firm disclosed. Accordingly, disclosure is reflected in the availability and completeness of the unique information that the company provides in the marketplace. This information includes: financial information, governance information, accounting system, updated level of financial statements, information channels, information disclosed separately for some certain statues ... (Bushman, 2007). As can be seen, this is the way a company communicates with the outside, also known as investor relations. It is the intersection between the performance of the company and the financial performance of the market (Rikanovic, 2005).

However, the level of information disclosure is not necessarily linked to the level of information transparency (Baumann and Nier, 2004). Information disclosure and transparency are not just the amount of information published by the company, but also the quality of information disclosed. «Transparency requires that market participants not only provide information, but also arrange and display the information in a context where information becomes available,» said Federal Reserve Chairman Alan Greenspan. quoted in Baumann and Nier, 2004). Bushman (2016) also noted that «the relationship between accounting information and transparency is complex. A bank›s financial statements provide a description of the truth, not the truth itself. The transparency of the information reflects how the bank›s actual situation is clearly expressed after the reported accounting figures. «

In this topic, the definition of information disclosure in Basel Committee commercial banks is used. Accordingly, information disclosure is the *"disclosure of information to the public in a **timely and reliable manner** to ensure that users of information **accurately assess** the financial situation and operations, business operations business, and operational risks "*(Basel, 1998).

2.2. THE THEORETICAL LINKAGE BETWEEN DISCLOSURE AND COST OF EQUITY CAPITAL

2.2.1. The theory of agency cost (agency problem)

The agency cost theory states that because of the separation of ownership and corporate governance, the investor faces the agency cost. This cost appears due to the difference between the manager and the investor objectives. Accordingly, if both sides have the objective of maximizing benefits, managers are not always well-targeted for the benefit of the investor (Jensen and Meckling, 1976). Agency cost also occurs when there is a difference between the investor's and the business's creditors' goals, when investors look for high-yielding and risky investment opportunities with aim to improve corporate value, while investor set the safety to the top aiming to recover capital and interest. For commercial banks, this type of enterprises also faces a higher agency cost than other firms because the bank has a high leverage ratio, and its creditors (depositing money) are less likely to have control over their operations (Elbannan and Elbannan, 2015). Agency costs are zero if the business owner is also the manager, and this cost will increase if the manager owns little or no stock of the business. Because of the agency cost and conflict of interest, investors will require higher returns for agency risk, thereby increasing the cost of equity.

To overcome this situation, investors use corporate governance as a means to protect themselves. Corporate governance reduces the opportunity behaviour of managers through the management of their operations, thereby helping to limit agency problem. One of the effective channels of corporate governance is to increase transparency and disclosure. By requesting information disclosure, investors can control managerial activity. In the banking system, the requirement for improved corporate governance through increased disclosure is also reflected in the Basel convention. In particular, the latest Basel convention, Basel 3 has built a pillar 3 on information disclosure in which many new regulations on disclosure are issued after the financial crisis, such as disclosure of risk information. credit risk management ...

Good corporate governance enhances corporate value, increases operational efficiencies through rational resource allocation, mitigates risk from financial crisis, and builds good relationships with the owners. In addition, one of the positive effects of good corporate governance is to help businesses better access outside capital, thereby reducing the cost of equity (Claesens, 2003). As such, increasing disclosure of information will increase the efficiency of corporate governance, reducing agency costs, thereby reducing the cost of equity.

2.2.2. The theory of information asymmetry (information problem)

Information asymmetric occurs when businesses have information that the investor can not reach and the information objective between investors and businesses is not the same. Investors depend on market information to make their investment decisions; this information in turn depends on the supply of the business. Businesses can turn the information into better information; even in the case of a poor investment opportunity, the business may also hide unfavourable information and only provide favourable information to attract investors and to maximize the benefits of the plan (Healy and Palepu, 2001 in Rikanovic, 2005). Lack of proper and necessary information, investors do not have sufficient basis to have an accurate assessment of

the business situation, as well as the quality of the investment. Therefore, they can not distinguish between beneficial investment opportunities and unfavourable investment opportunities. Recognizing the situation, investors can equate good investment opportunities and poor investment opportunities in the market.

Due to information asymmetries, investors in the market face two difficulties: (i) they are not sure about their investment before investing capital, (ii) they do not have trust toward managers because managers have better information about the value of their investments (Rikanovic, 2005). Therefore, the investor will require a certain amount of money for that uncertainty. This cost is charged to transaction costs, which increases the cost of equity of the business. Increasing the level of disclosure reduces information asymmetry and improves economic issues, in which the factor of trust plays an important role. Increasing disclosure reduces the investor's distrust of managers and uncertainty about the value of the investment, so investors require lower returns on investment. (Rikanovic, 2005). As a result, the cost of equity falls.

2.3. Empirical evidence

The empirical studies on the impact of information disclosure to the cost of equity capital have mixed results. One of the pioneering studies in this area is Botasan (1997). The authors used a series of data from financial statements of 122 companies in 1990 to assess the relationship between information disclosure and cost of equity, which emphasized the role of analysts . The results show that for firms with fewer analysts following, increasing the level of disclosure has a relationship with decreasing the cost of equity. At the same time, this relationship at businesses with many follow-up analysts is not statistically significant. The reason, according to Botasan (1997), is that when a business has many followers, they often use analysts as a form of communication with investors rather than using financial statements. . The study by Petrova et al. (2012) supports the conclusion of Botasan (1997). Based on the data set of 121 Swedish companies and the RIV methodology used to calculate the cost of equity, research shows that companies can reduce their cost of equity by increasing the level of voluntary disclosure. This is true even if the research has controlled for individual risk of the company, such as leverage.

Rikanovic (2005) conducted a survey of 200 large German firms (by market value) on the amount of time and effort that the manager devoted to investor relations, with the aim is the search for a motive for voluntary disclosure. The three research questions posed by Rikanovic (2005) are: (Q1) how information disclosure reduces the cost of equity, and (Q2) how information disclosure reduces the cost of equity. and (Q3) the company should choose the disclosure strategy (level and tools used). In order to answer these questions, Rikanovic (2005) used instrument variables and the frequency of investor-related activities to represent the degree of information disclosure. The results show that an increase in one standard deviation of financial disclosure reduces the cost of equity by 1.3%. With the second research question, financial information disclosure helps to raise investor awareness and improve market liquidity, thereby reducing the cost of equity. The third research question, according to Rikanovic (2005), is that an appropriate disclosure strategy needs to achieve the following two goals in order to be successful. First, the strategy should aim to attract investors by increasing the level of disclosure. Raising the disclosure level helps to reduce the cost of equity and increase the company's stock price. Secondly, in order to reduce the cost of equity, the information disclosure strategy needs to be balanced and should be aimed at sustaining the current investor. Maintaining existing investors provides a sustainable investor base with high loyalty and vision. High investor retention rates represent high levels of investor satisfaction.

In another direction, Armitage and Marston (20 07) study the views of CFOs on the relationship between information disclosure and capital costs. Using qualitative research rather than quantitative research, the author interviewed CFOs of 16 companies from November 2005 to June 2006. CFOs are chosen at random, in which, there are two finance executives working in the banking sector and one finance director in the asset management company. The interview results show that most CFOs do not believe in a clear relationship between disclosure and capital costs. Only a quarter of them believe that increasing the level of disclosure will reduce the cost of equity. Another quarter believes that the impact of information disclosure on the cost of capital reduces to a certain extent, when the level of information discloser reaches "good practice", the impact of information disclosure will decrease gradually and no impact until the "best practice" level. Most (14/16) CFOs replied that the company had disclosed its private information to creditors. This will affect borrowing costs and borrowing volumes, rather than the cost of equity.

Cheung et al. (2010) investigated the relationship between information disclosure and market value of listed companies in China. The hypothesis given by the authors is that a company publishing more information can promote shareholder control over executive decisions, thereby reducing control costs, leading to lower costs of equity. To test the hypothesis, the authors used the data set of the 100 largest companies in China between 2004 and 2007. Establishment of financial disclosure based on 56 indicators, distinguishable from required information disclosure and voluntary disclosure. Using the fixed-panel regression model, the results show that there is a positive and statistically significant relationship between the level of information disclosure and the market value of the firm.

As a consequence, Elbannan and Elbannan (2015) study the impact of the quality of disclosure of management information on equity at commercial banks. With data from 48 banks operating in India between 2000 and 2009, Elbannan and Elbannan (2015) performed two independent regression models to test two hypotheses: (H1) cost of equity has a negative relationship with the information disclosure and (H2) cost of borrowing has a negative relationship with the information disclosure. Using the CAPM model to measure cost of equity, control variables including bank characteristics, national characteristics, and dummy variables for financial crises, the study by Elbannan and Elbannan (2015) conclude that the quality of disclosure of governance information is positively and statistically significant with the cost of equity, and there is a reverse relationship and statistically significant with cost of borrowing at commercial banks.

Similarly, the study by Bignin and Breton (2006), based on IPO-funded capital markets, shows the adverse impact of financial disclosure, and indicates that more accurate information will lead to increased cost of equity. As explained by the presence of speculators, increased disclosure of financial information could lead to an increase in information asymmetric in the secondary market, thereby reducing liquidity. Reducing market liquidity will therefore lead to an increase in external capital costs.

The theoretical foundations and empirical studies discussed in the previous section form the hypothesis of the study:

(H1): Financial disclosure reduce the cost of equity of commercial banks in Vietnam

3. METHODOLOGY AND DATA SELECTION

3.1. Sample selection

For measuring disclosure level of Vietnamese banking system, a large sample of 38 commercial banks in Vietnam will be used in the period from 2006 to 2017[1]. This is the period that disclosure requirements are key elements of financial regulation after the global financial crisis.

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[1]   Only commercial banks in Vietnam, excluding foreign bank branches operating in Vietnam

In order to achieve the second objective which is estimating the impact of disclosure level on banks' cost of equity, the sample depends on the availability of the information. Selected banks must have adequate data for running regression, including data for such variables as disclosure, cost of equity, and control ones. In particular, to gauge the cost of equity using CAPM model, banks must be listed on the stock market for at least three years. There are 16 out of 45 commercial banks which have been listed on Vietnam's stock market until 2018. Within these 16 banks, there are 8 banks that have been listed in the last 3 years. Therefore, the total sample of banks for measuring the influence of disclosure level on cost of equity will be 8 banks[1], with the period from 2011 to 2017.Thus, combining with data across years, the total data for the first objective is 416, and the second target is 52.

3.2. Variable measurement

In this section, the paper presents the methods of measuring variables in the model, including dependent variable of cost of equity, independent variables of financial disclosure and control variables.

3.2.1. Disclosure index

It is difficult to measure disclosure level as requiring subjective assessment by researchers in applying different techniques (Botasan, 1997). A number of studies using disclosure indexes which have been rated by reputable organizations. For example, while Huang and Zhang (2008) used AIRM (Association for Investment Management and Research Score) initiated by CFA; Enikolopov et al. (2014) employed S&P Disclosure Score (provided by S&P). Whereas, Cheung et al. (2010) using the Disclosure Index that calculated based on the OECD Principles of Corporate Governance. However, the use of these secondary available indicators possibly have their drawback such as being biased by calculators, lacking indicators in several years, and being inconsistent with the objectives' research. Therefore, this study will develop a separate financial disclosure indicator.

In terms of a wide range of needed information requirements, each business sector has different disclosure standards, hence it is impossible to apply a method of calculating disclosure level for all sectors (Botasan, 1997). For example, companies in the pharmaceutical industry often focus on disclosing research and development activities. Such high risk as banking industry, the concerns of investors and lenders are the variety of loan products, capital adequacy and bank's resilience. Thus, as proposed by Baumann and Nier (2004) and the current status of commercial banks in Vietnam, the level of disclosure will covers information related to credit structure, bad debt and loan loss provisioning, investment structure, deposit structure, capital structure, funds and off-balance sheet assets. Commercial banks will be assessed based on whether they are disclosed in the annual financial statements. For each criterion, banks will get 1 point. (see table)

In terms of relevant and updating financial information, the disclosure level index are evaluated based on the level of regular disclosure of financial statements and the level of financial statement updates on the company›s website. Accordingly, the frequency of disclosing financial report information to the market is chosen as measuring the level of regular disclosure, the bank will get 1 point if public the annual financial report, 2 points if public an additional financial report in the middle of the year, and get 3 points if releasing the quarterly financial statement. If the bank publishes a quarterly summary report, it will receive 2.5 points, and by mid-year will be 1.5 points. To measure the financial report update, the bank gets 2 points if the annual financial report is updated on website from 0-2 months since the end of accounting year, 1 point if updates after 3 months, and 0 points for the left.

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1   See Appendix 1

Thus, there are a total of 22 small criteria for scoring financial information disclosure. Financial Information disclosure is the average of all above criteria. Higher level of financial information disclosure, banks will have larger score of disclosure.

The index of financial information disclosure of commercial banks (DRANK) is measured according to the method proposed by Botasan (1997). Accordingly, in the first step, author arranges information disclosure level of commercial banks on a yearly basis, then takes this index divided by the number of banks assessed per year for collecting the index DRANK.

Table 1. Indicators assess the level of information disclosure

Code	Index	Code	Index
S1	Credit structure by terms	S12	Long-term capital: bonds
S2	Credit structure by industry	S13	Fund structure
S3	Credit structure by currency	S14	Capital structure
S4	Credit structure by client	S15	Contingent liabilities
S5	Bad debt structure by loan group	S16	Off-balance sheet assets
S6	Stock structure by type	S17	Deferred income
S7	Derivative financial instruments	S18	Loan loss provision
S8	Stock structure by holding purpose	S19	Loan loss provision for each group
S9	Deposit structure by period	S20	Explanation for used provision
S10	Deposit structure by object	S21	Information disclosure frequency
S11	Capital in the currency market	S22	Level of updating (publishing time)

3.3.2. Cost of Equity

There are several methods of measuring cost of equity, such as capital asset pricing model (CAPM), dividend growth model (DGM), arbitrate price theory (APT), three-factor model (Fama French)...However, this study uses CAPM model to estimate the cost of equity for commercial banks. Although CAPM's assumptions have not been yet appropriate for the stock market in Vietnam, the ease of use of CAPM is still used to calculate this indicator (Armitage and Marston, 2007). Capital Asset Pricing Model (CAPM) illustrates the relationship between expected return and risk. In view of the business, the expected return is the cost of equity and is expressed by the formula:

$$Ke = E\,[Re] = Rf_1 + (Rm - Rf_2) \times \beta$$

Where, Ke is the cost of equity; Rf_1 is a risk-free rate; $(Rm - Rf_2)$ is the market risk premium; finally, β is the systematic risk of the investment asset over the market's average risk.

In the above formula, Rf_1 and Rf_2 are essentially a single risk-free market variable. However, since the difference $(Rm - Rf_2)$ is meaningful when both Rm and Rf_2 have the same computational period. That reflects Rf_1 and Rf_2 values are not necessarily identical. If Rf_1 measure of risk-free rate at a certain time, the value of Rf_2 represents the average value in the period similar to R_m. R_m measures the yield of the portfolio of stocks in the market.

In the CAPM model, the following variables are selected:

Table 2: How to define data for variables in the CAPM model

Symbol	Variable	Period	Data sources
Rf_1	Yields of 10-year Government Bonds at the end of the year	2006 - 2017	https://www.investing.com/rates-bonds/vietnam-government-bonds

Rm	3 year Average yield of VN-Index	2006 - 2017	http://s.cafef.vn/Lich-su-giao-dich-Symbol-VNINDEX/Trang-1-0-tab-1.chn and Author's calculations
Rf $_2$	Yields of 10-year Vietnam Government bonds in average during the year	2006 - 2017	https://www.investing.com/rates-bonds/vietnam-government-bonds
B	The beta coefficient of the Bank	2006 - 2017	Author's calculations

Rf $_1$ is derived from the yield of the 10-year government bond at the end of the year. Meanwhile, Rf $_2$ is calculated by the average yield of 10-year Government Bonds in Vietnam within 3 years. To calculate the Rf $_2$ value for 2017, for example, the average yield of 10-year government bonds in 2015, 2016 and 2017 will be selected. Similarly, Rm is the average annual yield of the VN-Index also determined by the average value of the VN-Index for 3 consecutive years.

3.3.3. Control variables

To accurately assess the impact of information disclosure on the cost of equity, the topic adds a model of factors that can influence independent variables based on the experience of similar studies. This includes bank size (SIZE), credit growth (LGRO), return on equity ratio (ROE), earning per share (EPS), market profitability (VnIndex), and book to market value (BM).

According to Cheng et al. (2007), Elbannan and Elbannan (2015), large-scale companies often have low cost of equity, so the author expects the opposite relationship between scale and cost of equity. Similarly, banks with high growth prospects (as reflected by credit growth) can lead to lower cost of equity, as the level of risk from investment decreases (Huang and Zhang, 2008). Therefore, the expected relationship is the inverse relationship between credit growth and cost of equity. Performance indicators of the company, including ROE and EPS, are expected to have a negative impact on the cost of equity. Companies that perform well will reduce investment risk, increase future earnings expectations, and reduce the cost of equity. Besides, book to market value is expected to have positive relationship with cost of equity.

The cost of capital is also affected by the law of supply and demand. As the capital supply decreases, the cost of capital increases and vice versa. The supply of capital to a particular company is affected by the opportunities available on the market. If there are many good business opportunities on the stock market, investors will moves their capital from other market to stock market, thereby decreasing the cost of equity. Market opportunities are expressed through VnIndex, so the author expects the inverse relationship between this index and the cost of equity.

Table 3: Control variables in the model

Symbol	Variable name	Expected impact
SIZE	The total asset	(-)
LGRO	Credit growth	(-)
ROE	Return on equity	(-)
EPS	Earning per share	(-)
VnIndex	Profitability of the market	(-)
BM	Book to Market value	(+)

While SIZE is measured by taking the logarithm of the bank's total assets in the fiscal year, LGRO is measured by the increase in credit growth from year to year. BM is measured by book value of equity divided by bank market capitalisation. Besides, EPS is measured by first taking the logarithm of net income in the financial year, then divided by the total number of outstanding shares; and ROE is collected by

net income divided by total equity in the fiscal year. The average yield of the VN-Index in the last two years will be used to calculate VN Index with data from the website's VnDirect. All variables of banking characteristics are collected from financial statements of sample commercial banks.

Considering factors affecting the cost of equity combined with the database and business characteristics of commercial banks in Vietnam, the research model assessing the impact of financial information disclosure on the cost of equity is built. This model is derived from studies by Baumann and Nier (2004); Botasan (1997), Cheung et al. (2010); Elbannan and Elbannan (2015); Poshakwale and Courtis (2005). As the topic uses tabular data, the regression model employs fixed effects or random effects depending on the sequence of data.

$$COE_{it} = \beta_0 + \beta_1 DRANK_{it} + \beta_2 SIZE_{it} + \beta_3 LGRO_{it} + \beta_4 EPS_{it} + B_5 ROE_{it} + \beta_6 VnIndex_{it} + \beta_7 BM_{it} + \varepsilon$$

4. EMPIRICAL ANALYSIS

4.1. The Vietnam commercial bank disclosure index

The level of information disclosure of banking system in Vietnam has changed significantly in the period 2006 - 2013, from 0.484 to 0.882. With the increase in disclosure level, the standard deviation between the information disclosure level of banks also decreased. This shows that commercial banks with low disclosure levels have raised their disclosure to near the industry average, thereby increasing the level of industry disclosure and reducing the difference between banks. After that, the period 2014 – 2015 experienced the downward trend in average disclosure level, along with the wider difference among banks. At the same time, the median level has increased continuously since 2006. This trend shows that most commercial banks have increased their information disclosure level, while some banks reduced information disclosure significantly. The explanation for this phenomenon is that during the period 2014-2015, many banks encountered operational problems, leading to a series of mergers and acquisitions. These weak banks tend to reduce the level of information disclosure to the public.

Table 4. Information disclosure index of Vietnam Banking System

Year	Number of Bank	Average	St. Dev	Median	Lowest	Highest
2006	34	0,484	0,290	0,409	0	0,955
2007	35	0,595	0,283	0,500	0	1,023
2008	37	0,638	0,297	0,591	0	1,023
2009	38	0,744	0,265	0,886	0	1,045
2010	38	0,807	0,248	0,909	0	1,091
2011	37	0,814	0,253	0,909	0	1,091
2012	36	0,866	0,186	0,920	0,455	1,045
2013	35	0,882	0,210	0,955	0,227	1,091
2014	33	0,855	0,254	0,955	0,091	1,091
2015	31	0,861	0,284	1	0	1,091
2016	31	0,876	0,287	1	0	1,136
2017	31	0,880	0,314	1	0	1,136

Sources: Author's calculator

Figure 1 describe the 12 years- average annual disclosure level of the bank in the sample. Over the whole period of research from 2006 to 2017, Vietnam Export Import Commercial Joint Stock Bank (EIB) had the highest average disclosure rate, reaching 1.0075. Looking back from 2014, Bank for Investment and Development of Vietnam (BIDV) has become the highest rated bank. In its financial report for 2017,

BIDV provided sufficient information on the credit structure, bad debt structure, investment and trading securities, derivatives, capital and funds structure, off-balance sheet items, risk provisions for each group of bad debts and explanation of the use of the provision in the year. BIDV provided quarterly financial statements and published audited consolidated financial statements in March. In contrast, the bank with the lowest disclosure level was the First Commercial Bank (FCB), with a score of 0.281. This is an low performing bank which has merged with Tinnghia Bank and Saigon Commercial Bank (SCB) since 2011. In the five year period 2006-2010, there are only two years at which the bank provide financial statements, and this is a summary, not a full one. The bank also only publishes annual reports.
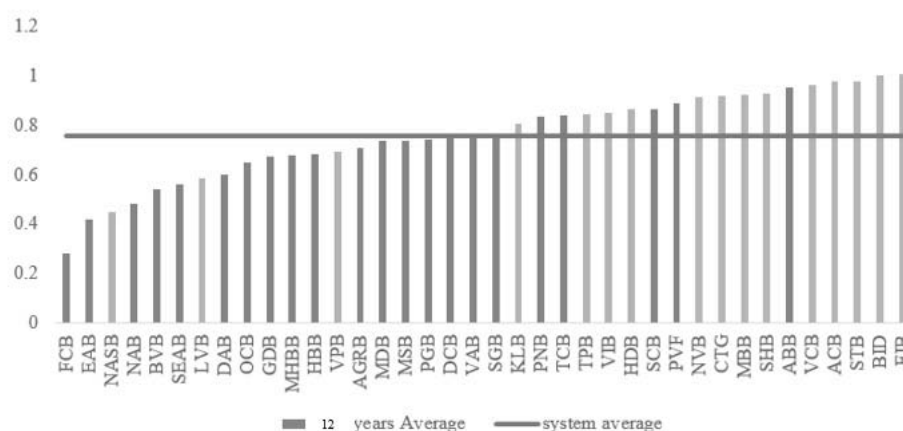
Fig 1. 12 year- average disclosure index of commercial banks in Vietnam

Source: Author's calculator

In terms of the listing on the stock exchange, the presence of banks on the stock exchange is related to their level of disclosure. Of the 10 banks with the highest disclosure rates, 9 banks have been listed on the stock exchange since 2014 (green), and those that have just been listed in the last two years (orange) is also a group of banks with high disclosure. Lienviet Post Joint Stock Commercial Bank (LVB), BAC A Bank (NASB) and Vietnam Prosperity Join Stock Commercial Bank (VPB) has not been widely publicized in the past few years, but since 2014 also belongs to the group of banks leading the information disclosure index. As such, commercial banks have improved the disclosure of information in order to meet the requirements of listing on the stock exchange and to seek equity capital more easily and effectively.

Table 5. Information disclosure level by bank group

Group	Number of banks	Average	Median	St. Dev
1	4	0,90	0,94	0,13
2	14	0,79	0,82	0,18
3	12	0,73	0,75	0,17
4	8	0,69	0,71	0,19

Source: Author's calculator

In terms of performance, banks are categorized into four groups based on classification of the Research Institute for Banking (2016), including: state-owned joint-stock banks (group 1), well performing banks (group 2), medium performing banks (group 3) and weak performing banks (group 4). The results show that commercial banks with better performance tend to publish more information to the public. The difference on disclosure level among banks also decreased with the group of banks performing well.

Of the 20 indicators covered by the annual financial report, indicator 11 and indicator 12 (representing the money market funding and long-term funding) are two indicators that most of banks public in financial statements (about 93% of banks). At the same time, the indicators which reported by the least number of banks were related to the provisioning and use of risk provisions (targets 19 and 20). The indicator which is most currently considered by investors and managers when evaluating commercial banks' activities is indicator 5 (bad debt structure). For this indicator, banks have only just begun to announce. Before 2010, only 39% of banks have reported bad debt structure for each group of debts.

Table 6. Disclosure level sub-Index

Sub-index disclosure level (% bank reported)	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10
2006-2009 average	48.2%	42.5%	46.1%	43.9%	39.8%	52.8%	11.5%	65.4%	47.5%	55.1%
2010-2013 average	73.3%	74.7%	74.0%	76.1%	81.8%	84.3%	33.8%	91.1%	76.1%	80.2%
2014-2017 average	80.2%	79.5%	79.5%	79.5%	92.9%	84.2%	53.3%	90.4%	80.2%	80.2%
Overall	66.0%	65.6%	66.5%	66.5%	71.5%	73.7%	32.9%	82.3%	67.9%	71.8%
Sub-index disclosure level (% bank reported)	s11	s12	s13	s14	s15	s16	s17	s18	s19	s20
2006-2009 average	92.9%	92.9%	61.4%	82.4%	84.3%	78.7%	83.6%	92.2%	11.7%	0.0%
2010-2013 average	98.0%	98.0%	83.6%	92.5%	98.0%	95.9%	95.9%	96.6%	27.4%	2.0%
2014-2017 average	93.6%	93.6%	80.2%	91.2%	93.6%	93.6%	93.6%	93.6%	26.2%	13.5%
Overall	94.8%	94.8%	75.1%	88.7%	91.9%	89.4%	91.0%	94.1%	21.8%	5.2%

Source: Author's calculator

For the disclosure frequency, before 2010, most banks only publish the annual financial statement. In the latter stage, the frequency of financial statement disclosed by banks has been increased, supplemented by mid-term and quarterly report. In 2017, of the 31 research banks, more than 70% bank provided quarterly reports. By contracts, as of 8/2018, there are still two banks that do not provide 2017 financial statements, namely DongA Bank and Ban Viet. These are two weak banks that are under the supervision of the State Bank or have legal problems. This reflects the picture of the level of information disclosure by commercial banks in Vietnam, when weak banks tend to reduce the level of disclosure to the public.

4.2. The effect of bank disclosure on cost of equity capital

4.2.1. Descriptive statistics

Table describes the variables in regression model of the effect of financial disclosure on bank cost of capital. The average asset of the eight banks in the sample is VND 302.69 trillion and net interest revenue is VND 7.83 trillion. With this total assets and turnover, the eight banks in the sample are among the largest banks in the banking system in Vietnam. Performance indicators include ROE (9.97%), and EPS are also among the leading banks. The credit growth rate is 6.06% per year, representing good business prospects. In the period from 2011-2017, average Vnindex growth is 15,79%.

Table 7. Descriptive statistic

Variable	No	Average	St. Dev	Min	Max
COE	52	0,076	0,031	0,003	0,128
DISC	52	1,020	0,053	0,818	1,091

DRANK	52	0,655	0,216	0,226	1,000
VnIndex	52	15,790	20,561	3,020	71,400
ROE	52	9,975	6,787	0,070	27,490
EPS	52	2730,769	2650,162	7,000	8224,000
LRGO	52	0,061	0,235	0,000	1,000
SIZE	52	14,230	0,546	13,000	15,000
BM	52	1,0458	0,495	0,269	2,969
ASSET	52	3,03e+14	2,61e+14	2,16e+13	1,10e+15
NIR	52	7,83e+12	6,39e+12	5,96e+11	2,23e+13

The average cost of equity of commercial banks was 7.62%, fluctuating between 0.2% and 12.7%. The cost of equity of commercial banks has changed over time. Of which, 2014, 2015 are two years with the highest cost of equity. This is a period witnessing many fluctuations in banking activity, reducing the confidence of investors, thereby raising the cost of equity. In 2017, the bank with highest cost of equity is Joint Stock Commercial Bank for Foreign Trade of Vietnam (VCB) (12.2% per annum). Meanwhile, the lowest cost of equity was National Citizen Commercial Joint Stock Bank (NVB), at 5.2%.The average disclosure level of these 8 banks is 1.02, ranging from 0.81 to 1.09. Information disclosure on all eight commercial banks has increased each year and is higher than the average information disclosure of the whole sector.

4.2.2. Impact of Bank Disclosure on Cost of Equity Capital

In this section, we describe the result of testing the hypothesis specified in Model (1). Pearson correlation coefficients for the variables are shown in table 8. The correlation matrix shows no correlation coefficient in excess of 0.6. The highest coefficient is 0.504 which shows the relationship between ROE and EPS. The remaining correlation coefficients were lower than 0.4. Thus, model (1) does not have autocorrelation problems.

Table 8. Correlation Matrix between variables in the model

	COE	**DRANK**	**SIZE**	**BM**	**Vnindex**	**LGRO**	**ROE**	**EPS**
COE	1,000							
DRANK	-0,120	1,000						
SIZE	0,076	-0,037	1,000					
BM	0,006	-0,066	-0,409	1,000				
Vnindex	-0,363	-0,039	-0,134	-0,002	1,000			
LGRO	0,060	0,292	-0,111	0,211	-0,121	1,000		
ROE	-0,208	0,106	0,355	-0,425	-0,105	0,160	1,000	
EPS	0,328	-0,107	0,223	-0,505	-0,163	-0,071	0,504	1,000

The research use Hausman test to determine the appropriate form of the model. The Hausman test of the above models has p value <0.05, the Hausman Test reject the hypothesis H0. Therefore, appropriate form of models 1 is fixed effects models. Running the model with fixed effects showed that information disclosure were inversely and statistically significant relate to the cost of equity. However, the heteroskedasticity test of the FEM model (using the Wald test) has p-value <0.05, rejected Ho, the model encountered heteroskedasticity problem. To overcome the above errors, the topic using Robust Standard test. The results are following:

Table 9. Regression result

COE	Coef.	Robust Std.Err	T	p> |t|	[95% Conf. Interval]	
DRANK	-.0636591	.0330086	-1.93	0.095	-.141712	.0143938
SIZE	-.0189864	.0184552	-1.03	0.338	-.0626261	.0246533
BM	-.0182454	.0098488	-1.85	0.106	-.0415341	.0050434
Vnindex	-.0005839	.0002512	-2.36	0.053	-.001178	.0000101
LGRO	.0062924	.0146689	0.43	0.681	-.028394	.0409787
ROE	-.0031522	.0005032	-6.26	0.000	-.004342	-.0019624
EPS	.0099516	.0059419	1,67	0.138	-.0040987	.024002
-cons	.3764945	.2784357	1.35	0.218	-.2819013	1.03489
R-sq	0.4275		**Number of obs**		52	

Testing for autocorrelation with Durbin-Watson test give P-value>0.05, and testing for multicollinearity with Variance Inflation Factor give VIF<5 for all variables, showing the above model is not encountered autocorrelation and multiconllinearity. Thus, after controlling for heteroskedasticity, the estimates from model 1 is BLUE (linear, reliable, unbiased and consistent). The R-sq is 0,4275. Since table data usually yields a low R-sq, R-sq of the above equation is on acceptable threshold, indicating that the above equation explains well for the dependent variable as the cost of equity.

The result show that financial disclosure has an inverse and statistically significant relationship with cost of equity capital, even after controlling for bank characteristics and market characteristics. This result is consistent with the theory of the relationship between information disclosure and cost of equity and Botasan (1997), Rikanovic (2005), Retrova et al. (2012), Armitage and Marston (2007) works. Increasing the disclosure level reduces the investor's estimation risk and agency cost, which in turn has a negative impact on the cost of equity.

In addition to the disclosure level, other control variables in the model also have an explanatory role for the cost of equity. In turn, ROE has a opposite and statistically significant relationship to the cost of equity, suggesting that the higher the return on equity, the higher the cost of equity. The VnIndex showing market yields are negatively correlated and statistically significant for the cost of equity. When the stock market in general shows signs of improvement, investors move their capital from other markets, such as consumption, savings into the stock market. Higher capital supply leads to lower capital costs.

5. CONCLUSIONS AND POLICY IMPLICATIONS

Research conclusions

In this study, we measure the information disclosure of Vietnam banking system and investigate the effect of bank's disclosure on cost of equity capital. The research shows the upward trend in level of information disclosure of Vietnam commercial banks from 2006 to 2013. Along with this trend, the difference in disclosure level among banks is narrowed. From 2014 onwards, the inefficient performance of some commercial banks due to high non-performing loans and the wave of mergers and acquisitions among those banks has partially lowered the level of information disclosure of the banking system. In terms of each bank, the level of information disclosure is positively correlated with their performance and listing of banks on the stock market.

The second objective of this research is to examine the impact of information disclosure on the cost of equity. Using the data of 8 commercial banks in the period from 2011 to 2017, this research shows that information disclosure have inverse affect on the cost of equity. Thus, in order to attract investment capital and reduce the cost of equity, weaker banks need to improve the level of disclosure, at least to reach the general level of the market.

Policy implication

The study presents an overview of information disclosure, the contemporary theories as well as empirical evidence on the impact of information disclosure on the cost of equity. Previous research has concluded that increasing disclosure will reduce the cost of equity. With such conclusion, the study has some suggestions for the banking system in Vietnam as follows:

First, increasing the level of information disclosure is urgently needed to help regulators, investors and banks themselves see and evaluate their operations. Besides, in the context that the State Bank of Vietnam is aiming to manage the banking system on market principle, increasing the information disclosure level will help banks to get better support from management agencies, such as early warning.

Secondly, increasing disclosure of financial information is not an easy choice because it does not always increase cost benefits. Therefore, commercial banks need to increase disclosure of financial information as progressively as possible, such as increase the disclosure frequency of financial statement information, addition of contents of information disclosure in financial reports ...

Thirdly, the State Bank of Vietnam should support the development and publication of information disclosure indicators of the banking system to promote disclosure, thereby protecting bank's investors and customer and can help bank to reduce the cost of equity.

Appendix a. Commercial banks in vietnam

No	Symbol	Name	Objective 1	Objective 2
1	ABB	An Binh Commercial Joint Stock Bank-ABBANK	X	
2	ACB	Asia Commercial Joint-stock Bank	X	X
3	AGRB	Vietnam bank for Agriculture and Rural – Agribank	X	
4	BID	Bank for Investment and Development of Vietnam	X	
5	BVB	Bao Viet Commercial Joint Stock Bank	X	
6	CTG	Vietnam Joint-Stock Commercial Bank for Industry and Trade	X	X
7	DAB	DaiA Bank	X	
8	DCB	Ocean Commercial One Member Limited Liability Bank	X	
9	EAB	DongA Commercial Joint Stock Bank	X	
10	EIB	Vietnam Export Import Commercial Joint Stock Bank	X	X
11	FCB	First Commercial Bank – Ficombank	X	
12	GDB	Viet Capital Commercial Joint Stock Bank	X	
13	HBB	Habubank	X	
14	HDB	Ho Chi Minh City Development Joint Stock Commercial Bank	X	
15	KLB	Kien Long Commercial Joint Stock Bank	X	

No	Symbol	Name	Objective 1	Objective 2
16	LVB	Lien Viet Post Joint Stock Commercial Bank	X	
17	MBB	Military Commercial Joint Stock Bank	X	X
18	MDB	Mekong Development Joint Stock Commercial Bank	X	
19	MHBB	Mekong Housing Bank	X	
20	MSB	Vietnam Maritime Commercial Stock Bank	X	
21	NAB	Nam A Commercial Joint Stock Bank	X	
22	NASB	Ngan hang Thuong mai Co Phan Bac A-BAC A Bank	X	
23	NVB	National Citizen Commercial Joint Stock Bank	X	X
24	OCB	Orient Commercial Joint Stock Bank	X	
25	PGB	Petrolimex Group Commercial Joint Stock Bank	X	
26	PNB	Southern Bank	X	
27	PVF	Vietnam Public Joint Stock Commercial Bank	X	
28	SCB	Saigon Commercial Bank-Saigonbank	X	
29	SEAB	Southeast Asia Commercial Joint Stock Bank	X	
30	SGB	Saigon Bank for Industry and Trade	X	
31	SHB	Saigon - Hanoi Commercial Joint Stock Bank	X	X
32	STB	Saigon Thuong Tin Commercial Joint	X	X
33	TCB	Vietnam Technological and Commercial Joint-Stock Bank	X	
34	TPB	Tien Phong Commercial Joint Stock Bank	X	
35	VAB	Vietnam Asia Commercial Joint-Stock Bank	X	
36	VCB	Joint Stock Commercial Bank for Foreign Trade of Vietnam	X	X
37	VIB	VietNam International Commercial Joint Stock Bank	X	
38	VPB	Vietnam Prosperity Joint Stock Commercial Bank	X	

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THE IMPACT OF AUDIT QUALITY FACTORS ON AUDITOR RETENTION: PERCEPTIONS OF AUDIT CLIENTS IN HO CHI MINH CITY

Ha Hoang Nhan*, Vo Van Nhi**, Mai Thi Hoang Minh***

ABSTRACT: *Our paper aims to examine the relationship between audit service quality perceived by clients and intention to retain their current audit firms. Noticeably, this paper utilizes a new approach of audit quality definition by considering two aspects including not only technical qualities but also service qualities dimensions.*

* Design/methodology/approach (limit 100 words)

Based on the theory of service quality, questionnaires of 38 audit quality attributes are designed to survey perception of 260 companies in HCMC on audit service quality for the financial statement of the year 2017 and the likelihood of retaining or rotating current audit firms for the next fiscal year. Then, the binary logistic regression is uses to test the theses of the impact of seven audit quality factors on clients' tension to retain their incumbent auditor.

* Findings

The results illustrate that there are seven audit service quality factors affecting positively on auditor retention, and this is consistent with empirical evidence of prior studies as well as service quality literature. It is noticeable that there are three factors namely Responsiveness, Reputation and Independence which have significantly difference in perception of service quality among clients intending to retain their current audit firms and companies preferring to appoint new auditors.

* Originality/value

Using the new audit quality definition and questioning the perspective of the "direct customer" instead of diversifying stakeholders in the traditional approach, our results would be useful for auditing firms to deeply understand audit market in Viet Nam to improve their service quality aspects and keep clients coming back.

Keywords: *Audit service quality, Audit market, Auditor retention*

1. INTRODUCTION

There are such a great number of studies that developed hypothesized model to measure the audit quality with two components such as the probability that the auditor discovers irregularities and report them since the most agreed definition of DeAngelo (1981) have introduced. According to Duff (2004, 2009) and Caneghem (2004), the audit quality definition is defined as the market's perception of the auditor's competence and their independence.

The majority of previous studies primarily focus on audit quality as the ability that auditors could complete their work and produce audit reports (Duff, 2004). From a traditional point of view, auditors' mission is to provide an objective audit report on the financial statements and the user of the financial statements as auditors' ultimate clients. As a result, the majority of studies measure audit quality through financial statements or survey the views of users of financial reports.

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According to Duff (2004, 2009), these study approaches primarily focus on audit quality in aspects of providing and completing auditors work to issue audit reports. From this traditional point of view, auditor assignment is to provide an objective audit report on the financial statements with the user of the financial statements as "ultimate customer". Researchers from a service quality perspective, such as Duff (2004, 2009), have extended the concept of traditional audit quality in a more comprehensive way. The definition of audit quality or audit service quality in this field consists of two elements: technical quality (using the DeAngelo (1981) definition of competence and independence) and service quality (using service quality model of Parasuraman et al. (1985)).

Quality research plays an important role because customer or client satisfaction is affected by perceptions of service quality. Ismail (2006) and Butcher (2012) relied on an influence of service quality to clients' loyalty to develop models that demonstrate the positive impact of audit quality on auditor retention of clients.

Given the specific context in Vietnam, the auditing market has been formed and developed over the last 20 years and is considered a relatively young market. Most of the audit firms in Vietnam are small and medium size. To May 2018, there were 176 professional auditing firms accepted by Ministry of Finance[1]. However, in terms of revenue structure, the market share is mainly focused on a number of large companies (Phan Van Dung, 2015). Specifically, based on the statistics data of the year 2014, there are 11 oversea firms, 12 Vietnamese firms being members of international network of professional auditing firms in the total of 140 audit firms. Although this group only accounts for about 16% of the market volume, the turnover constitutes more than 3,400 billion VND, which equivalent to 75% market share. According to the latest published public data of VACPA (posted by AASC), the top 10 companies also reported revenue of VND400 to VND900 billion from Big4 and from VND50 billion to VND150 billion for the others. It means that the market share of audits is still controlled by a small number of companies.

Competition in the auditing market takes place quite aggressively in order to retain clients and expand new clients from rival companies. Maintaining a stable clients base also helps companies maintain revenue to cover costs and make a profit. Therefore, the understanding of clients' views on audit quality is very important to the audit firms. This helps audit firms to understand clients' needs in Vietnam and aspects of audit quality needed to improve. However, little academic research in Vietnam considers the effect of audit quality factors on clients' continued use of auditing services. Notably, some authors such as Bui Thi Thuy (2014) Phan Van Dung (2015), Lai Thi Thu Thuy & Pham Duc Hieu (2017) research about audit quality but using the traditional approach.

To sum up, in the world in general and in Vietnam in particular, the audit quality approach based on service quality literature is quite limited, whereas most of the researchers focus on traditional view of audit quality. Only a few authors have developed service quality factors model that influence client loyalty in the audit field, such as Butcher et al. (2012). Similarly, most academic studies in Vietnam still consider the audit quality based on traditional definition, and there is no study adopts service qualities based on the clients' perspective especially in the context of competitive markets and companies need to understand the clients' perception of the service provided.

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[1] Ministry of Finance (2018), List of Certified Public Accountants (updated till 01/06/2018)http://www.mof.gov.vn/ webcenter/portal/btc/r/lvtc/ktkt/ckdsktvhnvdnkt?_afrLoop=4318622372770976#!%40%40%3F_afrLoop%3D431 86622372770976%26centerWidth%3D100%2525%26leftWidth%3D0%2525%26rightWidth%3D0%2525%26sho wFooter%3Dfalse%26showHeader%3Dfalse%26_adf.ctrl-state%3Djthf0n7cm_108

2. LITERATURE REVIEW

2.1. Service quality and client loyalty

2.1.1. Service quality model

Parasuraman et al. (1985) defined service quality as the "global evaluation or attitude of overall excellence of services" through capturing the differences between the clients' expectation and perceptions of services delivered by provided firms. This is the definition used by an enormous number of research scholars as well as corporate executives and widely accepted in research and practical applications. The initial ten dimensions that were believed to represent service quality were Competence, Courtesy, Credibility, Security, Access, Communication, Knowing the customer, Tangibles, Reliability, and Responsiveness. By the early 1990s, the authors had refined the model to five dimensions to form the service quality SERVQUAL model.

Table 1. SERVQUAL model

No.	Dimensions	Definition
1	Reliability	Ability to perform the promised service dependably and accurately
2	Responsiveness	Willingness to help clients and provide prompt service
3	Assurance	Knowledge and courtesy of employees and their ability to convey trust and confidence
4	Empathy	Caring, individualized attention the firm provides its clients
5	Tangibles	Appearance of physical facilities, equipment, personnel, and communication materials

2.1.2. Service quality perceptions and client loyalty

Many studies have shown that there is a link between perceived quality of service and customer satisfaction (Yi, 1990), and this satisfaction will be positively correlated with clients' loyalty. In particular, client's satisfaction comes from experiencing services and comparing that experience with expectations about the quality of service (Oliver, 1980). If the service provider brings to the customer quality products and services that meet the needs and expectations of the customer, the company initially to make clients satisfied. Thus, service quality is the most influential factor in customer satisfaction (Cronin and Taylor, 1992; Yavas et al., 1997; Ahmad and Karnal 2002). In addition, clients who are satisfied with the service provided that will remain loyal to the service provider rather than the customer who is dissatisfied with the service provided (Rust and Zahorik, 1993; Storbacka et al., 1994). In other words, the quality of service and customer loyalty are closely intertwined in that the quality of service is what is created first and then decides the loyalty of the customer.

2.2. Audit service quality and audit retention

2.2.1. Audit quality model

One of the most accepted audit quality definitions is the one defined by DeAngelo (1981). Specifically, audit quality is a combination of two possibilities to detect and report errors on the financial statements, which in part depend on the independence of auditors. High-quality audit firms are expected to be less likely to accept questionable accounting methods and are more likely to detect and report them. This is a definition that stands on the perception of the market on two aspects, including the capacity and independence of auditors.

It can be said that DeAngelo's definition (1981) is a traditional approach to audit quality, because it focuses on the aspect of audit quality as a product from auditors. However, the researchers then expanded the concept of audit quality in a way that included the aspects of service quality beyond the two aspects proposed by DeAngelo (1981).

Audit service quality model - Duff (2004)

The AUDITQUAL of Duff (2004) has extended previous research by reference to the service quality literature. This model consists nine factors labelled reputation, capability, assurance, independence, expertise, experience, responsiveness, empathy, and non-audit services. Duff (2004) classified audit qualities into two elements namely technical qualities and service qualities. Specifically, technical qualities related to two factors identified in DeAngelo's (1981) definition, whereas service qualities regard to the five dimensions of SERVQUAL approach. Duff (2004) used a five-point Likert scale to sample 109 UK AEPs (auditors), 75 UK CFOs (auditees) and 74 fund managers in the UK (investors).

Table 2. AUDITQUAL model

Dimension	Definition
Reputation	The standing the auditor enjoys in the market as a reputational intermediary
Capability	The ability of the auditor to conduct the work
Assurance	Those processes the auditor has in place to assure a high-quality audit
Independence	The objectivity and willingness of the auditor to report any breach in the client's accounting system
Expertise	Possession of relevant specialist knowledge by the auditor
Experience	The experience the auditor has with the auditee
Empathy	The degree of understanding the auditor has with the challenges the auditee faces
Responsiveness	The ability of the auditor to tailor their service to auditee needs
Non-audit services	The ability of the auditor to be able to offer other accounting-related services

Source: Duff (2004)

Audit service quality model - Duff (2009)

Duff (2009) stated that service quality and technical quality are both vital components of audit quality. The purpose of this paper is to examine changing perceptions of audit quality in the UK during a period of remarkable changes in the twenty-first century. Specifically, the collapse of Enron in the US followed by the demise auditor Arthur Andersen triggered concerns about auditor independence. As a result, some standard setting body for auditing were established to meet the demand for a review of the UK regulatory framework and an increase in public oversight such as Coordinating Group on Audit and Accounting Issues – CGAA, Audit Inspection Unit – AIU. At the same time, the share of non-audit turnover to audit services income earned by Big4 firms (Deloitte, PwC, KPMG, Ernst & Young) went down significantly from 2002 to 2004 (Duff,2009). The sample of this study was drawn from an identical sampling frame to Duff (2004) for comparison purposes including three audit stakeholder groups of auditors (183), auditees (121) and investors (111) through a dataset gathered in 2005. The paper has three aims namely (1) examine the construct validity of AUDITQUAL scores, (2) assess the degree of measurement equivalence of AUDITQUAL across three groups of the three stakeholder groups based on mean scores of multivariate analysis of variance (MANOVA) and (3) test hypothesized differences in AUDITQUAL scores with respect to group and time. For the purposes of this paper, a competing model is tested including four higher-ordered factors labeled competence, independence, relationship and service qualities. It is concluded that three researched groups view competence, service quality, relationship, independence as related, and part of a larger construct of audit quality. Interestingly, all stakeholders see service qualities as integral to the audit process and auditors as well as auditees perceive this feature as no more important as investors do.

Fig1. Audit quality model
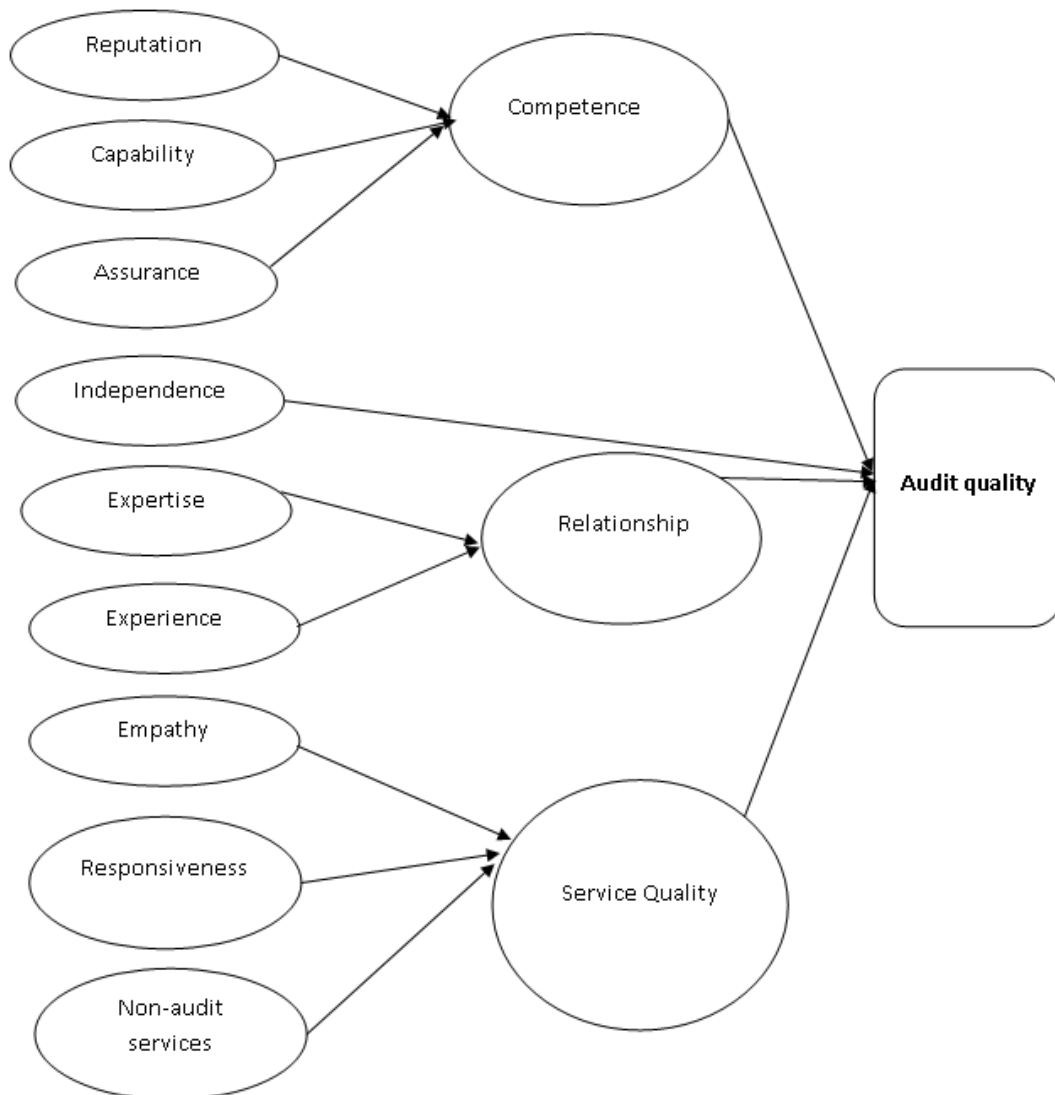
Source: Duff (2009)

2.2.2. Audit service quality perceptions and auditor retention

In the field of auditing, very few studies mention the relationship between client's satisfaction and their loyalty. In addition, there is little research in this area regarding the relationship between audit service quality characteristics and client loyalty demonstrated by the continued relationship with incumbent auditors. One of the few studies that the author would like to mention is the study by Ismail et al. (2006). The purpose of this paper is to explore the relationship between audit service quality, client's satisfaction and loyalty to the audit firms for a sample of 500 public listed companies listed in Bursa Saham Malaysia for year 2005. They hypothesized positive relationships between service quality and satisfaction and loyalty. Ismail et al. (2006) stated that clients who satisfied with their auditors would retain those auditors' services for a longer period and could use other services from the auditor. The five dimensions of SERVQUAL was utilized to measure the perceptions and expectations of public listed companies on the services received from audit firms. They used hierarchical regression to examine the mediating effect of client satisfaction on the association between audit service quality and client's loyalty. The result is that the tangibility, reliability and empathy dimensions have significant effects on customer satisfaction and client satisfaction plays an important role

in enhancing client's loyalty. Client satisfaction was also found to mediate the relationship of audit service quality (via reliability dimension) and client loyalty via the reliability dimension (Ismail et al., 2006).

Butcher et al. (2012) examines the association between perceptions of audit service quality and auditor retention in the compulsory audit-tendering context of local government in the Australian state of New South Wales. They used a model of Ismail et al. (2006) as a theoretical basic and used the audit service quality taxonomy of Duff (2009). Butcher et al. (2012) use a questionnaire survey of 48 audit service quality attributes drawn from the audit service quality literature and administered to finance professionals and internal auditors. Their study employs the Duff (2009) model of AUDITQUAL to hypothesize and measure the audit quality. The result is that higher-order audit quality factors of relationship (via the expertise dimension) and service qualities (via the responsiveness to client needs dimension) are associated with auditor retention and are worthy of attention by audit firms in order to enhance client commitment and their likelihood of being retained as an incumbent auditor (Butcher et al., 2012).

This study uses the model proposed by Butcher et al. (2012) to develop an audit quality model that influences the auditor retention of clients in Ho Chi Minh City.

3. METHODOLOGY AND DATA

3.1. Model and Hypothesis

3.1.1. Model

The study uses the Butcher (2012) binary regression model, with seven independent variables being auditing quality factors and one dependent variable representing the intention to maintain the current audit firm.

The binary logistic regression equation:

$$\text{Ln } [P(Y=1)/P(Y=0)] = B0 + B1X1 + B2X2 + ... + BjXi$$

Dependent variable:

Y: Audit retention = Clients' intention to retain or rotate the incumbent auditor as the dependent variable to reflect the dichotomous nature of the decision (Buthcher, 2012).

Independent variables from X1 to X7 are represented in Table 3 below.

Table 3. Definition of independent variables

Code	Variable	Definition
X1	Reputation	The standing the auditor enjoys in the market as a reputational intermediary.
X2	Capability	The ability of the auditor to conduct the work
X3	Assurance	Those processes the auditor has in place to assure a high-quality audit
X4	Independence	The objectivity and willingness of the auditor to report any breach in the client's accounting system
X5	Expertise	Possession of relevant specialist knowledge by the auditor
X6	Experience	The experience the auditor has with theauditee
X7	Responsiveness	The ability of the auditor to tailor their service to auditee needs

Source: (Duff, 2004 and 2009)

Initially, we used 48 quality audit attributes relating to audit service quality factors in order to measure seven audit service quality factors, which were employed by Butcher (2012) from audit service quality model of Duff (2009). Second, through preliminary survey with ten experts, we removed 10 attributes and

the remaining 38 attributes were used in the final questionnaires. The 10 attributes that were eliminated were related to the measurement of audit quality in the background of research in Australia with state-owned companies, and they did not match our specific research context in Vietnam.

3.1.2. Hypothesis

Based on the theory of service quality model and the proposed research model on the effect of audit service quality factors on clients' intention to retain audit firm as well as research results are referenced from the study of Butcher et al. (2012), Ismail et al. (2006), we expect the positive influence of quality factors on audit firm retention in view of the audit clients in Ho Chi Minh City.

Table 4. List of hypotheses

No.	Hypothesis	Definition
1	H1	The standing the auditor enjoys in the market as a reputational intermediary.
2	H2	The ability of the auditor to conduct the work
3	H3	Those processes the auditor has in place to assure a high-quality audit
4	H4	The objectivity and willingness of the auditor to report any breach in the client's accounting system
5	H5	Possession of relevant specialist knowledge by the auditor
6	H6	The experience the auditor has with theauditee
7	H7	The ability of the auditor to tailor their service to auditee needs

3.2. Questionnaire design and data collection

The questionnaire was designed in two parts:

- Part 1 is requested the general characteristics of the participants of the survey such as name, company, department, gender.

- Part 2A includes questions for the customer's perceptions for 38 audit service quality attributes to measure 7 audit service quality factors through the audit clients for fiscal year 2017. We use a seven-level Likert scale ranging from -3 (strongly disagree that the attribute would impact their perceptions of audit service quality) to +3 (strongly agree) in order to measure these contributes.

- Part 2B shows the question about the intention to keep the auditor firm for the 2018 financial statement with the value of 0 = not maintain the current auditor and appoint a new audit firm, 1 = continue to use audit services from the current auditing company.

Overall, in the 260 surveyed companies, most are limited companies with 200 companies (77%) and the remaining are 60 joint stock companies (33%).

In terms of characteristics of individuals filling the survey, they are mainly from accounting departments, with 203 accountants (78%). The number of people on the Board of Members or Board of Directors, Council members is 42 (16%) and the figures for Board of Supervisors / Internal Audit is 15 people (6%).

Regarding to gender, the survey respondents includes 158 females (61%) and 102 males (39%).

4. RESULTS AND DISCUSSIONS

4.1. Test of reliability coefficient and Exploratory factor analysis

4.1.1. Test of reliability coefficient

First, the study used data from the questionnaire with 38 audit service quality attributes to perform the reliability test of the scale. There are two criteria for evaluating the reliability of the scale: (1) Cronbach's

alpha equal to or higher than 0.6 and the observed variables have correlation coefficients less than 0.4 turns total will be eliminated.

After the first test of reliability coefficient, 6 attributed are removed and then the re-test of reliability coefficient we have 32 audit service quality attributes satisfied the conditions of the test.

Table 5. Test of reliability coefficient

Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Reputation: Cronbach's Alpha = 0.891940				
REP_1	1.44	19.506	.740	.869
REP_2	1.87	18.930	.746	.867
REP_3	1.60	18.836	.775	.856
REP_4	1.48	18.506	.786	.852
Capability: Cronbach's Alpha = 0.880913				
CAP_2	2.49	30.197	.640	.873
CAP_3	3.02	28.579	.759	.845
CAP_5	3.00	29.815	.748	.848
CAP_6	2.54	30.079	.674	.865
CAP_8	2.79	29.486	.760	.845
Assurance: Cronbach's Alpha = 0.797223				
ASR_1	3.01	42.996	.697	.850
ASR_2	3.20	44.889	.516	.873
ASR_3	3.16	44.066	.581	.865
ASR_4	3.05	41.160	.703	.848
ASR_5	3.06	42.761	.683	.851
ASR_6	2.98	42.169	.705	.848
ASR_7	3.05	42.423	.690	.850
Independent: Cronbach's Alpha = 0.747605				
IND_1	3.27	12.198	.655	.863
IND_2	2.68	12.125	.729	.833
IND_3	2.78	12.272	.747	.826
IND_4	2.99	11.629	.771	.816
Expertise: Cronbach's Alpha = 0.737986				
EXP_1	1.27	5.557	.533	.688
EXP_2	.67	5.325	.597	.610
EXP_3	.63	5.671	.558	.658
Experiment: Cronbach's Alpha = 0.797223				
EXPR_1	5.52	11.563	.534	.781
EXPR_2	5.67	9.189	.663	.721
EXPR_3	5.65	11.394	.533	.782
EXPR_4	5.63	9.616	.721	.689
Responsiveness: Cronbach's Alpha = 0.899768				

RES_2	2.86	42.246	.736	.881
RES_3	2.88	41.724	.728	.883
RES_4	2.84	43.117	.701	.888
RES_5	2.90	41.411	.745	.879
RES_7	2.95	39.940	.848	.856

4.1.2. Exploratory factor analysis

The 32 observational variables will continue to be tested for their correlation in groups. The criterion of the factorial analysis is that the KMO must be greater than 0.5 (Garson, 2003) and Barlett's test is significant at sig <0.05 to show that the factor analysis data is appropriate and between variables. correlated with each other. The result is KMO = 0.861> 0.5 and a sig value. = 0.00 (suggesting that an outright rejection of the hypothesis of correlation between the observed variables to 0 in total) has satisfied the test conditions.

In in the next step with rotated component matrix, the analysis results illustrate that seven factors are extracted at point eigenvalue is 1.334 > 1 and the variance extracted is = 68.453% > 50%. Therefore, these indicators are analysed and satisfactory results of this analysis meaningful.

Besides, based on EFA analysis results of factor rotation matrix using Varimax, seven audit quality factors with 32 variables used have factor loading of 0.5 or higher, therefore, meet the requirements should not rule out the scale variable.

Finally, the observed variables are grouped into 7 factors according to the original factors. Therefore, it is not necessary to perform the analysis of Cronbach's Alpha to assess the reliability of the scale factor with the new group.

4.2. Model and hypotheses testing

4.2.1. Model summary, validation and predictability

The reliability of the model to determine audit service quality factors affect clients' intention of audit retention in Ho Chi Minh City by examining the Chi-square, -2LL (Log Likelihood) and the significant level.

The purpose of Chi-square test is to evaluate how good the model is in predicting the dependent variable, specially, major choice in accounting. The higher value of Chi-square, the better tool in predicting a model. As result illustrated in Table 6, the Chi-square value of 149.871 represents a good indicator value that the model in our research is well predicted.

Table 6. Model Validation

Omnibus Tests of Model Coefficients				
		Chi-square	df	Sig.
Step 1	Step	149.871	7	.000
	Block	149.871	7	.000
	Model	149.871	7	.000

Additionally, conformance measurement of Binary Logistic model is based on -2LL value (-2 log likelihood). The value of -2LL is 144,720. This relatively small value indicates that the model has a good appropriate.

The Cox & Snell R Square and Nagelkerke R Square Coefficients are similar to the coefficients of R2 and R2 adjusted in linear multiple regression to account for the independent variables in the model, and this could explain how many percent of secondary variables that is, the intention of the clients to continue using current audit firms. The value of the Nagelkereke R Square is 0.438, which means the independent variables in the model can explain 43.8% of the model, while the remaining 56.2% will be explained by other factors.

Table 7. Model Summary

Model Summary			
Step	**-2 Log likelihood**	**Cox & Snell R Square**	**Nagelkerke R Square**
1	144.720[a]	.438	.646
Estimation terminated at iteration number 7 because parameter estimates changed by less than .001.			

The classification table demonstrates the predictability of the model. Accordingly, the predicted accuracy rate for clients who continue to use the CPI is 91.8% (178/174 true predictions) for clients changing the CPK is 66.7% (44/66 true predictions). In the whole sample, the predicted accuracy rate was 84.4%.

Table 8. Classification Table

Classification Table[a]					
	Observed		Predicted		
			Retention		Percentage Correct
			0	1	
Step 1	Retention	0	44	22	66.7
		1	16	178	91.8
	Overall Percentage				85.4
a. The cut value is .500					

4.2.2. Hypothesis testing and multivariate analysis

Based on the sig value, all the independent variables are less than 0.05 and the Beta coefficients of the independent variables are positive. We can conclude that independent variables have a positive effect on the dependent variable. All hypotheses about the positive effects of audit service quality factors on the intention to retain audit firm were accepted.

Table 9. Hypothesis testing result

Variables		Hypothesis	Beta of Xi	Sig.	Test result
Independent variables					
X1	H1	The standing the auditor enjoys in the market as a reputational intermediary.	0.419	0.045	accepted
X2	H2	The ability of the auditor to conduct the work	0.526	0.004	accepted
X3	H3	Those processes the auditor has in place to assure a high-quality audit	0.443	0.045	accepted
X4	H4	The objectivity and willingness of the auditor to report any breach in the client's accounting system	0.526	0.014	accepted
X5	H5	Possession of relevant specialist knowledge by the auditor	0.678	0.011	accepted

X6	H6	Possession of relevant specialist knowledge by the auditor	0.499	0.021	accepted
X7	H7	The ability of the auditor to tailor their service to auditee needs	0.722	0.000	accepted
Dependent variables			Mean	Retention	Rotation
Y		Audit retention of clients	0.75	194	66

Overall, 194 clients have intention to retain their audit firm (75%), while 66 clients opt for rotation current auditors. Because all coefficients of the independent variables are statistically significant (p value less than 0.05), we can conclude that all audit quality factors have positive effects on client's intention for audit retention.

The Beta value of Responsiveness variable is by far the highest (0.722) indicating that clients pay attention to the ability of customizing services for each client by audit firm. The Beta value of Expertise, Capability and Independent factors is 0.678, 0.526 and 0.526, respectively, which indicates that clients are also concerned in the professional competence of audit firms, the ability of auditors to perform work and auditor independence which is maintained throughout the audit process.

The remaining factors are the Assurance and Reputation with the coefficients of 0.443 and 0.419, respectively, demonstrating that clients are attracted to the assurance of auditing service and reputation of audit firm with the levels are not as high as the others.

4.2.3. T-test of differences between audit firm rotators and audit firm retainers

Table 10. T-test summary result

Factor	Client group	Number	Mean	Sig.	Mean Difference
REP	Rotation	66	-0.63	0.00	-1.56
	Retention	194	0.93		
CAP	Rotation	66	-0.13	0.01	-1.11
	Retention	194	0.97		
ASR	Rotation	66	-0.08	0.03	-0.79
	Retention	194	0.71		
IND	Rotation	66	0.00	0.00	-1.31
	Retention	194	1.31		
EXP	Rotation	66	-0.09	0.30	-0.69
	Retention	194	0.60		
EXPR	Rotation	66	1.27	0.00	-0.80
	Retention	194	2.08		
RES	Rotation	66	-0.85	0.00	-2.10
	Retention	194	1.25		

As discussed above, audit firm should improve their service quality to improve the ability of clients to continue using the service. However, it must be further studied that in a limited resource of every business, improving the quality of audits needs to focus on aspects in which their clients mainly perceived on. This is resolved by a t-test of mean differences between two client groups potential retainers which want to continue to employ their audit firm and rotators which prefer to rotate (rotators).

Butcher, et al. (2012), the difference in perception of quality factors between these two groups implies that, indicating that these factors had a greater influence on perceptions of audit service quality for retainers compared to rotators.

With 95% confidence interval, the sig value. <0.05 indicates that there is a difference in the two client groups at the quality factor audit. According to the results table, most of the factors are different between the two groups except for the Expertise factor. We can make comments as follows:

- In the group of clients intending to change audit firm, they all evaluate the negative mean, except for the factor of independence (mean value = 0). Clients intend to maintain auditors Clients who intend to maintain auditors perceive quite positive about audit quality factors (average value is positive). This implies that the higher value of the clients' perception on service quality, the more satisfied they are, resulting in loyal clients who want to continue using audit services from current firms.

The responsiveness factor has the most significant difference in the two groups of clients (Sig. = 0.00 <0.05). The retainer's response a significantly high mean of 1.25. However, the customer intending to rotate auditors evaluate this factor at a low level of -0.85, indicating that clients who have intention to change audit firm do not have a good estimation of auditors' ability to meet their service requirements. The mean difference is -2.10, which is highest in all factors.

Following this, the two factors of Reputation and Independence also differ significantly, with Sig value = 0 in each group, mean values of -1.56 and -1.31 respectively. However, regarding to independence factor, the client rotators group give a neutral valuation of this factor with the mean value = 0. The mean value is high because the group of retainers' mean value is 1.31).

Additionally, Capability and Assurance also differs between the two groups, but the mean difference is slightly lower (-1.11 and -0.79).

The Expertise factor does not illustrate a significant difference of 95% confidence interval, with sig value. = 0.3> 0.05.

4.2.4. Further discussions

Overall, the results give a similarity in the positive impact of quality factors on the ability of clients to retain audit services of current audit firms. This is in line with some other service quality research in Vietnam such as Phan Chi Anh et al. (2016).

Comparing to Butcher et al. (2012) in New South Wales - Australia, audit quality factors also have a positive effect on clients' intention of continuing appoint current auditing companies. Or in other words, if auditor want to maintain their audit clients, they should improve the quality aspects of their services. This result is correspondingly with Ismail et al. (2006).

In terms of comparison of perceived quality of service between two client groups, referring to the study by Butcher et al. (2012) in Australia, we can state comments as follows:

- This result is consistent with the results of Butcher et al. (2012) that the group having intention to continue use auditors perceive higher audit quality than the group of rotators.

- Outputs of these studies show that the difference between two groups due to differences in the valuation of audit service quality in terms of service response (Responsiveness) and professional (Expertise)

aspects. This means that the auditors and audit firm provide services which tailored to the needs of each client at a high level of expertise. In addition, the study in Vietnam showed a clear difference in the reputation factors, while two groups of Australian clients in Butcher (2012) study differed significantly in terms of performance service (Capability).

In other words, in order to maintain the customer, auditors and audit firms should pay attention first to the quality aspects that the customer wants to be served better in Ho Chi Minh City such as reputation and independence.

5. CONCLUSIONS, RECOMMENDATIONS AND LIMITATIONS

5.1. Conclusions

According to service quality models and the impact of service quality on customer loyalty, this paper proposes a suitable study model to explore factors of audit service quality in HCMC as well as the impact of these quality factors on clients' intention to retain incumbent audit firms in the next financial year. The model and scale of the study have also been adjusted by survey data.

This research found seven quality factors of the audit, and the positive influence of these factors on clients' intention of audit firm retention. There are seven factors discovered are reputation, capability, assurance, independence, expertise, experience and responsiveness. This implies that when clients perceive the higher quality of audit service, the ability of retention of audit firms will increase.

In seven identified audit quality service factors, there are six factors having difference in the perception of service quality between two groups of clients namely rotators and retainers. Three of the six factors have a significantly in audit service quality perceived between two groups are Responsiveness, Reputation and Independence. These are the quality aspects that auditors and audit firms should improve to retain their clients.

5.2. Recommendations

A few considerable recommendations occur from these paper results. The first suggestion is that academic researches should focus more on the perceptual aspects of auditing services from clients' perception besides the two groups of initial audit quality factors including technical competence and independence. In addition, the main reasons for companies wanting to change auditors are that clients have not been satisfied with the quality of service in terms of some aspects such as Responsiveness, Reputation and Independence so that auditors should prioritize the improvement of these service quality aspects to satisfy and retain existing clients.

5.3. Limitations and further studies

The shortcomings of this study are the limitation in sample size and study area. Further studies can survey a larger company quantity in other economic centres such as Ha Noi, Da Nang, Binh Duong, Hai Phong or over Vietnam to obtain more comprehensive research results. Other researchers could use surveys for more years about clients' perception on audit service quality factor instead of a financial year as this study to draw conclusions about changes in research results over several stages.

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Appendix 1. Audit service quality attributes
adjusted from Duff (2009) and Butcher (2012)

Subcategory	Code	No	Survey attribute
Reputation	REP_1	1	The audit firm tends to have decentralized offices rather than centralized offices
	REP_2	2	The overall reputation of the audit firm is positive
	REP_3	3	The audit firm has rarely been found negligent in lawsuits brought against it (alleging inadequate audit performance)
	REP_4	4	The size of the audit firm in terms of its total revenue and number of auditors is much larger than the average size in the region
Capability	CAP_1	5	The audit firm develops stringent time budgets for each audit area and expects its people to meet them
	CAP_2	6	The audit firm conducts a thorough study of the client's system of internal control
	CAP_3	7	The audit team members as a group always exercised due care throughout the engagement
	CAP_4	8	The personnel on the engagement below manager level have passed the professional bodies' exams
	CAP_5	9	The audit firm reports internal control deficiencies and the auditors' recommendations on internal control are useful
	CAP_6	10	The audit team members as a group have an adequate understanding of the operations of the council
	CAP_7	11	The audit team members conducted the audit fieldwork in an appropriate manner
	CAP_8	12	The audit firm makes extensive use of statistical techniques in conducting the audit
	CAP_9	13	The number of hours spent by the audit team to complete the audit (from the beginning of fieldwork to the audit report date) is commensurate with a quality audit.
Assurance	ASR_1	14	The audit firm actively encourages staff members to take courses and attend seminars in fields where the firm has major clients
	ASR_2	15	The audit firm has a high audit staff turnover rate
	ASR_3	16	Audit team members are rotated off the audit periodically
	ASR_4	17	Before accepting a new client, the CPA firm conducts a pre-engagement investigation and goes through risk control procedures including the conduct of a background search on senior management of the prospective client
	ASR_5	18	The work performed by inexperienced members of the audit team is supervised by the audit team manager
	ASR_6	19	The audit firm has strict guidelines on the procedures that must be completed before signing the audit report
	ASR_7	20	The audit report and work papers receive a second partner review
Independence	IND_1	21	The audit firm is skillful in devising acceptable accounting treatments for transactions that generate results that council management wants
	IND_2	22	The audit firm's attitude is one of a sceptic, not one of a client advocate
	IND_3	23	The audit staff assigned to the engagement have very high ethical standards
	IND_4	24	In all your dealings with the audit firm and individual audit team members, the audit firm and audit team members never engaged in any actions that would compromise its/their independence, either in fact or in appearance

Expertise	EXP_1	25	The partner assigned to the audit engagement is very knowledgeable about the industry
	EXP_2	26	The auditors assigned to the engagement are very knowledgeable about accounting and auditing standards
	EXP_3	27	The audit manager and supervisor assigned to the engagement are very knowledgeable about the industry
Experience	EXPR_1	28	The audit firm has been performing the audit for at least 2–3 years
	EXPR_2	29	The audit engagement partner has been on the audit for at least 2–3 years
	EXPR_3	30	The audit manager has been on the audit for at least 2–3 years
	EXPR_4	31	The audit supervisor has been on the audit for at least 2–3 years
Responsiveness	RES_1	32	The audit firm is agreeable to completing the audit by a date the client has set
	RES_2	33	There is frequent communication between the audit team and the council's audit committee
	RES_3	34	There is frequent communication between the audit team and council management
	RES_4	35	The audit firm keeps council management informed during the year about accounting and financial reporting developments that affect the council
	RES_5	36	The audit engagement partner and manager make frequent visits to the council during the conduct of the audit
	RES_6	37	The auditor adds value to the entity in terms of generating useful ideas for improvement
	RES_7	38	The external auditors co-operate with the internal auditors

Note: highlighted attributes are removed after the first test of reliability coefficient

DETECTING FRAUDS RELATED TO INVENTORY ITEMS ON FINANCIAL STATEMENTS OF NON-FINANCIAL COMPANIES LISTED ON VIETNAM'S STOCK MARKET

Ta Thu Trang* - Doan Thanh Nga**

ABSTRACT: *Inventories are considered to be material items and are often abused to commit fraudulent activities in preparing financial statements. The paper has used a combination of qualitative and quantitative research methods through a survey of 113 experienced auditors and SPSS software to conduct statistical description of fraud risk indicators (red flags) and effectively audit procedures to identify frauds related to inventory items in preparing financial statements of non-financial companies listed on the Vietnam's stock market.*

Keywords: *Fraudulent financial reporting, inventory, fraud risk indicators, audit procedures, non-financial companies listed on Vietnam's stock market.*

1. INTRODUCTION

According to the Association of Certified Fraud Examiners, annual financial loss for the total world product value caused by financial frauds is approximately $ 3.7 trillion (ACFE, 2012 and ACFE, 2014). In particular, fraudulent financial reporting is fraud causing damage with approximately 10 times more than misappropriation of assets. Surveys of professional associations found that inventories accounted for a significant proportion and were often abused by companies in making fraudulent financial reporting. Specifically, The Committee of Sponsoring Organizations of the Treadway Commission (**COSO**) has conducted two fraudulent investigations related to fraudulent financial reporting of listed companies. According to their statistic reports, Frauds involving overstatements of assets (including inventories) accounts for about 50% of fraud cases (COSO, 1999, COSO, 2010). In Vietnam, DFK Auditing Company has not detected inventory shortage of nearly 1,000 billion VND of Truong Thanh Furniture Corporation in 2016 (Minh Chau, 2016); A&C Auditing Company and E&Y Auditing Company did not detect any fraudulent behavior through transferring inventories with related parties to generate ficticious revenue of Vien Dong Pharmaceutical Company in 2008 and 2009 (Ngoc Thuy, 2011; Khanh Linh, 2011). Consequently, detecting fraud related to inventory items in preparing financial statements is a challenge for auditors. This leads to information risks for users of financial statements. This paper is intended to provide evidence of fraudulent risks related to inventory items on financial statements and supporting auditors in designing effective audit procedures to detect fraud and reduce audit risks for audit firms.

2. LITERATURE REVIEW

2.1. International researches

Internationally, there are some researches focused on the design of audit procedures for detecting frauds related to inventory items in financial statement audits. In particular, Moyes (1997), Owusu-

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Ansah et al (2002) proposed 56 audit procedures for fraud detection in inventory audit. Of which, there are 14 audit procedures which are the most effective procedures in detecting fraud, including reviewing transactions with related parties; monitoring of resolved exceptions to inventories; reviewing procedures in inventory physical examination; confirmation related to inventory; physical examination;… Then, there are 27 effective audit procedures at moderate level and 15 remaining audit procedures are not effective in detecting fraud. Alleyne et al. (2010), based on the research of Owusu-Ansah et al., conducted a testing of 56 audit procedures in detecting frauds related to inventory item. The result reveals that the most effective audit procedures were 21 audit procedures, which were much better than the procedures in the study by Owusu-Ansah et al. (2002). The author provides a number of highly effective audit procedures, such as: observation of the inventory counting, reconciliation between inventory list and counting result,… For audit procedures with moderate level of effectiveness, 9 auditing procedures (compared to 27 procedures in the Owusu-Ansah study) and 26 less effective audit procedures. However, the results of the study show that audit procedures collecting direct audit evidence (substantive tests) are more effective than audit procedures collecting indirect audit evidence (using documents of the audited entity).

2.2. Vietnamese researches

Research in Vietnam on evaluating fraudulent indicators and fraud detection procedures for inventory in financial statement audits is relatively limited. In particular, Dao Minh Hang (2016) conducted a research on inventory audit in financial audits at steel companies conducted by independent auditing firms. The author has made a combination of quantitative and qualitative research methods to assess the factors affecting inventory audits and the differences between auditing firm groups in practicing audit of inventory to enhance techniques of collecting auditing evidences and improving audit process for auditing inventories in financial statements audit. Nguyen Thi Lan Anh (2017) conducted a study on inventory audit in the audit of financial statements by independent auditors. In the study, the author proposes effective audit procedures based on 56 audit procedures provided by Moyes (1997), Owusu-Ansah et al. (2002), Alleyne et al. (2010). The author argues that highly effective audit procedures involve the search for direct evidence of fraudulent behavior from clients.

However, studies in the world and in Vietnam do not find out fraudulent indicators associated with inventory items, which will be a basis for designing effective audit procedures for detecting fraud related to inventory. Based on the research gap in the world and Vietnam, the authors conducted a combination of qualitative and quantitative methods to identify common fraudulent indicators associated with inventory items and effective audit procedures in identifying that fraudulent risk indicators.

3. THEORETICAL BACKGROUND

The fraudulent behaviors associated with inventory in preparing financial statements are diverse and complex. Specially, for companies listed on the stock market, inventory is often overstated in value and quantity of inventory.

• *Exaggerating inventory value:*

Fraudulent behaviour associated with inventory overstatements is often done in ways, such as fictitious inventories and the use of accounting estimates.

Firstly, fictitious inventories: Counterfeiting inventory behaviours include creating fictitious inventory counting records, fictitious invoices in the purchase process but actually, the goods could be borrowed from

another entity or the goods are not in stock; performing asset transferring among related parties by issuing invoices but the actual goods may still exist in the third party warehouses.

Secondly, the asset value is overstated by accounting estimates to exceed inventory value. Particularly, the accountant strives to postpone allowance for decline in inventories to help the company reducing expense and overstating assets value.

Thirdly, overstating purchased inventory through trading. For example, companies intentionally exaggerate the unit price or made a round tripping of inventory with subsidiaries or related parties to increase the purchasing price of inventory or the companies made a change in the method of calculation of dispatching inventory price over periods to increase or decrease inventory value.

• *Exaggerating inventory quantity:*

Fraud related to exaggerating inventory quantity by changing the quantity of inventories in counting records, organizing inventory counting twice for the same inventory at different times, overblowing quantity of goods in transit, receiving inventory in consignment but recording as company's inventory, exaggerating the quantity of inventory consigned to the third parties.

By assessing method of committing fraud related to inventory, auditors could realize some fraudulent risk indicators, such as: there are large number of transactions of trading inventory from related parties at the end of accounting year, or there is a phenomenon of selling inventory to related parties at the end of the accounting year and re-purchase of inventory at the beginning of the next accounting year; the average balance and number of days of storage increased dramatically in comparison with previous year; the ratio of inventory balance exceeded inventory norm; the company has a large quantity of re-purchasing inventory after the balance sheet date; regularly changing the accounting policy of allowance for decline in inventories, regularly changing the method of calculating the price of dispatching inventory.

Regarding to form of fraud, audited entities often leave fraudulent indicators on items in financial statements. When the auditor identifies fraudulent indicators, it is necessary to response to these fraudulent risk indicators at management assertion level and at financial statements as a whole level. Specially, for fraud risks in preparing financial statements, the auditor should increase performing substantive tests. In this study, based on fraud risk for inventory items, the authors design audit procedures for detecting fraudulent actions associated with overstating the value and quantity of inventory.

4.   RESEARCH METHODS

The authors use a combination of qualitative and quantitative methods. For qualitative methods, the authors conducted semi-structured interviews for 6 experienced auditors with more than 10 years of experience to identify common fraudulent indicators for inventory items and effective audit procedures in detecting fraud in preparing financial statements of non-financial companies listed on Vietnam's stock market. Based on a review of previous studies in the world and in Vietnam, the authors conducted a quantitative research by sending 400 questionnaires to surveyed auditors with auditing experience for listed companies. The number of questionnaires received was 113, equivalent to 113 respondents. The experience of auditors surveyed mainly equals to 5 year experiences or more, accounted for 80% of the total number of questionnaires received. The authors have designed questionnaires and measured the prevalence of fraudulent indicators and the effectiveness of audit procedures through the Likert scale from 1 to 5 points (1-point is completely unpopular/ completely ineffective, 2-point is not common/ ineffective, 3-point is common/ effective (moderate), 4-point is very popular/ very effective, 5-point is completely popular/ completely effective).

5. RESEARCH RESULTS

5.1. Descriptive statistics results of fraudulent indicators for inventory items

Through the results of the survey, the authors point out the common fraudulent indicators of overstating inventories as follows:

The most important and common fraudulent risk is the large quantity or irregular purchase of inventory from related parties at the end of accounting period or the occurrence of sale and re-purchase of inventory with related parties, which has the highest average score (3.57 points). The average balance and number of days of storage increased dramatically at the end of accounting period, and the ratio of inventory balance exceeded inventory norm whereas many inventories did not fluctuate over many accounting periods have the same average score (3.25 points). The average rating is the regularly changing the accounting policy of allowance for decline in inventories, which has average score of approximately 3 points. The score of the indicator "regularly changing the method of calculating the price of dispatching inventory" was the lowest (2.83 points).

Table 1. Statistical description of fraudulent indicators of overstating inventory items

Fraudulent indicators of overstating inventory items	Number of observations	Minimum score	Maximum score	Average value	Standard deviation
The large quantity or irregular purchase of inventory from related parties at the end of accounting period or the occurrence of sale and re-purchase of inventory with related parties	113	1	5	3.57	0.990
The average balance and number of days of storage increased dramatically at the end of accounting period	113	1	5	3.25	0.915
The ratio of inventory balance exceeded inventory norm whereas many inventories did not fluctuate over many accounting periods	113	1	5	3.25	1,061
The company has a large quantity of re-purchasing inventory after the balance sheet date	113	1	5	3.20	1.054
Regularly changing the accounting policy of allowance for decline in inventories	113	1	5	2.96	1.243
Regularly changing the method of calculating the price of dispatching inventory.	113	1	5	2.83	1.273
Valid N (listwise)	113				

(Source: Results from the authors' study)

5.2. Descriptive statistics results of designing effective audit procedures for detecting fraud related to inventory items

Based on fraudulent indicators of fraud, auditor designs and performs effective audit procedures to detect fraud related to inventories, as follows:

Firstly, effective audit procedures to detect fraud related to overstatement of inventory purchase price

Carefully reconciling purchase prices on contracts, purchase invoices of related parties with those of independent third parties in the same industry is an important audit procedure (3.6 points). The transfer pricing between parent companies and subsidiaries or special purpose enterprises is a common phenomenon in listed companies. Confirmation to suppliers is evaluated at low level of effectiveness (3.37 points) because the companies has collusion with related parties to transfer losses or profits to subsidiaries or special purpose enterprises. Therefore, the technique of sending a confirmation letter is not evaluated as effective audit procedure in this case.

Table 2. Descriptive statistics results of the effectiveness of audit procedures for detecting fraud related to exaggerating inventory purchasing price

Audit procedures for detecting fraud related to exaggerating inventory purchasing price	Number of observations	Minimum score	Maximum score	Average value	Standard deviation
Reconciling purchase prices of transactions with related parties with those of independent third parties in the same industry to identify transfer pricing indicators.	113	2	5	3.60	0.801
Checking purchasing prices on contracts and reconciling purchase prices on contracts with purchasing invoices, and with independent purchasing prices on the market	113	1	5	3.49	1.044
Confirmation to suppliers	113	1	5	3.37	1.032
Valid N (listwise)	113				

(Source: Results from the authors' study)

Secondly, effective audit procedures to detect fraud related to round tripping of inventory

The nature of this transaction is that the company performs round tripping of inventory with related parties or special purpose enterprises and then the parent company re-purchases. The parent company uses its subsidiaries or special purpose enterprises to sell inventory at high prices or re-purchases or re-leases them at low prices. Therefore, auditors appreciated the effectiveness of the procedure of checking the selling price and re-purchasing to identify transfer pricing risk in these transactions (3.73 points). The audit procedure of reconciling contract prices with price lists approved by the board of directors for asset re-purchase and verifying information on related parties regarding the source of ownership of inventory to determine the nature of the sale and re-purchase of inventory (over 3.6 points). However, physical examination of available inventory, checking code of inventory which was sole just prior to the balance sheet date, and checking the asset code that was sole right after the balance sheet date; verifying the customer list and supplier list to identify any coincidence in buying and selling the same inventory are procedures which were assessed at lower level of effectiveness (3.5 points). Due to complication of these transactions and inventory is transferred to many subsidiaries or special purpose enterprises (there is little transaction between only two companies), especially, for inventory items that are frequently sold and re-purchased, it is difficult for auditors to identify this fraud of round tripping.

Table 3. Descriptive statistics results of audit procedures for detecting fraud in round tripping of inventory with related parties

Audit procedures for detecting fraud in round tripping of inventory with related parties	Number of observations	Minimum score	Maximum score	Average value	Standard deviation
Checking the selling price and re-purchasing to identify transfer pricing risk	113	1	5	3.73	0.877
Reconciling contract prices with price lists approved by the board of directors for asset re-purchase transactions	113	2	5	3.64	0.942
Verifying information on related parties regarding the source of ownership of inventory to determine the nature of the sale and re-purchase of inventory	113	1	5	3.61	0.942
Verifying the customer list and supplier list to identify any coincidence in buying and selling the same inventory	113	2	5	3.50	0.821
Physical examination of available inventory, checking code of inventory which was sole just prior to the balance sheet date, and checking the inventory code that was sole right after the balance sheet date	113	2	5	3.50	1.042
Valid N (listwise)	113				

(Source: Results from the authors' study)

Thirdly, effective audit procedures to detect fraud related to exaggerating inventory quantity

All audit procedures in detecting exaggerating inventory quantity are assessed at high level of effectiveness (over 3.5 points). In which, confirmation with third parties about inventory in consignment and collecting evidence of the existence of the third party (3.69 points) and checking goods returned to the supplier right after the end of the accounting year (3.62 points) are assessed at high level of effectiveness. However, implementation of additional procedures in the process of inventory physical examination and verifying documents proving the ownership of the inventory, separation between inventory owned by the company and those under third parties' ownership are only assessed at an average score of 3.52 points.

Table 4. Descriptive statistics results of the effectiveness of audit procedures for detecting fraud related to exaggerating inventory quantity

Audit procedures for detecting fraud related to exaggerating inventory quantity	Number of observations	Minimum score	Maximum score	Average value	Standard deviation
Confirmation with third parties about inventory in consignment and collecting evidence of the existence of the third party	113	1	5	3.69	0.952

Checking goods returned to the supplier right after the end of the accounting year without appropriate reason	113	1	5	3.62	0.888
Physical examination without notice of inventory at one location or multiple locations on the same day.	113	1	5	3.59	1.066
Implementing additional procedures in the process of inventory counting observation, even hiring experts to perform the valuation of inventory with specific technical characteristics.	113	1	5	3.52	0.920
Verifying documents proving the ownership of the inventory, separation between inventory owned by the company and those under third parties' ownership	113	1	5	3.52	1.053
Valid N (listwise)	113				

(Source: Results from the authors' study)

Fourthly, effective audit procedures to detect fraud related to allowance for decline in inventories

Auditors should collect more outside information, such as market selling price at the time of evaluation, market forecasts of agencies and market news to estimate the allowance rate for decline in inventories (3.63 point). However, substantive analytical procedures and hiring experts for supporting in constructing an estimation model to allow for decline in inventories were assessed with an average score of 3.29 points.

Table 5. Descriptive statistics results of the effectiveness of audit procedures for detecting fraud related to allowance for decline in inventories

Audit procedures for detecting fraud related to allowance for decline in inventories	Number of observations	Minimum score	Maximum score	Average value	Standard deviation
Collecting information related to market selling price at the time of evaluation, market forecasts of agencies and market news to estimate the allowance rate for decline in inventories	113	1	5	3.63	0.876
Checking for changes in accounting policies related to judgments and assumptions of accounting estimates. Comparing the changes in company's accounting policies with current regulations, and with industrial targets.	113	1	5	3.53	0.917
Performing substantive analytical procedures, even hiring experts for supporting in constructing an estimation model to allow for decline in inventories	113	1	5	3.29	0.942
Valid N (listwise)	113				

(Source: Results from the authors' study)

CONCLUSION

The results of the investigation on fraudulent indicators and identifying the effective audit procedures for detecting frauds associated with inventory reveals that auditor has performed flexibly audit procedures, such as inspection, confirmation, analytical procedures,… without following standard audit program rigidly. Based on the fraudulent associated with inventory, the research results support auditors and audit firms not only in designing a system of fraudulent indicators at management assertion level but also in designing audit program, including key audit procedures for each fraudulent indicators. Research results are also important training materials for new audit assistants in detecting frauds associated with inventory items on financial statements. Based on red flags at management assertion level, auditor must assess fraud risk at management assertion level and design effective audit procedures to detect frauds related to inventory.

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THE EFFECT OF STATE-OWNERSHIP AND PROVINCIAL COMPETITIVENESS ON FIRM PERFORMANCE: CASE OF VIETNAM

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ABSTRACT: *This study investigates the relationship between state-ownership and firm performance as well as the role of the provincial competitiveness in Vietnam by using a sample of 506 listed non-financial firms from 2008 to 2015. Using the two-step system GMM, the study compares the influence of state-ownership on firm performance in low and high provincial competitiveness. Our findings indicate that state-ownership, as well as provincial competitiveness, is positively related to firm performance. Moreover, extended results show that the government should strongly privatise (reducing the level of state-ownership to under 25%) or highly centralised (holding the level of state-ownership ≥ 75%) to enhance the firm performance, besides the improving the provincial competitiveness. In addition, the characteristics of the firm such as size, debt ratio, tangible asset level or growth are found to have statistically significant connections to firm performance. Our research implies that: (1) the government should continuously improve the provincial competitiveness, (2) the government should strongly privatise commercial firm and hold high levels of state-ownership in strategic enterprises.*

Keywords: *Firm performance, State-ownership, Provincial competitiveness, Vietnam*

1. INTRODUCTION

Vietnam is a country which has a transforming economy with reform of institutional environment and public governance, including the development of a market economic mechanism with the socialist-oriented and multi-sector economy. In the past, the Vietnamese economy used to be a centrally planned economy with the considerable influence of the state sector, especially state-owned enterprises (SOEs). SOEs, in a socialist-oriented economy, has been received considerable favour of the state in the support finance as well as policy because they are considered to have an important role in the economy. However, privatisation has become a considerable phenomenon in Vietnam to promote economic growth and enhance social security. Since the 1986 reform, the rate of state property among SOEs in Vietnam has significantly declined. The government has conducted a privatisation process to transform SOEs to joint-stocks enterprises with taking part of foreign or private investors. In the 2011 – 2016 period, there are over 570 privatised enterprises with VND 797,000 billion of firm value, in which the state capital is VND 214,000 billion. In 2017, 69 enterprises are privatised, with VND 161,000 billion of the chartered capital, in which the state-ownership is VND 85,365 billion. According to General Statistics Office reports, the number of SOEs continuously decrease due to the government's efforts to privatise SOEs[1]. However, the state still plays a significant role

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[1] Source: General Statistics Office of Vietnam reports.

in many commercial firms as well as financial institutions through the rate of state-ownership. Although the proportion of state has reduced sharply in recent years, it has been considered to be high. Excluding the firms in strategic industries such as electricity, water, defence, the government almost have shares in some commercial or financial firms. The main reason is that state-ownership often is considered as the "tactful" tools for intervention and orientation of the government (Najid & Rahman, 2011; Kang & Kim, 2012; Ben-Nasr *et al.*, 2015). However, the efficiency of SOEs is still a topic which is argued in Vietnam's context.

Firm performance is affected due to the unequal treatment of public officials between the public sector and non-public sector in the protection of property rights and allocation of resources (Song *et al.*, 2016). Criticism points that firm performance, with a high proportion of state-ownership, often relies on political and financial support of government to overcome their problems, and it is inequitable with others (Zhou *et al.*, 2016). However, it can not disclaim that the state role has a significant meaning, particularly in controlling and implementing social-economic objectives. In the world, studies relating to state-ownership and firm performance has been not consistent. On the one hand, state-ownership is considered that it could enhance firm performance (B. B. Jiang *et al.*, 2008; Le & Chizema, 2011). According to "too-important-to-fail" view, most investors believe that the state-relevant firms are received financial and political aids by state. Moreover, state-owned firms are often monitored strictly to control capital and firm's efficiency. Besides that, SOEs often have the "*helping hand*" through the interactive channel with government officials and receive financial support and business opportunities.

On the other hand, many studies indicate state-ownership affect negatively on firm performance (Shleifer, 1998; Qi *et al.*, 2000; Abramov *et al.*, 2017) and privatisation will enhance firm performance and their market value (Megginson & Netter, 2001; Kang & Kim, 2012). Since the shareholder of SOEs is public and the legal representative persons are generally appointed by the government, they often focus on the objectives of politicians rather than maximise enterprise efficiency (Abramov *et al.*, 2017). Furthermore, the managers of SOEs believe that the accounting losses will be covered by governmental funds. This will decrease the motivation of SOEs managers to ensure that firms are well managed. In diversity results, many studies find that the association of state-ownership and business efficiency are non-linear, such as U-shaped relationship (G. Wei, 2007; Ben Rejeb Attia *et al.*, 2018). It means that the firm performance will increase when the government owns the low or high proportion in some extent.

In recent years, a new approach to explain different results is the influence of characteristics of the economy and institutional environment, especially in transition economies (Ben-Nasr *et al.*, 2015; Song *et al.*, 2016; An *et al.*, 2016). It is considered to have a significant impact on firm performance. The institutional environment, which is known as particular rules or principles, could have an effect on firm's operating and it could improve or reduce their efficiency in the marketplace. Verrecchia (2001) suggests that transparency and the quality of the disclosed financial information are essential in reducing asymmetrical information, while Biddle and Hilary (2006) considers that institutional environment will reduce the firm's cost of equity and improve the efficiency of investment decisions. Y. Jiang and Yan (2012) find that the efficiency of firms is higher in the higher the level of the institutional environment. In Vietnam, the Provincial Competitiveness Index (PCI) has been published annually since 2005. It is the index of provinces and cities regarding the quality of public governance and the building of business environment to the development of firms.

Thus, follow up on previous research, we focus on three main aspects of this study: (1) The impact of state-ownership on firm performance (2) The effect of institutional environment, as provincial competitiveness, on firm performance; (3) We check the robustness of our result by using quantile of the state-ownership proportion in low or high provincial competitiveness. Our research uses financial data of

firms which are listed on the Vietnamese Stock Exchange, and we also exclude enterprises in financial industries. Our motivation is to clarify the role of state-ownership in commercial firm performance because these studies in Vietnam are still few and limited. In Vietnam, Quang and Xin (2014) found a positive relationship between state-ownership and firm performance (proxy by ROA and ROE), while Phung and Mishra (2015) investigated there was a convex relationship between state-ownership and firm performance (Tobin). However, relevant studies are still rare and inconclusive, without consideration about the role of institutional environment. Moreover, Vietnam is transforming economic from the centrally planned economy with state-related characteristics. Therefore, this study is expected to provide empirical evidence for the association between state-ownership, institutional quality and firm performance. Following the Introduction, the rest of the study is structuralised as follows: Section 2 reviews the prior literature and empirical studies. Section 3 gives the hypotheses and research methodology. Section 4 illustrates the data and discusses the results. Section 5 gives the conclusions and recommendations.

2. LITERATURE REVIEW

2.1. The association between state-ownership and firm performance

According to Arosa *et al.* (2010), there are three particular factors of ownership structure which prior studies have often focused on ownership concentration, insider ownership, and owner identity. Ownership structure and firm performance have been the intense discussion in the corporate finance literature. Berle and Means (1932) which proves an inverse relation between dispersed shareholders and firm performance, namely as agency theory. On the one hand, the dispersed shareholders are unable to exert any influence on the firm managers who control the affairs of firm. On the other hand, managers cannot be motivated to act in the best interest of owners because of holding a minimal share of firm's profit. Instead, they pursue their objectives at the cost of owners' wealth. Conversely, concentrate shareholders could influence the management board and interfere with the decision-making process of managers. Ownership structure is typically known as different groups of shareholders, such as state shareholders, private or foreign shareholders.

The prior studies on the relationship between state-ownership and firm performance have been inconsistency. In a negative association, Jia *et al.* (2005) confirms that firm performance is negatively correlated with state-ownership of Chinese listed firms on the Hong Kong stock exchange. Xu and Wang (1999) and Qi *et al.* (2000) suggest that there is an adversely related between state-ownership and firm performance, as presented by ROA, ROE and MBR, for Chinese listed firms. The reasons are included the separation between the government and managers who do not have the incentive to maximise value for shareholders (Qi *et al.*, 2000; Le & Chizema, 2011; Kang & Kim, 2012). Other reasons include political interference, difficulties in administration and supervision, lacking necessary information and administration skills and needed independence of state representatives who are appointed by the government through political connections (Shleifer, 1998; and Bhatti & Sarwet, 2011). Moreover, state representatives try to achieve social goals and short-term political objectives rather than maximising profits (Abramov *et al.*, 2017). Driffield and Du (2007) find that privatisation in China is essential for generating productivity growth, promotes to cost-effectiveness and innovation.

In contrast view, there has been empirical evidence of the positive relationship of state-ownership and firm performance (B. B. Jiang *et al.*, 2008; Le & Chizema, 2011; Najid & Rahman, 2011). Estimating with Chinese listed firms, Tian and Estrin (2008) find that state-ownership has a positive association with return

on asset (ROA), while Chen *et al.* (2006) also give empirical evidence to support a positive relationship with return on sale (ROS). The reasons are cited that the government has many administrative tools to ensure the performance of state-related firms (e.g. state audit office or government inspectorate ministry), and they will severely punish representatives who have wrong behaviours. Moreover, the government, as a strategic shareholder, will support firms with financial and political resources through a "*helping hand*" (Shleifer, 1998; Le & Chizema, 2011). Further, state-ownership is considered a strategic asset which could bring advantages conditions (political, social, or competitive advantages that managers may be able to extract from a state-owned relationship) for better firm performance (B. B. Jiang *et al.*, 2008; Huang & Boateng, 2013). State-ownership also transmits a signal that these enterprises are supported by the government and bring the belief that the government will help firms to run out of collapse (Najid & Rahman, 2011).

As the concern, in countries with restructuring such as China, the majority of empirical results often support the hypothesis: high concentration of state-ownership would positively affect the firm performance or firm value (B. B. Jiang *et al.*, 2008; Tian & Estrin, 2008; Hess *et al.*, 2010; Le & Chizema, 2011; Yu, 2013). Thereby, we suggest that the influence of state-ownership in Vietnam is similarly in China, where the market is defined as a socialist-oriented market with the crucial role of SOEs. Therefore, we support our initial hypothesis as follows:

Hypothesis 1: state-ownership is positively related to firm performance.

2.3. The relationship between state-ownership, provincial competitiveness and firm performance

The empirical studies about state-ownership and firm performance or firm value have been intricate, and they almost depend on agency theory. This theory assumes that state-ownership is separated from state interference and market-oriented as well as political interaction (Green & Liu, 2005). These studies, however, have to upon other aspects to describe the "unexpected" outcomes in the findings (Z. Wei *et al.*, 2005). Therefore, we consider that applying agency theory is not sufficient in the analysis the relationship between ownership and performance, especially in insufficient market-oriented, like Vietnam or China; and it is the main reason for the inconclusiveness.

Institutional environment, in recent years, has become a connecting factor. Organizations have reacted to changes in the business environment, such as laws and regulations; and it is a way to respond to externally coercive pressures (Aguilera & Jackson, 2003). Cohen *et al.* (1983) and Ho and Michaely (1988) show that high quality of business environment would help to minimise problems about information asymmetry, transaction costs and risks while improving market efficiency, asset allocation, and protecting property rights. Thereby, the efficiency of the firm operation would be enhanced. This view was supported by Kang and Kim (2012) who argued that a weak institutional environment and regulatory framework could lead to a significant dropping output, asset-stripping of insiders, rent-seeking, and delays the future reforms.

Moreover, previous studies have suggested that the impacts of ownership structure on the firm operation are unclear, depending on characteristics of the economy and institution, especially in transition economies (Ben-Nasr *et al.*, 2015 and Song *et al.*, 2016). For instance, in developed countries or emerging economies such as Korea, New Zealand, U.S. or European countries, many studies show the results which prove that the relationship between state-ownership and firm activities are inefficient (Kim, 2011; Chan *et al.*, 2016). La Porta *et al.* (1999) find that the enterprises there will have a more dispersed ownership structure when the investor protection is stronger, and the efficiency of law enforcement is improved in a region or a country. H. Jiang *et al.* (2018) finds that the firm performance is positive in countries with high institutional environments by using financial data from the Wharton Compustat Global database for the period 2001–2015.

In Vietnam, to measure the quality of the institutional environment, the Provincial Competitiveness Index (PCI) has been published annually since 2005 to measure the quality of public governance and the building of business environment to the development of firms of provinces and cities. The overall PCI score is calculated by a weighted sum of sub-indices, in which weights are determined by the importance of each sub-index in assessing various aspects of public governance and development of the business environment in each province. We support that firm performance will increase in a good institutional environment, where transparency and accountability are highlighted. Thus, we support our second hypothesis as follows:

Hypothesis 2: The institutional quality will have a positive impact on firm performance.

$$Firm\ performance_{it} = \beta_0 + \beta_1 Firm\ performance_{it-1} + \beta_2 State\ ownership_{it} +$$
$$\beta_3 Provincial\ competitiveness_t + \gamma Control variables_{it} +$$
$$\varepsilon_{it} \qquad (1)$$

$Firm\ performance_{it} = \beta_0 + \beta_1 Firm\ performance_{it-1} + \beta_2 State\ ownership_{it} + \beta_3 Provincial\ competitiveness_t + \gamma Control variables_{it} + \varepsilon_{it}$

Dependent variables:

Firm performance is generally measured by (i) Return on Assets – ROA and (ii) Return on Equity – ROE of firm i in year t (Yu, 2013; Abramov *et al.*, 2017; Ben Rejeb Attia *et al.*, 2018).

Independent variables:

State-ownership is the proportion of shares owned by the state, including shares of state institutions (Yu, 2013; Abramov *et al.*, 2017). The level of state-ownership is disclosed in Vietnamese listed firm' financial reports.

Provincial competitiveness is the variable to measure the quality of the institutional environment. The Provincial Competitiveness Index (PCI) has been conducted and announced by Chamber of Commerce and Industry of Vietnam (VCCI) and the U.S. Agency for International Development (USAID)-funded Vietnam Competitiveness Initiative (VNCI), managed by DAI, with a substantial contribution by VNCI partner The Asia Foundation (TAF). We use PCI to estimate the effects of the quality of locally institutional environment on firm performance, according to Malesky and Taussig (2008). In this studies, we use the PCI of the province where the firms registered their business.

To avoid the bias problem in regression, we also add a set of other control variables to clarify the correlation between firm performance and the independent variables. They are natural logarithm of the firm's total assets (SIZE), the difference of revenue between t and t – 1 (GROWTH), the ratio of Property, Plant and Equipment and Total asset (PPE) and the level of using short-term debt in operating (DEBT). These variables are used widely in previous studies (Hess *et al.*, 2010; and Yu, 2013). All description and statistic of variables are presented in Table 1.

4. METHODOLOGY AND DATA

4.1. Methodology

This study is approached by the dynamic panel data model. Panel data has been preferred because it combines both time series and cross-sectional observations (Brooks, 2008). Our model in Equation (1) illustrates the dynamic model with a lagged dependent variable, and they could because the endogenous problem and their coefficients may be severely biased. Moreover, the prior empirical study of Ben Rejeb Attia *et al.* (2018) indicated that firm profitability (ROA or ROE) and state-ownership might be endogenous. Fixed-effect (FE) and random-effect (RE) models are not able to deal with the endogenous problems, and the results may be biased. Therefore, we apply the two-step system GMM (Generalized Method of Moments) estimation method. GMM can tackle endogeneity, heteroscedasticity, and serial correlation (Arellano &

Bond, 1991). Moreover, the two-step system GMM is more effective than the one-step estimator due to using a sub-optimal weighting matrix, but it generates the bias of uncorrected standard errors when the number of instruments is extraordinary (Blundell *et al.*, 2000).

Hansen or Sargan test of overidentifying restrictions is considered to ensure the robustness of GMM estimation. However, in a two-step system GMM, Hansen test is more reliable than the Sargan test because Sargan's statistic is a particular case of the Hansen J test under the assumption of homoscedasticity. Thus, for the robustness of GMM, the Sargan test statistic is inconsistent. The Arellano-Bond test for autocorrelation has a null hypothesis of no autocorrelation and is applied to differenced error terms. The test for AR (1) process in first differences usually rejects the null hypothesis, whereas the test for AR (2) in first differences is more important because it will detect autocorrelation in the levels (Roodman, 2009).

4.2. Data and Descriptive Statistics

We use the panel data of 506 firms which are listed Vietnamese exchanges (Ho Chi Minh Stock Exchange and Hanoi Stock Exchange) for 9 years from 2008 to 2015. Our sample does not include non-profit and financial firms, and firms with insufficient financial data. After excluding, our sample is a set of financial data of 506 firms with 4,213 observations. The panel is unbalanced, with some firms having more observations than others. However, twostep system GMM method is suitable for estimating unbalanced panel.

Table 1 shows the mean, standard deviation, minimum, median and maximum value of variables. For the firm performance variable, the mean of the ROA and ROE are 6.92% and 13.20%, and their standard deviation is 8.45% and 21.26%, respectively. It implies that there are significant differences in firm performance among Vietnamese firms. The mean of the overall weighted average PCI is 59.77% while the max value and min value are 39.78 and 77.20, respectively. The STATE has the mean at 27.2% and standard deviation at 23.90% in our sample.

Table 1: Definition and descriptive statistic of variables

Code	Definition	Obs	Mean	Std. Dev.	Min	Max
ROA	Net income / Total asset	4213	0.069	0.085	-0.646	0.784
ROE	Net income / Equity capital	4213	0.132	0.213	-7.836	0.982
SIZE	The natural logarithm of the firm's total assets	4213	26.678	1.405	21.370	31.906
PPE	Property, Plant and Equipment / Total asset	4213	0.282	0.212	0.000	0.978
DEBT	Short-term debt / Total debt	4213	0.622	0.390	0.000	1.000
GROWTH	Revenue in this year /Revenue in last year	4213	0.136	0.445	-4.643	7.070
STATE	The proportion of the state fund on shareholder fund at the end of the year	4213	0.272	0.239	0.000	0.967
PCI	The Provincial Competitiveness Index.	4213	59.768	4.390	39.780	77.200

Table 2 shows the matrix of correlation among the variables. ROA and ROE have a positive association with STATE, PCI at 1% significance level, while SIZE, PPE and DEBT show a negative relationship with ROA at 1% significant level. We realise that SIZE and PPE have an adverse correlation with ROE, but they are an insignificant statistic.

Table 2: The correlation matrix

	ROA	ROE	STATE	PCI	SIZE	PPE	DEBT	GROWTH
ROA	1							
ROE	0.69***	1.00						
STATE	0.11***	0.11***	1.00					
PCI	0.08***	0.06***	0.001					

SIZE	-0.07***	-0.02	0.06***	0.11***	1.00			
PPE	-0.03*	-0.02	0.11***	-0.11***	0.09***	1.00		
DEBT	-0.18***	-0.08***	-0.16***	0.03*	0.04**	-0.28***	1.00	
GROWTH	0.18***	0.20***	-0.05***	-0.10***	0.02	0.01	-0.04***	1.00

Notes: (*), (**), and (***) indicate significance of 10%, 5%, and 1%, respectively.

5. RESULTS AND DISCUSSION

Table 3, Table 4 and Table 5 show the main results of GMM estimations. It can be seen that the p-values of AR (2) test and the p-value of the Hansen test are insignificant statistics. It indicates that the GMM method is appropriately used, and estimation results are robust, reliable and unbiased. Because of lagged variable, the number of observation dropped from 4213 to 3707.

5.1. The effect of state-ownership and provincial competitiveness on firm performance

To examine the role of state-ownership and provincial competitiveness on firm performance, we estimate from the model (1) to (4), respectively. In model (1) and (2), we estimate the impact of STATE on firm performance, represented by ROA and ROE. In model (3) and (4), we estimate the effects of provincial competitiveness on firm performance.

Table 3: The relationship between state-ownership, provincial competitiveness and firm performance

Dependent variable	ROA (1)	ROE (2)	ROA (3)	ROE (4)
ROA (-1)	0.313***		0.330***	
	(7.59)		(8.08)	
ROE (-1)		0.270***		0.289***
		(8.24)		(8.90)
STATE	0.103***	0.203**	0.121***	0.222**
	(2.69)	(2.10)	(3.17)	(2.36)
PCI			0.001**	0.004***
			(2.47)	(3.07)
SIZE	-0.036***	-0.092***	-0.035***	-0.089***
	(-5.11)	(-5.69)	(-5.07)	(-5.56)
PPE	-0.110***	-0.205***	-0.103***	-0.182***
	(-4.09)	(-3.35)	(-3.98)	(-3.03)
DEBT	-0.047***	-0.125***	-0.041***	-0.109***
	(-3.04)	(-3.64)	(-2.67)	(-3.20)
GROWTH	0.057***	0.131***	0.052***	0.116***
	(8.50)	(8.10)	(7.53)	(7.14)
CONSTANT	1.003***	2.633***	0.898***	2.264***
	(5.41)	(6.01)	(4.72)	(5.10)
AR (1) test	0.000	0.058	0.000	0.059
AR (2) test	0.440	0.278	0.556	0.279
Hansen test	0.658	0.709	0.640	0.803
Wald chi2	314.22	340.02	329.71	365.84
Prob > chi2	0.000	0.000	0.000	0.000
Obs	3707	3707	3707	3707

Notes: (*), (**), and (***) indicate significance of 10%, 5%, and 1%, respectively.

z-statistic in ()

The results are robust in all models. The firm performance, captured by ROA and ROE, is affected significantly by the lagged of them at 1% statistical significance in 4 models. The results make sense that tremendous extension of current firm performance is correlated with immense germination of preceding firm efficiency.

Further, similarly to Xu and Wang (1999); B. B. Jiang *et al.* (2008); and Najid and Rahman (2011) state-ownership (STATE) impacts positively on the ROA and ROE in 4 models at 1% level. It could be explained that ownership concentration institution such as the government often gives the better monitor and control in risk of firms to enhance their performance. Vo (2018) indicates that firms with higher state-ownership tend to take less risk-taking activities in Vietnam. Besides that, other explanations could be the investor's confidence in the government's management (Najid & Rahman, 2011) or "*helping hand*" hypothesis (Le & Chizema, 2011). Our findings further support the first hypothesis: SOEs' profitable ability could be improved by state-ownership because these firms easily connect to finance and support of the government.

Table 3 also gives more evidence about the relevance of the institutional environment, as presented by provincial competitiveness. The PCI impact is a positive related at 1% significant with ROA and ROE in all models. Thus, it claims that the improvement of the provincial competitiveness will lead to increased firm profitability because it reduces informal cost, asymmetrical information (Verrecchia, 2001; Biddle & Hilary, 2006).

5.2. The relationship between the level of state-ownership and firm performance under the quality of provincial competitiveness

In this section, we examine the influence of the level of provincial competitiveness on a firm's performance. We use the average PCI value (50) and split our sample into two levels: (i) province which has PCI index ≥ 50 is called high provincial competitiveness, and (ii) province which has PCI index < 50 is called low provincial competitiveness. In order to observe the influence of state-ownership on firm performance at different levels, we quantitate the level of state-ownership into three levels: Low level (STATE < 25%), Medium level (25% ≤ STATE < 75%), High level (75% ≤ STATE). Then, we check the effect of state-ownership on firm performance with each state-ownership level under low or high provincial competitiveness by using GMM regression. Our results are illustrated in Table 4 and Table 5.

Similarly, the results in Table 3, firm profitability is strongly related with the lagged of a previous performance at 1% level, and the coefficients are confident in all models (see more at Table 4 and Table 5). However, the impact of STATE is significantly different in low or high PCI. Our results in Table 4 support two hypothesis (i) state-ownership has a positive relationship with firm performance, and (ii) the high provincial competitiveness will improve firm performance. In high provincial competitiveness, the STATE has a positive impact on firm profitability. It implies that the competitive environment has a certain impact on market efficiency and resource allocation (Acemoglu & Robinson, 2008; Duncan, 2014; and Stefan *et al.*, 2014) and improve the firm performance. However, there are different impacts at the different level of state-ownership. We only find statistic evidence for the positive influence of state-ownership at low and high level. It implies that the government should hold the level of share under 25% or over 75% of total shares. Base on our findings, we explain that firm performance may enhance when SOEs are privatised, continuously with prior studies (Kang & Kim, 2012; Le & Chizema, 2011; Yu, 2013) or the government should concentratively control strategic firms to ensure firm efficiency as suggestions of Lehmann and Weigand (2000) and Asad *et al.* (2013). It also implies that the relationship between state-ownership and firm performance may be U-shape correlation.

Table 4: The association between the level of state-ownership and firm performance under high provincial competitiveness

Provincial competitiveness	High PCI (PCI ≥ 50)		High PCI (PCI ≥ 50)		High PCI (PCI ≥ 50)	
State-ownership quantitle	Low level (STATE < 25%)		Medium level (25% ≤ STATE < 75%)		High level (75% ≤ STATE)	
Dependent variable	ROA (5)	ROE (6)	ROA (7)	ROE (8)	ROA (9)	ROE (10)
ROA (-1)	0.368*** (9.83)		0.365*** (10.21)		0.365*** (9.82)	
ROE (-1)		0.278*** (8.49)		0.282*** (8.72)		0.275*** (8.31)
STATE	0.094** (2.49)	0.209** (2.36)	0.017 (0.27)	-0.006 (-0.04)	0.084** (2.05)	0.169* (1.77)
SIZE	-0.031*** (-4.25)	-0.092*** (-5.77)	-0.034*** (-5.13)	-0.095*** (-5.97)	-0.032*** (-4.38)	-0.093*** (-5.73)
PPE	-0.096*** (-3.74)	-0.204*** (-3.44)	-0.087*** (-3.78)	-0.160*** (-2.92)	-0.093*** (-3.54)	-0.194*** (-3.17)
DEBT	-0.039** (-2.52)	-0.125*** (-3.65)	-0.032** (-2.26)	-0.125*** (-3.75)	-0.039** (-2.46)	-0.125*** (-3.60)
GROWTH	0.059*** (8.42)	0.131*** (8.11)	0.054*** (8.88)	0.120*** (8.18)	0.057*** (8.24)	0.129*** (7.91)
CONSTANT	0.888*** (4.50)	2.638*** (6.10)	0.993*** (5.49)	2.736*** (6.42)	0.919*** (4.63)	2.649*** (6.08)
AR (1) test	0.000	0.057	0.000	0.060	0.000	0.058
AR (2) test	0.364	0.269	0.408	0.266	0.386	0.270
Hansen test	0.687	0.737	0.265	0.586	0.660	0.691
Wald chi2	395.03	344.17	448.18	361.23	392.42	328.01
Prob > chi2	0.000	0.000	0.000	0.000	0.000	0.000
Obs	3707	3707	3707	3707	3707	3707

Notes: (*), (**), and (***) indicate significance of 10%, 5%, and 1%, respectively.

z-statistic in ()

Meanwhile, the empirical results in Table 5 show that state-ownership is ineffective in the low provincial competitiveness. We did not find statistical evidence for the influence of STATE on ROA as well as ROE. It can be explained that low provincial competitiveness makes more informal costs, asymmetric information and corruption which can reduce firm efficiency. Moreover, the role of government in supervision and support will be limited in the low institutional environment. As a result, the role of state-ownership will not be effective.

Table 5: The association between the level of state-ownership and firm performance under high provincial competitiveness

Provincial competitiveness	Low PCI (PCI < 50)		Low PCI (PCI < 50)		Low PCI (PCI < 50)	
State-ownership quantitle	Low level (STATE < 25%)		Medium level (25% ≤ STATE < 75%)		High level (75% ≤ STATE)	
Dependent variable	ROA (11)	ROE (12)	ROA (13)	ROE (14)	ROA (15)	ROE (16)

ROA (-1)	0.367***		0.313***		0.367***	
	(10.16)		(8.27)		(10.15)	
ROE (-1)		0.294***		0.220***		0.294***
		(8.89)		(6.45)		(8.88)
STATE	-0.366	-1.082	67.807	207.955	-0.358	-1.069
	(-0.77)	(-0.90)	(0.38)	(0.62)	(-0.74)	(-0.91)
SIZE	-0.037***	-0.096***	-0.041***	-0.107***	-0.037***	-0.096***
	(-5.33)	(-6.05)	(-5.84)	(-6.58)	(-5.33)	(-6.05)
PPE	-0.091***	-0.169***	-0.100***	-0.193***	-0.091***	-0.169***
	(-3.91)	(-3.06)	(-4.10)	(-3.35)	(-3.91)	(-3.05)
DEBT	-0.030**	-0.121***	-0.033**	-0.122***	-0.030**	-0.122***
	(-2.17)	(-3.69)	(-2.28)	(-3.70)	(-2.17)	(-3.69)
GROWTH	0.055***	0.119***	0.053***	0.121***	0.055***	0.119***
	(8.94)	(8.04)	(8.85)	(8.25)	(8.94)	(8.04)
CONSTANT	1.070***	2.767***	1.178***	3.053***	1.071***	2.766***
	(5.68)	(6.50)	(6.17)	(7.03)	(5.68)	(6.50)
AR (1) test	0.000	0.059	0.000	0.064	0.000	0.059
AR (2) test	0.387	0.256	0.894	0.543	0.385	0.256
Hansen test	0.296	0.623	0.293	0.638	0.296	0.621
Wald chi2	429.83	359.05	374.44	327.17	429.13	359.11
Prob > chi2	0.000	0.000	0.000	0.000	0.000	0.000
Obs	3707	3707	3707	3707	3707	3707

Notes: (*), (**), and (***) indicate significance of 10%, 5%, and 1%, respectively.

z-statistic in ()

The other empirical outcomes are robustness in Table 3, Table 4 and Table 5, and the coefficients of control variables are similar to matrix correlation in Table 2. GROWTH plays a positive role significant for ROA and ROE at 1% level in all models. It implies that the firm performance is considerable upon the growth of the firm's revenue. Meanwhile, DEBT has a negative link with a firm performance at 1% or 5% level, consistently with prior studies. SIZE, as captured by the log of firm assets, is negatively related to the firm's profitability ratios, similarly with the level of using non-current assets (PPE). The firms, which have a large total asset and a high ratio of a tangible asset, may be more difficult to restructure than smaller ones; and it will impact negatively on the effectiveness of firm profitability (Qi *et al.*, 2000; Tian & Estrin, 2008; and Le & Chizema, 2011;)

6. CONCLUSION

This study estimates the impact of state-ownership on firm performance and the influence of provincial competitiveness by using the data of the listed firms from 2007 to 2015 in Vietnam. With the two-step system GMM method, the study finds that the state-ownership is positively related to firm performance, as presented by ROA and ROE. The findings also show that firm performance will increases when the provincial competitiveness is enhanced. In addition, empirical results suggest that the government should strongly privatise (reducing the level of state-ownership to under 25%) or highly centralised (holding the level of state-ownership > 75%) to enhance the firm performance, besides the improving the provincial competitiveness. Besides that, the characteristics of the firm such as size, debt ratio, tangible asset level or growth are found to have a statistically significant connection to the firm performance. Our results are robustness in all model with ROA as well as ROE. Our study has some policy implications: (1) the government should continuously improve the provincial competitiveness, (2) the government should strongly privatise commercial firm and hold high levels of state-ownership in strategic enterprises

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THE ROLE OF ACCRUALS QUALITY IN THE ACCESS TO BANK DEBT
AN EMPIRICAL RESEARCH OF NON-FINANCIAL LISTED FIRMS IN VIETNAM

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ABSTRACT: *This study, conducted with a sample of Vietnam non-financial listed firms during the period from 2008 to 2015, investigates the impact of accruals quality in the access to bank debt. The result illustrate a positive association between accruals quality and bank debt, even when controlling for other determinants of bank debt and for possible endogeneity between bank debt and accruals quality, which suggests that higher precision of earnings reduces information asymmetries with banks and favors the access of firms to bank loans.*

Keywords: *Accruals quality, bank debt, information asymmetry.*

1. INTRODUCTION

Bank loans is an important factor and frequent activity in the business process of an enterprise. In the credit process, the bank check and evaluate the company's financial statements will help the bank determine which assets the company can use as collateral, assess future cash flows, assess debt repayment capacity, and analyze risk of the company in redefining lending rates. Asymmetric information in credit operations is easy to happen because windowing pressing is become a popular activity in the recent years due to the economy is difficult and enterprise need more capital to operate and develop. The role of asymmetric information in bank debt contracting is an aspect of special interest in accounting and finance literature. In the presence of this market imperfection, financial institutions face adverse selection and moral hazard problems that make the assessment of the investment projects of their borrowers and the monitoring of their opportunistic behaviors difficult.

Previous research has focused on the effect of asymmetric information as a determinant of bank debt from various points of view. The main findings of these studies are that bank debt is preferable to public debt when asymmetric information is present, due to the monitoring role that banks may play on the borrower (Johnson, 1997; Anderson and Makhija, 1999; Hooks, 2003; Denis and Mihov, 2003; among others); banking relationships are also valuable in obtaining bank financing, because of the information generated about the borrowers' financial prospects (Petersen and Rajan, 1994; Berger and Udell, 1995; among others); finally, firm reputation may also reduce asymmetries (Diamond, 1991). On the other hand, precision of earnings has been shown to be a factor that, by reducing the information risk faced by lenders, improves debt contracting terms, such as the cost of debt financing (Francis et al., 2005), the debt maturity structure of firms, and the likelihood of providing collateral (Bharath et al., 2008).

In order to test my hypothesis I consider several accruals quality proxies (Dechow and Dichev, 2002; McNichols, 2002; Ball and Shivakumar, 2006) and test their effect on bank debt in a sample of Vietnam

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non-financial listed firms. The results show a positive association between my proxies of accruals quality and bank debt, which suggests that the precision of earnings reduces information asymmetries between the firm and the bank in my institutional context. These findings provide valuable insights for managers since they suggest that by improving the quality of earnings firms can enhance their availability of debt financing.

2. THEORETICAL BACKGROUND

2.1 Asymmetric information and bank debt

George Akerlof, Michael Spense and Joseph Stiglitz (1970) have explained many issues in the economy to argue that asymmetric information was existed. In the study of Myer and Majluf (1984), corporate executives have more information and therefore, they will make investment decisions that are beneficial to themselves without regard to shareholder interest. As a result, investment efficiency is significantly affected, leading to excessive or subdued investment and conflicts between shareholders and corporate creditors. In the creditors and borrowers relationship, the asymmetric information is the traditional financial literature to explain why capital does not always flow to firms with profitable investment opportunities (Stiglitz and Weiss, 1981). In this situation, creditors face adverse selection and moral hazard problems when granting credit.

According to previous literature, banks are more effective in monitoring borrowers than other lenders, e.g., private debtholders, due to their closer relationship with the firms (Fama, 1985; Houston and James, 1996; Blackwell and Kidwell, 1988; Diamond, 1984, 1991) and their ability to design and redesign contracts according to the characteristics of the borrower (Bharath et al., 2008). I expect that in bank-based financial systems firms may improve their access to bank debt by reducing informational asymmetries.

2.2. The relationship between accruals and financial reporting quality

According to Vietnam accounting standards, the Accrual basis is defined: All economic and financial operations of enterprises, which are related to assets, liabilities, owners' equity, revenues, and costs must be recorded in accounting books at the time they arise, not at the time of the actual receipt or payment of cash or cash equivalents. Financial statements made on the basis of accrual shall reflect the financial status of enterprises in the past, at present and in the future. Meanwhile, cash flow statements are prepared on the cash basis and cash transaction were recorded when cash was actually collected or paid. Therefore, the difference between the profit in the income statement and cash flow in the cash flows statement creates the accounting variables that researchers commonly call accruals variables. In other words, "accruals" are non-cash profit accounting show in the statement of income.

Financial report adjustment for better results or I can say "Window dressing" is the popular behavior of board of management to achieve their purpose. Window dressing through profit adjustment is the most popular behavior because profits is an important indicator and attracted reader of financial report. Cash flow from business operations on cash flow statements cannot be adjusted so that the board managements must recognize the accrued accounting variables and adjust them in order to adjust profit.

Financial statements are, therefore, an important source of information in mitigating the problems associated with borrower risk and asymmetric information: the higher the quality of this information, i.e., the more accurate the precision of earnings to capture future cash flows, the lower the information risk of the firm, because the lender can better estimate the future cash flows of the firm with which the loans will be repaid.

Previous research has verified that accruals increase the ability to predict future cash flows (Dechow, 1994) and that the reduction of information risk due to higher accruals quality influences contract terms, such as interest cost, collateral and debt maturity (Francis et al., 2005; Bharath et al., 2008).

2.3 Accruals quality and access to bank debt

Financial statement lending is a transaction technology based on the strength of the borrower's financial statement. Banks use this accounting information in order to estimate the expected future cash flows of the borrowers, and then assess their repayment capacity (Berger and Udell, 2006). Financial statements are, therefore, an important source of information in mitigating the problems associated with borrower risk and asymmetric information: the higher the quality of this information, i.e., the more accurate the precision of earnings to capture future cash flows, the lower the information risk of the firm, because the lender can better estimate the future cash flows of the firm with which the loans will be repaid. Previous research has verified that accruals increase the ability to predict future cash flows (Dechow, 1994) and that the reduction of information risk due to higher accruals quality influences contract terms, such as interest cost, collateral and debt maturity (Francis et al., 2005; Bharath et al., 2008). Based on the results of these papers and on the negative association between information asymmetry and bank debt in private debt contexts, I establish the hypothesis that this reduction of information risk may influence not only the contract terms of the loans but also the access of the firm to these loans.

3. Sample and data

I have used panel data from non-financial listed firms in Vietnam for my analysis. I selected listed firms (except the company operates in the financial sector such as bank, insurance…) during the period from 2008 to 2015 in HOSE and HNX. They should also present disaggregation of bank debt in their accounting statements. Subsequently, I refined the information, eliminating lost values, firms for which the information was not available for the three consecutive years and cases with errors in the accounting data. The data in the sample satisfies the requirements:

First of all, companies operating in the financial sector (ie, banking, insurance, life insurance companies and investment trusts) and in the areas of utility (eg electricity) are excluded. Because companies in this field have different accounting practices from manufacturing, trade and service enterprises.

Secondly, to use the GLS regression model with latency requirements, only companies with 5 or more observation years are retained.

Third, companies that have observations for variables that do not find the value will be discarded.

Although this data is collected from 2008 to 2015, the calculation of the accruals must take the difference between the two years, so the 2008 observations will not appear in the data set processed. The final data set for this study was 3,179 observations taken from 495 listed firms from 2009 to 2015.

4. RESEARCH DESIGN

4.1 Model specification

I analyze the relationship between bank debt and accruals quality by estimating the following regression:

$$BANKDEBT_{it} = intercept + \delta_1 AQ_{it} + \delta_2 GROWP_{it} + \delta_3 LEV_{it} + \delta_4 SIZE_{it} + \delta_5 FA_{it} + + \delta_6 ROA_{it} + \delta_7 Altman - Z_{it} + \delta_8 LAGE_{it} + \delta_9 CFOIND_{it} + \lambda_t + \eta_i + \varepsilon_{it}$$

(1)

where BANKDEBT represents the proportion of firm's bank debt; AQ the accruals quality proxy; GROWP

the growth opportunities; LEV the leverage; SIZE the size; FA is fixed assets over total assets as a proxy for collateral, ROA the return on assets; Altman Z-score, an indicator of firm's financial strength, LAGE the age of the firm, and CFOIND the cash flow from operations relative to the industry average. The parameters $\lambda_t \lambda_t$ are time dummy variables that change over time but are equal for all firms in each of the time periods considered, and $\eta_i \eta_i$, represents unobservable characteristics of the firms that have a significant impact on the firm's bank debt. These vary across firms but are assumed to be constant for each firm.

AQ is financial reporting quality. Financial statement lending is a transaction technology based on the strength of the borrower's financial statement. Banks use this accounting information in order to estimate the expected future cash flows of the borrowers, and then assess their repayment capacity (Berger and Udell, 2006). Financial statements are, therefore, an important source of information in mitigating the problems associated with borrower risk and asymmetric information: the higher the quality of this information, i.e., the more accurate the precision of earnings to capture future cash flows, the lower the information risk of the firm, because the lender can better estimate the future cash flows of the firm with which the loans will be repaid.

A positive association of size and age with bank debt is expected because the literature on bank debt shows that factors such as **size** and **age** are proxies of asymmetric information and firm's reputation that influence the levels of bank debt because of the information they generate about the financial expectations of the borrowers (Diamond, 1991; Petersen and Rajan, 1994; Berger and Udell, 1995). Larger and older firms present lower levels of asymmetric information and have better reputations (Berger and Udell, 1995), so it is expected they use more public debt than companies with higher levels of asymmetric information (Denis and Mihov, 2003).

Additionally, firms with higher **growth** opportunities are more likely to exhaust internal funds and consequently this would lead to use more debt. This suggests a positive relationship between growth opportunities and debt. However, De Andrés Alonso et al., 2005 find a negative relationship between growth opportunities and bank debt for Spanish listed firms.

Access to bank debt depends on **solvency**, and the relevance of **collaterals** in reducing moral hazard problems under asymmetric information (Boot et al., 1991; Boot and Thakor, 1994), so I would expect bank debt to present a positive association with firm solvency and its collaterals. On the other hand, since banks are the main providers of external funds for my sample, it is expected that more leveraged firms have a greater presence of bank debt. Based on the same argument (the choice between internal funds and private debt), more profitable that generate higher cash flows are more able to finance their projects with internal funds. Accordingly, I would expect a negative relationship of bank debt with profitability and the internal financing. I illustrate the expected sign in the table below

Table 1 : *Expected sign*

No	Name of variable	Variables description	Expected sign
1	BANKDEBT	I measure the financing received from banks using the variable BANKDEBT, which is calculated as total bank debt over total assets. It represents the proportion of firm's bank debt.	

2	AQ	AQ_DD, AQ_McN, AQ_BS are measured as the negative value of the $\left|\hat{\varepsilon}_{it}\right|$ according to the Dechow and Dichev model (2002), McNichols model (2002) and Ball and Shivakumar model (2006), respectively. AQ_sdDD, AQ_sdMcN, and AQ_sdBS report the negative value of the standard deviation of firm i's residuals from the industry-year regressions, $\hat{\varepsilon}_{it}$ for Dechow and Dichev model, Dechow and Dichev model modified by McNichols (2002), and Ball and Shivakumar model, respectively	+
3	GROWP	The growth opportunities calculated as sales in year t over sales in years t - 1	+/-
4	LEV	The leverage defined as total debt over total assets	+
5	SIZE	The size measured as the logarithm of assets	+
6	FA	FA is fixed assets over total assets as a proxy for collateral which is defined as fixed assets over total assets	+
7	ROA	ROA the return on assets which is measured as earnings before interests and taxes over total assets	-
8	ALTMAN- Z_{it}	I employ the firm's financial strength (Z), measured with Altman's Z-score (1968), where Z is defined as: $Z = 0.012X_1 + 0.014X_2 + 0.033X_3 + 0.066X_4 + 0.999X_5$ where X_1 is the working capital/total assets; X_2 the retained earnings/total assets; X_3 the earnings before interest and taxes/total assets; X_4 the market value equity/book value of total debt; X_5 is the sales/total assets	+
9	LAGE	Firm's age (LAGE), defined as the logarithm of the number of years since its inception	+/-
10	CFOIND	Operating cash flow relative to the industry average (CFOIND) in order to control for the ability of the firm to generate internal financing.	-

4.2. Variables description

4.2.1. Dependent variables

I measure the financing received from banks using the variable BANKDEBT, which is calculated as total bank debt over total assets.

4.2.2 Accruals quality metrics

As regards financial reporting quality metrics, I use proxies which have been used extensively in research (M Fuensanta Cutillas Gomariz, Juan Pedro Sánchez Ballesta, 2013; Nesrine Klai,Abdelwahed Omri,2011; Jennifer Martínez-Ferrero,2014). Like these studies, I focus on the accuracy with which accruals convey information about cash flows in order to inform stakeholders, particularly investors and creditors.

Dechow and Dichev model (estimated AQ_DD, AQ_sdDD)

First**,** I use the model developed by Dechow and Dichev (2002). In this model, financial reporting quality is measured by the extent to which current working capital accruals map onto operating cash flows of the prior, current and future periods. Thus, Dechow and Dichev (2002) regress current working capital accruals (WCA_t) on cash flow from operations in the previous fiscal year (CFO_{t-1}), the current year (CFO_t), and the subsequent year (CFO_{t+1}), all deflated by average total assets**.**

$$\frac{WCA_{it}}{AvgAssets_{it}} = \beta_0 + \beta_1 \frac{CFO_{i,t-1}}{AvgAssets_{it}} + \beta_2 \frac{CFO_{i,t}}{AvgAssets_{it}} + \beta_3 \frac{CFO_{i,t+1}}{AvgAssets_{it}} + \varepsilon_{it} \quad (2)$$

McNichols model (estimated AQ_McN, AQ_sdMcN)

My second proxy for accruals quality, following Francis et al. (2005), is the Dechow and Dichev's (2002) model, modified by McNichols (2002), which also includes the changes in revenues and property, plant and equipment (PPE) as explanatory variables:

$$\frac{WCA_{it}}{AvgAssets_{it}} = \beta_0 + \beta_1 \frac{CFO_{i,t-1}}{AvgAssets_{it}} + \beta_2 \frac{CFO_{i,t}}{AvgAssets_{it}} + \beta_3 \frac{CFO_{i,t+1}}{AvgAssets_{it}} + \beta_4 \frac{\Delta REV_{i,t}}{AvgAssets_{it}} + \beta_5$$

Ball and Shivakumar model (estimated AQ_BS, AQ_sdBS)

The model includes three additional variables to those in the Dechow and Dichev (2002) model:

$$\frac{WCA_{it}}{AvgAssets_{it}} = \beta_0 + \beta_1 \frac{CFO_{i,t-1}}{AvgAssets_{it}} + \beta_2 \frac{CFO_{i,t}}{AvgAssets_{it}} + \beta_3 \frac{CFO_{i,t+1}}{AvgAssets_{it}} + \beta_4 \frac{\Delta CFO_{i,t}}{AvgAssets_{it}} + \beta_5$$

I illustrate the variables in the table below:

Table 2: *Variables description*

Variable	Name of variable	Variables description
WCA_{it}	Working capital accruals	I calculated as the change in current assets (Δ CA), minus the change in cash and cash equivalents (Δ Cash), minus the change in current liabilities (Δ CL) plus the change in short term bank debt (Δ Debt).
CFO_{it}, CFO_{t-1}, and CFO_{t+1}	Cash flow from operations of firm i in year t, t-1 and t + 1, respectively	Obtain from cashflow statement
ΔREV	The change in revenues	**(Revenue in year t − Revenue in year t − 1)**
$PPE_{i,t}$	The property, plant and equipment	Obtain from balance sheet
D	Dummy variable	takes the value 1 if DCFO is negative and 0 otherwise
$AvgAssets_{it}$	Average total assets	the mean of the firm's total assets in years t -1 and t

The model is estimated at two-digit level in its cross-sectional version for each industry-year combination of the Vietnam listed companies. The residual vector reflects the variation in working capital accruals unexplained by cash flows of the previous, current and subsequent periods. Therefore, the absolute value of the residual for each firm-year observation is an inverse measure of accruals quality. In order to facilitate the interpretation of this variable I use the negative value of $\left| \hat{\varepsilon}_{it} \right|$, which I define as AQ include: AQ_DD from *Dechow and Dichev model* , AQ_McN from *McNichols model* , AQ_BS from *Ball and Shivakumar model*.

The fourth, fifth and sixth proxies, I use are based on the standard deviation of the residuals from the industry-year estimations of previous models estimated in Eq. (2), Eq. (3), Eq. (4) includes: $\sigma 2(\widehat{\varepsilon_i})$, $\sigma 3(\widehat{\varepsilon_i})$, $\sigma 4(\widehat{\varepsilon_i})$, respectively. Instead of the absolute value of the residuals for each firm, I compute an inverse measure of accruals quality for firm i in year t as the standard deviation of firm i's residuals from the industry-year regressions, $\hat{\varepsilon}_{it}$, calculated over periods t-4 to t. Larger standard deviations of residuals

indicate poorer accruals quality. I also use the negative values of $\sigma2(\widehat{\varepsilon_i})$, $\sigma3(\widehat{\varepsilon_i})$, $\sigma4(\widehat{\varepsilon_i})$, defined as AQ_sdDD$_{it}$, AQ_sdMcN$_{it}$, and AQ_sdBS$_{it}$.

5. RESULTS

5.1. Descriptive statistics and preliminary analysis

Table 3 summarizes the descriptive statistics for the variables used in my empirical research. In my sample, the average presence of bank debt over total assets (BANKDEBT) is 19.9%. The mean value of leverage is 54.01 %, whereas the mean value of fixed assets over total assets is 13.13 % and the average Altman Z-score is 0.38. On average, the firms in the sample are profitable (mean ROA 8.0%). The mean values of the accruals quality proxies are consistent with previous literature. The descriptive statistics highlight the importance of bank debt for listed firm in Vietnam, since it represents 19.9% of total assets, while for US, non-financial listed firms commercial bank debt reaches 18.75% (Berger and Udell, 1998).

Table 3: *Descriptive statistics*

	Mean	Std.Dev	Maximum	Minimum	Perc.25	Perc.50	Perc.75
BANKDEBT	0.1991	0.1842	0.7871	-	0.0146	0.1660	0.3276
AQ_DD	(0.0902)	0.1186	(0.0001)	(1.5060)	(0.1051)	(0.0544)	(0.0244)
AQ_McN	(0.0891)	0.1176	(0.0001)	(1.5023)	(0.1063)	(0.0536)	(0.0248)
AQ_BS	(0.0903)	0.1174	(0.0001)	(1.5060)	(0.1073)	(0.0545)	(0.0249)
AQ_sdDD	(0.1067)	0.1112	(0.0000)	(1.4621)	(0.1306)	(0.0723)	(0.0405)
AQ_sdMcN	(0.1065)	0.1101	(0.0001)	(1.4633)	(0.1297)	(0.0725)	(0.0423)
AQ_sdBS	(0.1077)	0.1108	(0.0002)	(1.4601)	(0.1312)	(0.0734)	(0.0419)
GROWP	1.2010	0.9464	24.1398	0.0184	0.9332	1.0912	1.2649
LEV	0.5107	0.2170	0.9706	0.0026	0.3410	0.5401	0.6801
SIZE	26.8716	1.3815	31.9056	23.2820	25.9818	26.7992	27.7906
FA	0.1953	0.1939	0.9764	-	0.0523	0.1313	0.2705
ROA	0.0926	0.0911	0.9970	(1.5681)	0.0436	0.0801	0.1274
ALTMAN-Z	1.0671	2.0876	23.5173	(0.0015)	0.1487	0.3859	1.0244
LAGE	2.8533	0.6534	4.4886	-	2.3979	2.8332	3.4012
CFOIND	1.0000	34.7483	557.6984	(596.4341)	(0.1811)	0.2039	1.6029

Table 4 presents the Pearson correlation matrix between variables. As expected, accruals quality proxies show positive and significant correlations between them and with bank debt. Since higher values of accruals quality proxies represent higher accruals quality, these results present preliminary evidence of a positive association between accruals quality and bank debt. . Collinearity is a possible concern for these variables, which I will analyze in the robustness section, showing that it does not affect my results.

Table 4: *Correlation matrix*

	BANKDEBT	AQ_DD	AQ_McN	AQ_BS	AQ_sdDD	AQ_sdMcN	AQ_sdBS	GROWP	LEV	SIZE	FA	ROA	ALTMAN-Z	LAGE	CFOIND
BANKDEBT	1														
AQ_DD	0.0774***	1													
AQ_McN	0.0813***	0.9869 ***	1												
AQ_BS	0.0717 ***	0.9905 ***	0.9804 ***	1											
AQ_sdDD	0.0842 ***	0.6592 ***	0.654 ***	0.653 ***	1										
AQ_sdMcN	0.0849 ***	0.6604 ***	0.6616 ***	0.6549 ***	0.9937 ***	1									
AQ_sdBS	0.0812 ***	0.6527 ***	0.6533 ***	0.6484 ***	0.9936 ***	0.9884 ***	1								
GROWP	-0.0393 **	-0.0164	-0.0073	-0.0239	-0.0411 *	-0.037 *	-0.042 **	1							
LEV	0.5854***	0.0112	0.0114	0.0031	0.0352 *	0.0331	0.0305	0.026	1						
SIZE	0.3352***	0.0313	0.0315	0.0247	0.0527 **	0.0612 ***	0.041 **	0.0346 **	0.3522 ***	1					
FA	0.2338 ***	0.102 ***	0.106 ***	0.1068 ***	0.0974 ***	0.1044 ***	0.1015 ***	-0.0425 **	-0.0376 **	0.0321*	1				
ROA	-0.1916 ***	0.0739 ***	0.0718 ***	0.0701 ***	0.0382*	0.0369*	0.0379*	0.0696***	-0.3406 ***	-0.0582*	0.0282	1			
ALTMAN-Z	0.206***	0.0001	-0.003	-0.0018	0.0193	0.0242	0.0107	0.0335*	0.1576***	0.5366***	0.0307*	0.0695***	1		
LAGE	0.0142	0.0657***	0.0672***	0.0713***	0.0685***	0.0699***	0.072***	-0.0871***	-0.0088	0.0704***	0.0933***	0.1199***	0.0036	1	
CFOIND	-0.0244	-0.0084	-0.0103	-0.0074	-0.0031	-0.0029	-0.0033	0.0171	-0.0156	0.0338	0.0156	0.0158	0.0421**	-0.013	1

* Significance at the 10% level.

** Significance at the 5% level.

*** Significance at the 1% level.

5.2. Regression results

In Table 5, I present the results of the estimation of my model[1]. I present results for the six proxies of accruals quality defined above (columns 1 to column 6) using the fixed effects estimator. This result confirms my hypothesis that higher accruals quality reduces information asymmetries between firms and banks and allows firms to obtain more bank debt. For the control variables, I obtain that higher leverage, size, fixed assets, and Altman Z-score are significantly associated to higher bank debt, whereas more profitable firms, with more growth opportunities and with higher cash flow from operations relative to the industry average use less bank debt.

The results show that firms with higher access to internal financing present lower levels of bank debt since both variables operating cash flow relative to industry average and ROA are negatively related to bank debt. Thus the firms of my sample rely on internal resources for carrying out investment projects when they are profitable and generate internal cash flow, whereas when they are not profitable or do not generate cash flows, they finance their projects with bank debt because this is the main source of external funds in the Vietnam market. The result is consistent with the pecking order theory of Myers and Majluf (1984).

Table 5: Bank debt and accruals quality

	(1)	(2)	(3)	(4)	(5)	(6)
AQ_DD	0.0363**					
AQ_McN		0.0388***				
AQ_BS			0.0351**			
AQ_sdDD				0.0570***		
AQ_sdMcN					0.0562***	
AQ_sdBS						0.0561***
GROWP	-0.00510**	-0.00523**	-0.00500**	-0.00773***	-0.00779***	-0.00781***
LEV	0.464***	0.465***	0.465***	0.472***	0.472***	0.472***
SIZE	0.0132***	0.0132***	0.0132***	0.0147***	0.0147***	0.0148***
FA	0.214***	0.213***	0.214***	0.215***	0.214***	0.214***
ROA	-0.0718***	-0.0706***	-0.0691***	-0.0673***	-0.0667***	-0.0664***
ALTMAN-Z	0.00481***	0.00482***	0.00479***	0.00200**	0.00198**	0.00201**
LAGE	-0.00719***	-0.00724***	-0.00732***	-0.00275	-0.00271	-0.00287
CFOIND	-0.000226***	-0.000226***	-0.000226***	-0.000107**	-0.000108**	-0.000107**
CONST	-0.403***	-0.403***	-0.403***	-0.452***	-0.451***	-0.453***

* Significance at the 10% level.

** Significance at the 5% level.

*** Significance at the 1% level.

Table 6 presents the mean values of bank debt by quartiles of accruals quality, and the t test of difference between quartiles 1 and 4. Quartile 1 shows the mean value of bank debt for firms with lowest accruals quality, whereas quartile 4 shows the mean value of bank debt for firms with highest accruals quality. In the last column of Table 6, I include the t-test to determine whether the mean values of quartile 1 are significantly different from those of quartile 4. The findings show significant differences between quartile 1 and 4 for all accruals quality metrics, with higher presence of bank debt in those firms with higher accruals quality.

Table 6: *Bank debt by accruals quality quartiles*

	Q1	Q2	Q3	Q4	t-test
AQ_DD	0.1744	0.1922	0.2058	0.2317	-3.15***
AQ_McN	0.1743	0.1931	0.2094	0.2273	-2.86***
AQ_BS	0.1784	0.1958	0.2079	0.2220	-2.31*
AQ_sdDD	0.1764	0.1946	0.2230	0.2139	-2.73**
AQ_sdMcN	0.1757	0.1950	0.2258	0.2113	-2.67**
AQ_sdBS	0.1814	0.1929	0.2189	0.2147	-3.84***

* Significance at the 10% level.

** Significance at the 5% level.

*** Significance at the 1% level.

5.3 Robustness results

In this section, I consider the potential endogeneity between bank debt and accruals quality since there are theoretical arguments to expect that leverage, and in particular bank debt, which is the main source of debt in the Vietnam market, may also influence accruals quality.

On the one hand, in high-leveraged firms, managers have incen- tives to manipulate earnings to avoid debt covenant violations (Watts and Zimmerman, 1986), so a negative effect of debt on accruals quality is expected. Although the debt covenant hypothesis is the traditional argument for the effect of debt on the manipulation of earnings, Feltham et al. (2007) develop a model that predicts that when the firm's performance is average to good, and given that debt holders demand high quality information, managers will use their accounting discretion to provide more pre- cise information in order to obtain better contracting terms, such as interest costs. Accordingly, I address this possible endogeneity of bank debt using a two-stage least-squares model (2SLS). I model bank debt and accruals quality as simultaneously deter- mined. Accruals quality is estimated endogenously in the first stage regression and bank debt is the dependent variable in the second-stage regression. In the first stage, I estimate accruals quality according to the model[4]:

$$AQ_{it} = \text{Intercept} + \delta_1 BANKDEBT_{it} + \delta_2 SIZE_{it} + \delta_3 OPERCYCLE_{it} + \delta_4 \sigma(SALE)_{it}$$
$$\delta_5 \sigma(CFO)_{it} + \delta_6 NEGEARN_{it} + \delta_7 FCOST_{it} + \delta_8 Altman - Z_{it} + \lambda_t + \eta_i + \varepsilon_{it} \quad (5)$$

where OPERCYCLE is the length of operating cycle, σ σ (SALES) the standard deviation of sales, σ σ (CFO) standard deviation of cash from operations, NEGEARN the percentage of years in which

earnings are negative and FCOST, the ratio of financial expenses over total debt minus accounts payable. The rest of variables are defined as previously.

In the second stage, I use the predicted value of accruals quality from the first stage regression. In Table 7, I show the 2SLS results, which are consistent with my main findings, i.e., accruals quality metrics are positively and significantly related to bank debt.

Additional robustness tests have been applied. To avoid a possible specification error if I remove the control for one of these variables, I regress the Altman-Z on leverage and introduce the residuals from this regression instead of the Altman-Z. This renders the information of leverage orthogonal to Altman-Z, and residuals capture the portion of Altman-Z not explained by leverage. The conclusions are the same as those presented before.

Finally, my results do not change if my estimate using t-statistics based on standard errors clustered at the firm and the year level (Petersen, 2009), which are robust to both heteroskedasticity and within-firm serial correlation, or if I use total bank debt over total debt as proxy for the dependent variable.

Table 7: *Bank debt and accruals quality: two stage regressions.*

Variable	(1)	(2)	(3)	(4)	(5)	(6)
predict_AQ_DD	4.66537 ***					
predict_AQ_McN		3.86821***				
predict_AQ_BS			4.85456***			
predict_AQ_sdDD				2.38245***		
predict_AQ_sdMcN					2.91586***	
predict_AQ_sdBS						2.31351***
GROWP	-0.00506***	-0.00226**	-0.00520***	-0.00255**	-0.00203*	-0.00223**
LEV	0.36592***	0.339111***	0.36718***	0.39694***	0.38712***	0.39578***
SIZE	0.01989***	0.01475***	0.02061***	0.01671***	0.01505***	0.01911***
FA	0.08805***	0.09826***	0.08784***	0.11590***	0.11920***	0.11829***
ROA	-0.09911***	-0.05833***	-0.10295***	-0.06047***	-0.05613***	-0.05247***
ALTMAN-Z	0.00185**	0.001912***	0.00107	0.00343***	0.00285***	0.00347***
LAGE	-0.00486	0.00087	-0.00525*	0.00096	0.00260843	0.00112113
CFOIND	-0.00009***	-0.00008***	-0.00009***	-0.00011***	-0.00010***	-0.00011***
_cons	-0.20500	-0.11912***	-0.20673***	-0.28059***	-0.19248***	-0.35159***

* Significance at the 10% level.

** Significance at the 5% level.

*** Significance at the 1% level.

6. CONCLUSIONS

In this paper, I examine the effect of financial reporting quality on the access of firms to bank debt for a sample of Vietnam non-financial listed firms, and find that higher accruals quality, i.e., more precision of earnings in relation to cash flows, is associated with a greater presence of bank debt with respect to total assets. Since the quality of accounting information can be considered an inverse indicator of information asymmetry, this finding is consistent with the financial literature, which has shown that, in private debt markets, the use of bank debt is partially determined by information asymmetry. Moreover, this result also

confirms, as stated in previous accounting research, that by reducing the information risk faced by the providers of funds, higher financial reporting quality has economic implications for firms. In this paper I show that improving accounting quality is relevant not only for obtaining better contracting conditions but also for accessing bank loans. My results suggest that they can rely on higher earnings quality, i.e., more precise earnings with respect to cash flows, in order to reduce information asymmetries with banks and have easier access to bank funds.

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DETERMINANTS OF TRANSFER PRICING AGGRESSIVENESS: A CASE OF VIETNAM

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Abstract: *The article was extracted from research results of Government Project KX01.02 /16-20. Transfer pricing in the direction of transferring profits will cause the country to lose a significant source of revenue from the corporate income tax, nullifying some of its legal right to tax on its business. Transfer pricing is a matter of global concern to all nations in the world. Transactions related to financial transactions (and service transactions) between affiliated parties have increased steadily from 7% (55%) in 2007 to 42% (66%) in 2010 (Earnst & Young, 2011). The purpose of this article is to study the factors affecting the transfer pricing aggressiveness in Vietnam. A number of studies around the world have addressed the determinants of transfer pricing aggressiveness in countries such as Australia, the United States and Indonesia, but the results of the study have been inconsistent in the factors that affect transfer pricing aggressiveness. This study was conducted in Viet Nam, using the data of 180 companies in Vietnam, using the OLS regression method. The results show that six factors: enterprise size (SIZE) Intangible assets (INTANG), leverage (LEV), proportion of the number of affiliated companies abroad in the total number of affiliated companies (MULTI), the characteristics of the corporate headquarters in the tax havens countries (TAXHV) are determinants that affect transfer pricing agressiveness in enterprises in Vietnam.*

Key words: *agressiveness, determinants, transfer pricing, tax obligation.*

1. INTRODUCTION

It can be said that the "fight" between anti-price transfer and price behavior of FDI enterprises as a contradiction without end. For enterprises, in order to carry out price transfer, enterprises use a variety of tactics that are diverse, sophisticated, and even costly to hire a specialized professional companies on price transfer for advice on transfer pricing. For the tax authorities of the host country, tax authorities must seek effective measures to control transfer pricing including investing modern management systems, databases, interdisciplinary collaboration, inspection. However, when the state offers a new transfer pricing control tool, the business takes other measures to cope.

Thus, transfer pricing, as a popular economic phenomenon driven by globalization, creates a conflict of interest between FDI enterprises and the country host. These negative effects are not limited to the scope of the economic interests but sometimes they can become complex socio-political issues.

For developing countries, the negative effects are likely to be more pronounced on a larger scale. If the FDI receiving country does not have effective solutions to the price manipulation of FDI enterprises, the benefits of FDI attraction are seriously compromised.

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Today, more and more businesses declare tax obligation to pay zero or only declare at very low amount reflects the fake of the results of business performance. Moreover, false information will lead to unhealthy competition, inequality between FDI enterprises and domestic enterprises, negatively affecting the prestige of enterprises, negatively impacting the image of enterprises to investors and general public.

Therefore, the study of transfer pricing and the factors that affect transfer pricing are of great significance and are indeed necessary for state management agencies to detect companies conducting price transfer , thereby creating an environment of equal competition for all businesses, creating public confidence in all countries in the world.

2. THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

Factors influencing transfer pricing include: company size, business performance, capital structure, intangible asset, existence of multinational affiliates, and the existence of transactions with related parties in the tax havens as detailed in Figure 1.

Factors influencing transfer pricing include: company size, business performance, capital structure, intangible asset, existence of multinational affiliates, and the existence of transactions with related parties in the tax havens as detailed in Figure 1.

(i) Factor 1: Company size

Large-sized companies often conduct business and financial transactions more than small-sized companies, so large companies can easily take advantages of lower income taxes (Rego, 2003). Larger companies will have more transactions with companies in their affiliated relationships such as leasing of assets at preferential prices, arranging loan contract. Large companies are often given incentives on corporate income tax rates, which are different from other companies. In addition, Mills et al. (1998) and Slemrod (2001) argue that large companies have different average income tax expenses than other companies. Research by Hanlon et al. (2007) shows that large companies are often entitled to tax incentives and a significant reduction in the amount of tax payable relative to the actual amount of tax payable. In addition, the study by Benvignati (1985), Al-Eryani et al. (1990) and Conover and Nichols (2000) also indicate that large companies carry out the transfer pricing. To examine the impact of firm size on transfer pricing aggressiveness, the following hypothesis is proposed:

Hypothesis 1: Firm size is positively associated with transfer pricing aggressiveness in Vietnam

(ii) Factor 2: Profitability

Firms with high profit results tend to find ways to reduce the tax liability (Rego, 2003). In addition, the study by Wilkie (1998) and Wilkie & Limberg (1993) also shows that there is a link between the pre-tax earnings and the effective tax rate. According to Rego (2003), the more taxable companies are the more tax evasion the taxpayers occur. From a transfer pricing perspective, companies can adjust their prices to reduce their taxable income in places with high corporate tax rates, and vice versa, they will adjust prices to increase profits where tax rates are low. According to Grubert & Mutti (2007), Womack & Drucker (2011); Duhigg & Kocieniewski (2012), multinational corporations with super profits like Apple, Google and Microsoft will tend to transfer profits to countries with low corporate income tax rates and will clamber large royalty payments (for example, royalty fees) for companies operating in countries where corporate income tax rate is high, which will result in reduced taxable profits. To examine the impact of business results on transfer pricing aggressiveness in Vietnam, following hypothesis is proposed:

Hypothesis 2: Profitability is positively associated with transfer pricing aggressiveness in Vietnam

(iii) Factor 3: Capital structure or firm leverage

Studies by Hines (1996); Richarson et al. (1998); Newberry & Dhaliwal (2001); Rego (2003); Dyreng et.al (2008) noted that companies using large amounts of debt in total capital were aware of how these companies benefited from the use of business loans. Bernard et al. (2006) found that firms using more debt than equity tended to be more transfer pricing aggressiveness than less leveraged firms. According to studies by Hines (1996) and Rego (2003), in general, companies tend to use loans in countries with high tax rates and vice versa, companies tend to use equity in countries with low tax rates. As such, corporate affiliates often have large internal lending transactions (Richardson et al., 1998). Thus, the use of debt as a source of capital is the way corporations use to reduce tax liabilities. To examine the impact of the capital structure (expressed in the debt-to-total capital ratio) on transfer pricing aggressiveness in Vietnam, following hypothesis is proposed

Hypothesis 3: Firm leverage is positively associated with transfer pricing aggressiveness in Vietnam

(iv) Factor 4: Intangible Assets

The issue that is mentioned quite often related to transfer pricing aggressiveness is transfer of intangible fixed assets between affiliates to achieve transfer pricing goals. Intangible assets that are often transferred within the group such as the transfer of intellectual property and transfer of research & development expenses (Grubert, 2003; Grubert & Mutti, 2007; Gravelle, 2015). Because intangible assets are often difficult to quantify on the market price principle, affiliated companies easily take advantage of this to carry out transfer pricing aggressiveness. Grubert & Mutti (2007) states that transfer pricing aggressiveness for intangible asset occurs because these assets are large but difficult to evaluate and these assets play an important role in business operation.

According to a study by Hanlon et al. (2007), the average transaction costs associated with transferring intangible assets significantly contributes to the transfer of profits between interrelated companies internationally. There is no denying the distinctive features of intangible fixed assets and the difficulty of valuing them because there is no market for the operation of similar intangible fixed assets. Therefore, the intangible asset valuation is subjective by affiliated companies. Thus, transfer pricing is usually made through the transfer and reception of the value of special intangible assets that usually occurs in affiliated companies with differences in the corporate income tax rates (Shackelford et al., 2007; Dyreng et al., 2008). For these reasons, following hypothesis is proposed:

Hypothesis 4: Intangible assets are positively associated with transfer pricing aggressiveness in Vietnam

(v) Factor 5: The existence of multinational companies (Multi-nationality)

Foreign companies doing business in a particular country are often entitled to tax incentives (Rego, 2003, Hanlon et al., 2007). For example, a multinational corporation that is receiving tax exemptions in a particular country will seek to shift its group's profits to the country where the tax exemptions are available in order to reduce the tax payable by the entire group. According to a study by Rego (2003), multinational corporations have the opportunity to be exempted from corporate tax obligations rather than domestic companies because multinational corporations have transactions involving many different countries in the world and will take advantage of tax incentives better than domestic companies.

According to Mills & Newberry (2004), multinational corporations will, on average, enjoy lower tax rates for their affiliates as they do business in the United States (US) rather than operating in other countries outside US. Corporations with affiliated companies abroad are more likely to have double transfer pricing aggressiveness risk than non-affiliated corporations. Sharing opinion with Mills & Newberry (2004), a study by Dyreng & Associates (2008) found that corporations with affiliated companies abroad often commit acts of tax evasion. Benvignati (1985) also notes that the group who has large number of oversea affiliates will

have more change to perform transfer pricing aggressiveness. Finally, Jacob (1996) also points out that US multinationals often make a transfer by taking advantage of the difference in US tax rates with those of non-U.S. To test the influence of multinational factors of the affiliated companies in the group affecting transfer pricing aggressiveness in Vietnam, following hypothesis is proposed:

Hypothesis 5: Multi-nationality is positively associated with transfer pricing aggressiveness in Vietnam.

(vi) Factor 6: Tax havens

The countries in which the government provides preferential treatment in terms of financial, taxation and tax policies for enterprises conducting business activities are called tax havens. These tax havens sometimes have no tax or very low taxes on businesses. The establishment of affiliated companies located in tax havens will give companies the opportunity to transfer their prices and transfer profits to the company in a tax haven to reduce the tax liability.

In these tax havens, it is possible for companies to reallocate their taxable profits between countries (Desai et al., 2006). In particular, taking advantage of the tax havens, multinational corporations will sell their goods to their affiliates in tax havens to generate high profits but don't pay taxes. It will also transfer the value of the goods or the group's expenses from this tax haven to countries with high tax rates because of the high costs of reducing taxable profits and avoiding paying taxes. According to Haris & Associates (1998), the tax liability that corporations pay in the US is lower if they have associates based in tax havens. In addition, the formation of associates in tax havens countries is one of the main objectives of the group and plays a very important role in the group's operations (Slemrod & Wilson, 2009). To test the role of tax havens utilization in the transfer pricing aggressiveness of associated companies in Vietnam, following hypothesis is proposed:

Hypothesis 6: Tax haven utilization is positively associated with transfer pricing aggressiveness in Vietnam

In summary, factors affecting transfer pricing aggressiveness in Vietnam will be shown in Figure 1.

Figure 1: Factors affecting transfer pricing aggressiveness of enterprises in Vietnam
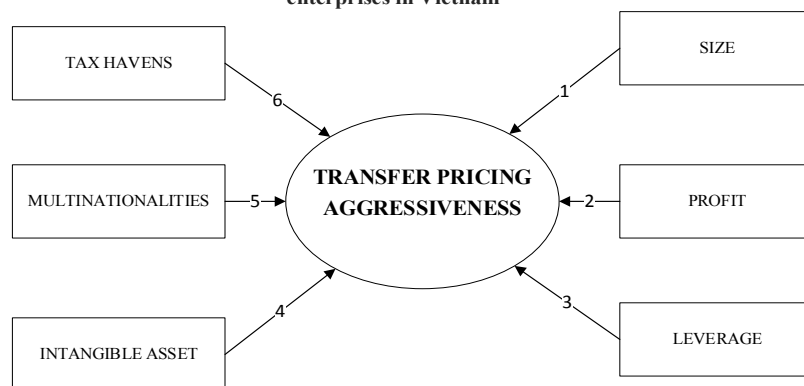
(Source: Synthesized by the research team)

3. RESEARCH METHODOLOGY

3.1. Sample selection and research data selection

Data used in this paper was collected from enterprises located in 09 provinces/cities of Vietnam: Hanoi, Ho Chi Minh City, Dong Nai, Binh Duong, Ba Ria - Vung Tau , Da Nang, Khanh Hoa, Hai Phong and Hung Yen. These are the 09 largest provinces/ cities in Vietnam, concentrated in industrial zones and large

corporations (especially FDI enterprises). Financial institutions, insurance companies, credit institutions and companies without overseas affiliates are not included in the sample.

Data was hand-collected by the research team from the source of financial statements of enterprises provided by the provincial tax departments. The data collection was performed during the period from June 2017 to June 2018. After excluding insurance companies, credit institutions and companies without overseas affiliates, the total sample size used was 180 companies, as the financial statements of year 2016 were used.

3.2. Research model

In this study, the relationship between dependent variable and independent variables is presented using the regression model which was created by Richardson et al. (2013).

$$TP_{i,t} = \alpha_{0i,t} + \beta_1 SIZE_{i,t} + \beta_2 PROFIT_{i,t} + \beta_3 LEV_{i,t} + \beta_4 INTANG_{i,t} + \beta_5 MULTI_{i,t} + \beta_6 TAXHV_{i,t} + E_{i,t} \quad (1)$$

Dependent variable and independent variables used in the model are shown in Table 1 and Table 2 below:

Table 1: Describe independent variables in the model and how to measure the variables

Variables		Measurement
Independent Variables	SIZE	Firm size: Measured by the natural logarithm of total assets
	PROFIT	Business results: Natural logarithm of profit before corporate income tax
	LEV	Debt structure in total assets (measured by the total value of long-term debt / total assets)
	INTANG	Value of intangible fixed assets: measured by the natural logarithm of intangible fixed assets
	MULTI	Total number of company's foreign subsidiaries divided by total number of company's subsidiaries
	TAXHV	A dummy variable (1 for the entity with at least one subsidiary company incorporated in an OECD (2006) listed tax haven, otherwise 0)

(Source: Synthesized by the research team)

According to OECD (2006), there are 33 countries of tax havens: Anguilla, Antigua and Barbuda, Bahamas, Bahrain, Bermuda, Belie, British Virgin Islands, Cayman Islands, Cook Islands, Cyprus, Dominica, Gibraltar, Grenada, Guernsey, Isle of Man, Jersey, Liberia, Marshall Islands, Mauritius, Montserrat, Nauru, Netherlands Antilles, New Caledonia, Panama, Samoa, San Marino, Seychelles, St.Lucia, St.Lucia, St. Kitts and Nevis, St. Vincent and the Grenadines, Turks and Caicos Islands and Vanuatu.

Table 2: Describe the dependent variable in the model and variable measurement

Variable		Measurement
Dependent Variable	TP	Each enterprise will have its own TP value (used to measure transfer pricing aggressiveness in Vietnam) by adding up the sum of the eight signs as mentioned below (value maximum is 8) and divided by the total number of signs found for the joint that. ***The TP value was transfer from a range of 0 - 8 to percent format.***
		1. The existence of interest-free loans between related entities
		2. The existence of debt forgiveness between related entities
		3. The existence of impaired loans between related entities.
		4. The provision of non-monetary consideration without commercial justification
		5. The absence of formal documentation to support selection of appropriate arm's-length methodologies or the formal documentation regarding related parties transactions
		6. The disposal of capital assets to related entities without commercial justification
		7. The absence of arm's-length justification for transactions between related entities
		8. The transfer of losses between related entities without commercial justification.

(Source: Synthesized by the research team)

Signs describing transfer pricing aggressiveness used in this paper are based on the Australian Taxation Office - ATO (2005) and the Australian Securities and Investment Commission - ASIC (2010): the appearance of non-intrinsic-commercial in nature), not in line with arm's-length principles or the company does not provide proof of these transactions. Also, as the previous studies conducted, the higher the value of TP is measured, the higher the level of the transfer pricing aggressiveness, and vice versa.

This paper review of data in the financial statements in conjunction with the explanatory notes to the financial statements as follows:

(1) The existence of interest-free loans between related entities.

Identification signals through the review of the financial statements on the value of receivables and the value of the debt between related parties. If the loan agreement between the parties associated links that this is a loan without interest, then this can be considered as the transfer pricing aggressiveness and so the TP variable in the research model will receive the value of 1, otherwise the TP variable will receive a value of 0.

(2) The existence of debt forgiveness between related entities

Identification signals through the review of the financial statements on the value of receivables and the value of the debt between related parties. If the loan agreement between the parties is not associated with the terms of the borrower is obliged to repay the loan, then this can be considered as the transfer pricing aggressiveness and so the TP in the research model will receive a value of 1, otherwise the TP variable will receive a value of 0.

(3) The existence of impaired loans between related entities.

Signal of recognition through the review of financial statements on the value of receivables and the value of liabilities between related parties. If there is a transaction related to the debt write-off receivable or payable between affiliated parties, then such can be considered as transfer pricing aggressiveness and so the TP in the research model will receive a value of 1, otherwise the TP variable will receive a value of 0.

(4) *The provision of non-monetary consideration without commercial justification*

Signal of recognition through the review of financial statements of the service providers or the provision of non-monetary assets between related parties. If these operations are not explained properly by the company on the basis of the market price principle, then it can be considered as transfer pricing aggressiveness and so the TP in the model will get value of 1, otherwise TP variable will get value 0.

(5) *The absence of formal documentation to support selection of appropriate arm's-length methodologies or the formal documentation regarding related parties transactions*

Identification signals through a review of the company's policy on financial statements applicable to intercompany transactions. If they are not given a fair policy on the basis of the market price principle, then it may be that can be considered as transfer pricing aggressiveness thus the TP in the research model will receive value of 1, otherwise the TP variable will receive a value of 0.

(6) *The disposal of capital assets to related entities without commercial justification*

Identification signals through the review and disclosure of financial statements on asset trading between related parties. If these operations are not explained properly by the company on the basis of the market price principle, that can be considered as transfer pricing aggressiveness and so the TP in the model will study get value 1, otherwise TP variable will get value 0.

(7) *The absence of arm's-length justification for transactions between related entities*

Identification signals through the review of financial statements on transactions between related parties. If these operations are not explained properly by the company on the basis of the market price principle (such as considering the characteristics of the loan agreement) then it may be that can be considered as transfer pricing aggressiveness thus the TP variable in the research model will receive the value of 1, otherwise the TP variable will receive the value of 0.

(8) *The transfer of losses between related entities without commercial justification.*

Identification signals through the review of financial statements on transactions between related parties and considering the value of losses on the financial statements of the company because the company suffered a loss, the company is not required to pay corporate income tax. If there is a transfer of losses between affiliated companies then that can be considered as transfer pricing aggressiveness so the TP in the research model will receive the value of 1, reverse the variable TP will receive a value of 0.

4. RESULTS OF EMPIRICAL RESEARCH ON DETERMINANTS AFFECTING TRANSFER PRICING IN ENTERPRISES IN VIETNAM

4.1. Descriptive Statistics and Correlational Analysis

Statistical data collected from the research team show in Table 3 that in 180 firms, 32 companies (accounting for 18%) had loan transactions with related companies. The agreed interest rate for these loans is 0%. As for the debt write-offs for affiliates, in 180 companies, 23 companies made debt write-offs, accounting for 13%. At the same time, research data also show that in 180 companies, 19 companies (accounting for nearly 10%) appear to have implemented a debt-to-equity valuation. Notably, in the 180 companies, there are 54 companies (accounting for 30%) having property transfer transactions, providing non-market services.

In addition, there are 60 companies (33%) that do not provide evidence of how valuation of transferable assets and services or, in other words, the basis for determining transfer prices do not exist at all. this company. The results of the survey on the transparency of information related to transferring operations are in line with market principles, showing that 34 companies out of 180 companies (19%) cannot verify the transparency and objectivity in the determination of the value of asset transfers; and the presence of 60 companies (30%) of companies with agreements with affiliated parties unclear, not fully explain the basis of the agreement between the parties. Finally, when the team investigated the existence of loss-making operations among affiliates, it found that most of these operations were in line with regulations, only 6 out of 180 companies non-compliance loss, accounting for about 3%.

Table 3: Statistics describing the value of the signals associated with the transfer pricing aggressiveness

No.	The content of the transfer pricing aggressiveness signals	Mean (%)
1	The existence of interest-free loans between related entities	32
2	The existence of debt forgiveness between related entities	23
3	The existence of impaired loans between related entities.	19
4	The provision of non-monetary consideration without commercial justification	54
5	The absence of formal documentation to support selection of appropriate arm's-length methodologies or the formal documentation regarding related parties transactions	60
6	The disposal of capital assets to related entities without commercial justification	34
7	The absence of arm's-length justification for transactions between related entities	60
8	The transfer of losses between related entities without commercial justification.	6

(Source: Research Team)

Thus, based on the eight signals of transfer pricing aggressiveness used to determine the level of transfer pricing aggressiveness of companies, empirical evidences from the research showed that companies operating in Vietnam are showing signal of transfer pricing aggressiveness which are clearly indicated by signal No. 4, 5 and 7.

Table 4: Correlations analysis

	TP	SIZE	PROFIT	LEV	INTANG	MULTI	TAXHV
TP	1						
SIZE	0.0846	1					
PROFIT	-0.3641	0.3475	1				
LEV	0.0679	0.0315	0.0252	1			
INTANG	-0.5497	0.3599	0.3209	0.2129	1		
MULTI	0.3547	-0.0366	-0.13	-0.2074	-0.2982	1	
TAXHV	0.3593	-0.2033	-0.3215	-0.1668	-0.3667	0.0526	1

(Source: Results from data processing of Research Team)

The data in Table 4 shows that the factors that positively influence the price transfer aggressiveness are the size of the company, the nationality of the associated country abroad, and tax havens characteristic and capital structure of the company (leverage) while factors that are negatively influence the price transfer aggressiveness are profitability (performance of an enterprise) and intangible assets.

In summary, the results show that the greater the company's business result, the less the company is likely to transfer pricing aggressiveness. In addition, the greater the value of the company's intangible assets, the lower the transfer pricing aggressiveness. Finally, the greater the use of debt (leverage), the greater the likelihood of transfer pricing aggressiveness.

4.2. Experimental results of factors affecting transfer pricing aggressiveness

The paper has conducted tests related to validation and compliance with regression hypotheses (for example: constant variance, residual independence, no self-correlation). The fit of the model is determined by the p-value of the statistical F obtained after the estimation. The results obtained after regression (F-value = 22.18, Prob (F-statistic) = 0.000) less than 0.1 so that the model is the appropriate model. The hypothesis of constant variance was verified by the Breusch-Pagan-Godfrey test. Prob. F's value obtained after this test is more than 0.1, and then the model has constant variance. For the self-correlation hypothesis, apply the autocorrelation test with the Durbin - Watson coefficient (DW). The results obtained after regression shows DW = 2.17 means model has no self-correlation between variables.

The results obtained after analyzing the regression of the factors affecting the transfer showed that: p-value was less than 0.05. It indicated that the variables in the model are statistically significant. Observation of the Adj.R^2 value of the model showed a value of 0.4152 (41.52%) which indicated the factors used in the model (independent variable): SIZE (firm size), PPOFIT (business results); LEV (debt/ total assets), INTANG (intangible asset value), MULTI (number of affiliated companies abroad), TAXHV (tax havens utilizations) are able to account for 41.5% of variation in dependent variable (TP: transfer pricing aggressiveness) of companies in Vietnam.

Table 5: Results of regression model of factors affecting transfer pricing aggressiveness

Variables	Coefficient (Standardised)	Std.error	t-Value	P>|t|
Intercept	-0.7443222	34.066665	-2.18	0.030

SIZE	3.843242	1.313225	2.93	0.004
PROFIT	-0.5360425	0.168412	-3.18	0.002
LEV	18.20156	10.95791	1.66	0.099
INTANG	-1.461961	0.2269406	-0.644	0.000
MULTI	23.51698	6.733003	3.49	0.001
TAXHV	10.69586	3.936568	2.72	0.007
Adj. R^2 (%)	0.4152			
F-value	22.18			
Prob>F	0.0000			
DW	2.17			
N	180			

(Source: Results from data processing of Research Team)

5. DISCUSSION

The results obtained after the OLS regression model of factors affecting transfer pricing aggressiveness showed that the Hypotheses 1, 3, 5 and 6 were accepted. Hypotheses 2 and 4 are rejected.

Hypothesis 1 "*Firm size is positively associated with transfer pricing aggressiveness in Vietnam*" has been accepted. The results of this study agree with the results of the study by Richardson, G., Taylor, G., & Lanis, R. (2013) conducted a study in Australia with data used in 2006; Waworuntu, S.R, Hadisaputra, R Pertanika (2016) studied in Indonesia with data from 2010 to 2012; Shackelford & Associates (2007). This further confirms that large-scale companies tend to regulate taxable income through transfer pricing.

Hypothesis 2 "*Profitability is positively associated with transfer pricing aggressiveness in Vietnam*" has been rejected. The regression results show that the business results are negatively correlated with the transfer pricing aggressiveness. The results of this study disagree with the results of the study by Rego (2003) and Womack & Drucker (2011); Duhigg & Kocienniewski (2012); Waworuntu, S.R, Hadisaputra, R Pertanika, 2016. According to Waworuntu, S.R., Hadisaputra, R Pertanika (2016), According to the authors Rego (2003) and Womack & Drucker (2011); Duhigg & Kocienniewski (2012), the more profitable the business will carry out transfer pricing behavior to reduce the amount of tax payable on the performance interest. However, in the context of Vietnam, the results of this quantitative analysis are relevant because through tax inspections, tax experts have pointed out that most multinational companies in Vietnam, have not been profitable since the beginning of business operations in Vietnam but they continue to expand their production and business (Mai Phuong, Nguyen Nga, 2018). Lotte Mart Vietnam, for example, is constantly reporting losses, but it is also continuing to expand its business model, prompting many to recall some of the "big" retailers in Vietnam. Suspected transfer pricing, April 2015, after 2 months of inspection, the tax authorities have requested to collect 507 billion from Lotte Mart

Hypothesis 3 *"Firm leverage is positively associated with transfer pricing aggressiveness in Vietnam"* has been accepted. This means that the large borrowers will also be likely to transfer pricing aggressiveness. This conclusion is consistent with the conclusions of previous studies (Newberry & Chaliwal, 2001; Richardson, G., Taylor, G., & Lanis, R., 2013; Waworuntu, SR, Hadisaputra, R Pertanika, 2016). This indicates that companies often make a transfer using the loan and the increase in interest expense to reduce taxable income and thus reduce the taxable income

Hypothesis 4 "*Intangible assets are positively associated with transfer pricing aggressiveness in Vietnam*" was rejected. Research results show that the value of intangible assets is negatively correlated with transfer pricing aggressiveness in Vietnam. The findings are consistent with the findings of Waworuntu,

S.R, Hadisaputra, R Pertanika (2016) in Indonesia. In the research of Waworuntu SR, Hadisaputra, R Pertanika (2016), the value of intangible assets is measured by considering whether the affiliate parties pay royalties upon receipt of intangible assets when delivered or not. When the royalties is paid, then there is no transfer pricing aggressiveness and vice versa. Thus, the results of this study are appropriate. However, according to research by Shackelford et al. (2007) and Hanlon et al. (2007); Richardson, G., Taylor, G., & Lanis, R., 2013, the value of intangible assets is difficult to determine. Thus, it opens up the opportunity for multinational companies to transfer pricing between the associates to reduce the Group's tax liability. Given the context in Vietnam, the results of this study may be interpreted as the Vietnamese business accounting system has introduced very strict regulations regarding recognition of intangible fixed assets. The condition for recognition as intangible assets in accordance with Vietnamese Accounting Standard No. 04 is that the enterprise must be certain to obtain future economic benefits brought about by the asset and the enterprise must determine the level. It is probable that future economic benefits will be available using appropriate and reasonable assumptions about the economic conditions that exist throughout the useful life of the asset.

Hypothesis 5: *"Multi-nationality is positively associated with transfer pricing aggressiveness in Vietnam* is accepted. The results of this study agree with the results of the studies by Richardson, G., Taylor, G., & Lanis, R. (2013); Hanlon et al. (2007); Conover & Nichols (2000). Hanlon et al. (2007); Conover & Nichols (2000) that companies with overseas affiliates will have more opportunities to evade taxes and avoid taxes than non-affiliated companies. The results of this study are not consistent with those of Waworuntu, S.R, Hadisaputra, R Pertanika (2016). This is explained by the fact that in Indonesia, the joint venture companies set up offices abroad but barely conducts economic activity so the influence of foreign affiliates to transfer prices is not possible. In Vietnam, branches and businesses associated with Vietnamese enterprises are the parent companies of the company in Vietnam and are operating overseas as business units rather than representative offices in Indonesia.

Hypothesis 6: "*Tax haven utilization is positively associated with transfer pricing aggressiveness in Vietnam*" is accepted. This finding is not consistent with the results of Richardson & Associates (2013) conducted in Australia; Waworuntu, SR, Hadisaputra, R Pertanika (2016). Both of these studies suggest that the existence of affiliates in tax havens is not available. However, the results of this study support the opinion of experts such as Francis Weygiz studying the tax havens and concerns about the transfer pricing aggressiveness in Vietnam. A report released by Oxfam on May 18, 2017 reveals that $100 billion is the number that developing countries (including Vietnam) are losing each year due to the tax avoidance activities of multinational corporations. According to Francis Weygiz, 90% of the largest companies in the world are opening branches in at least one global tax haven (Nguyen Duc, 2017).

CONCLUSION

The objective of this study has been achieved when it provides evidence of main factors affecting transfer pricing aggressiveness of enterprises. Among six major determinants of transfer pricing aggressiveness were tested in this study, the size of the company, the number of affiliated overseas companies, tax havens utilization, and financial leverage are all factors positively influencing transfer pricing aggressiveness. However, the results of operations and the value of intangible assets are factors that have the opposite effect on transfer pricing aggressiveness.

The study also provide Vietnamese governance with useful information on the key determinants of transfer pricing aggressiveness, thereby orienting the development of regulatory documents, policies, and regulations in order to control transfer pricing and restrict the transfer pricing manipulation of enterprises. Accordingly, tax authorities of Vietnam should select large scale companies with multiple affiliates located in other countries

around the world, especially those with ties to related parties based in tax havens, and companies with high level of leverage to inspect, since then, to improve the efficiency of controlling transfer pricing and enhance transparency of the financial information of enterprises. Other countries, especially developing countries, could learn from these Vietnamese policies to control these determinants of transfer pricing aggressiveness.

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EVIDENCES OF HERDING BEHAVIOR IN VIETNAM STOCK MARKET: A SECTORIAL ANALYSIS

Mai Sinh Thoi*

ABSTRACT: *The study examines herding behavior in Vietnam stock market at sectorial level under different market conditions. The study employs the cross-sectional absolute deviation (CSAD) method developed by Chang, Cheng and Khorana(2000). The data contains daily 135 stock prices divided into 20 industries from 02nd Jan/2007 to 31st Dec/2017. Those stocks are listed on Hanoi stock exchange (HNX) or Ho Chi Minh stock exchange (HOSE). The estimated results demonstrate that herding is evident for the whole Vietnam stock market, under both up and down market. Herding is stronger in up market than down market. At sectorial level, all industries except for construction show the evidence of herding and 15 out of those 19 industries shows the stronger herding during up market than down market. However, the whole market and all industries do not show the evidence of herding under extreme up and down market conditions. During 2008 global financial crisis, the whole Vietnam stock market shows the marginally significant evidence of herding. Herding is weaker during the crisis period than normal period. At sectorial level, a half of 20 industries show the evidence of herding during the crisis and 8 out of those industries shows the weaker herding during the crisis period than normal period.*

***Keywords:** Herding behavior, sectorial level, Vietnam stock market.*

1. INTRODUCTION:

Herding behavior in stock market is defined as an imitative situation in which investors ignore their own analysis and follow the action of other investors that can be market consensus (Bikhchandani and Sharma, 2001).In behavioral perspective, herding behavior can be seen as irrational behavior. Herding behavior has adverse impact on stock market. It drives stock prices far away from fundamental value and raises volatility (Bikhchandani and Sharma, 2001). During booming time, herding behavior can make stock prices surge and cause bubbles. During shocking times, herding behavior can make stock prices fall and cause the overreaction of investors and crash for stock market, which often occurs in several financial crisis. Herding phenomenon often occurs when there is a limitation of information or knowledge which makes investors unconfident about their own analysis and choose to follow market consensus. Vietnam stock market as an emerging market is a good one to test for the existence of herding behavior. Due to the underdevelopment of information system, investors can face with insufficient information. Another reason is that the majority of investors in Vietnam stock exchange are individual investors with limited investment training. Hence, herding is likely to occur in Vietnam stock market.

In the study, I plan to test for herding behavior in Vietnam stock market at sectorial level. The behavior is also examined during extreme market conditions and 2008 global financial crisis. The study is motivated by the following reasons:

Firstly, my study makes contribution to literature. Most of studies investigating herding in Vietnam stock market concentrate on the entire market such as Bui et al. (2015), Vo and Phan (2016), Vo and Phan

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(2017). To my best knowledge, Bui et al. (2017)is the only study testing herding at industry level. However, my study extends Bui et al. (2017) in a number of aspects. My study contains 5 more industries and herding is examined under more conditions like extreme market condition and crisis. The time period is extended from 2014 to 2017 to contain recent changes in Vietnam stock market. Secondly,Bui et al. (2015) and Vo and Phan (2017) shows inconsistent result about the herding direction between up and down market. My study helps to clarify the inconsistent result. Thirdly, my study result will be helpful to investors. Investors will understand further about herding behavior from each industry under different market conditions, their investment decision-making process. Based on that, they can create a more reasonable investment strategy. Fourthly, my study result will facilitate government authority to recognize the magnitude of herding behavior in each industry and propose solutions to enhance the efficiency of Vietnam stock exchanges.

The study employs the cross-sectional absolute deviation (CSAD) method developed by Chang et al. (2000), OLS regression method and secondary daily data to test for the evidence of herding behavior.

The remainder of the paper is structured as follows: Section 2 - a literature review; Section 3 – methodology and data; Section 4- empirical results;Section 5 - conclusion.

2. LITERATURE REVIEW

Herding behavior attracts a big number of studies. My study relates to at least three strands of literature.

The first strand is studies relating to herding behavior in Vietnam stock market. Le and Truong (2014), Phan and Zhou (2014), Bui et al. (2015), Vo and Phan (2016), Vo and Phan (2017) and Bui et al. (2017) shows the evidence of herding behavior in Vietnam stock market, but the magnitude of herding under different market conditions is inconclusive. Le and Truong (2014) develops a new method which enables to detect herding behavior in a given trading day. Phan and Zhou (2014) interviews 20 individual investors in Vietnam stock market. Applying the method from Chang et al. (2000) to analyses 30 blue chips, Bui et al. (2015) shows that herding in Vietnam stock market only exist during up market. Vo and Phan (2016) applies the method developed by Chang et al. (2000) and quantile regression technique. The study finds that herding is stronger after 2008 global financial crisis. Before the crisis, herding is stronger in down market than up market. The opposite is true after the crisis.Vo and Phan (2017) applies 2 methods developed by Christie and Huang (1995) and Chang et al. (2000) to analysis daily, weekly and monthly stock return. The research shows that herding is short-lived as it exists only in daily and weekly data and herding in down market is stronger than up market, which is controversial with Bui et al. (2015). Herding exists in both low and high trading volume, but be stronger in low volume case. Herding does not exist during 2008 global financial crisis. Bui et al. (2017) employing the method from Chang et al. (2000) with some extensions study herding at 16 sectors from 1st Jan/2007 to 17st Oct/2014. The study finds evidence of herding existing in 14 sectors and investors herd more in up market than down market. The study also observes that U.S. stock market affects herd behavior in the Vietnamese stock market. The difference between my study and those studies is that my study extends their studies to consider herding not only in the whole Vietnam stock market but also in each industry.

The second strand is studies relating to herding behavior in stock market from sectorial perspectives. Gebka and Wohar (2013) investigates the existence ofherding in the global equity market, shows that herding exists in some industries such as especially in basic materials, consumer services, and oil and gas.Litimi et al. (2016) examines herding phenomenon and its effect on volatility in US stock market at sectorial level by employing both methods from Christie and Huang (1995) and Chang et al. (2000). The research finds that consumer non-durables, tublic utilities, and Transportation industries herd toward

market return.Shah et al. (2017) tests for the herding behavior in Pakistan stock exchange from different perspectives such as herding of firms towards market, herding of firms towards industry portfolios and herding of industry portfolios towards market by using the method of Christie and Huang (1995). The study shows strong evidence of firms in several industries herding towards their industry portfolios, but weak evidence of industry portfolios herding towards the market.

The third strand relates to studies about the empirical presence of herding behavior in international stock markets. Herding phenomenon is tested in various stock markets. Bui et al. (2015), Economou et al. (2016),Tan et al. (2008) report the presence of herding in Indonesia, the Philippines, Malaysia, Greece and China stock markets. Chang et al. (2000) developed a novel method based on the study by Christie and Huang (1995) to examine herding in different international markets. This study reports no evidence of herding in the most developed countries such as US, Hong Kong, Japan but a strong evidence in emerging markets such as South Korea and Taiwan. Hwang and Salmon (2001) report the similar results to Chang et al. (2000). In contrast, some studies show the evidence of herding in developed markets. For example, Chiang and Zheng (2010) shows the evidence of herding in some developed stock markets when applying market index data to compute herding propensities in country-specific level. Litimi et al. (2016) indicates the presence of herding in America and herding is a vital factor for bubbles in the market. The distinction between my study and those studies in the second and third strands above is that my study tests for herding in Vietnam stock market.

3. METHODOLOGY AND DATA

Chang et al. (2000) and Christie and Huang (1995) developed 2 methods to investigate the presence of herding behavior which are applied by numerous methods such as Bui et al. (2015), Vo and Phan (2016), Vo and Phan (2017), Litimi et al. (2016), Shah et al. (2017). However, the latter is criticized because of a number of drawbacks. Firstly, the method suggested by Christie and Huang (1995) only recognizes herding under the condition of extreme return. However, herd behavior may be present at the entire return distribution and become stronger during period of market stresses (Chiang et al., 2010). Secondly, the definition of extreme return is arbitrary. Thirdly, the method is considerably affected by the existence of outliers(Vassilakopoulos, 2014).Hence, my study employs the method from Chang et al. (2000).

The model to test herding for each industry is as follows:

$$CSAD_{j,t} = g_0 + g_1|R_{mt}| + g_2R^2_{mt} + u_t \qquad (1)$$

Where,$|R_{mt}|$ is the absolute value of market return at time t. $CSAD_{jt}$is a cross-sectional absolute deviationof the industry j which is calculated as follows:

$$CSAD_{jt} = \frac{1}{N}\sum_1^N \left| R_{it} - R_{mt} \right|$$

Where, $R_{i,t}$ is the daily return of stock i in the industry j at time t, which is determined as follows:

$$R_{it} = 100*Ln\left(\frac{P_{i,t}}{P_{i,t-1}}\right)$$, $P_{i,t}$ and $P_{i,t-1}$: Closing daily stock prices at t and t-1.

The cross-sectional absolute deviation of the whole market ($CSAD_t$) is based on stocks from all industries.

$R_{m,t}$ isthe market return which can be calculated by weighted average market return or equally weighted average market return. In the study, I apply the later method as it is similar to the original paper of Chang et al. (2000). $R_{m,t}$ is calculated as the cross sectional average of the N returns at time t and it is the same for all industries. The formula isas follows:

$$R_{mt} = \frac{1}{N} \sum_1^N R_{it}$$

Chang et al. (2000) demonstrates that return dispersion measured as CSAD is an increasing function of the market return and the relation is linear. However, in the case of herding behavior, investors follow market consensus and ignore their own analysis of stocks, the CSAD will go down, the increasingly linear relationship no longer holds; instead, it is more likely to be non-linear increasing or even decreasing. R^2_{mt} is added in equation 1 to capture the non- linear relationship. Herding is present if coefficient $\gamma 2$ in equation (1) is significantly negative.

Model 2 and 3below is used to test for herding in up ($R_m > 0$) and down ($R_m < 0$) market:

$$CSAD_{j,t} = g_0 + g_1|R_{mt}| + g_3 R^2_{mt} + u_t, \quad \text{if } R_m > 0 \qquad (2)$$

$$CSAD_{j,t} = g_0 + g_1|R_{mt}| + \gamma_4 R^2_{mt} + u_t, \text{ if } R_m < 0 \quad (3)$$

If herding is present in up and down market, the coefficients g_3 and γ_4 are expectedto be significantly negative. Those coefficients g_3 and $\gamma_4$indicate the magnitude of herding in up and down marketrespectively and the difference between g_3 and γ_4 shows the herding asymmetry in the two states. If herding is stronger in up market than down market, g_3 is expected to higher than γ_4 in absolute value.

Herding can be stronger during extreme market conditions(Christie and Huang (1995)). Because the definition of extreme market conditions is arbitrary, the study applies 5% up or down tail of market return distribution. Model 4 and 5 below are used to test for herding during extreme up and down market conditions as follows:

$$CSAD_{j,t} = g_0 + g_1|R^{extreme\,up}_{mt}| + \gamma_5 R^{2extreme\,up}_{mt} + u_t, \; R_{mt} \text{ in 5\% up tail of distribution} \qquad (4)$$

$$CSAD_{j,t} = g_0 + g_1|R^{extreme\,down}_{mt}| + \gamma_6 R^{2extreme\,down}_{mt} + u_t, \; R_{mt} \text{ in 5\% down tail of distribution} \qquad (5)$$

If herding is evident, the coefficients γ_5 and γ_6 are expectedto be significantly negative. They can be used to compare with g_3 and γ_4 to check if herding is stronger during extreme market conditions.

Vo and Phan (2017) shows that herding does not exist in Vietnam stock market during the global financial crisis. However,Shah et al. (2017) shows the opposite result in Pakistan stock market. The study will examine the question again. The model 6 below is used to test for herding during 2008 global financial crisis.

$$CSAD_{j,t} = g_0 + g_1 D_{1*}|R_{mt}| + g_2(1 - D_1)_*|R_{mt}| + \gamma_7 D_{1*}R^2_{mt} + \gamma_8 (1 - D_1)_* R^2_{mt} + u_t \qquad (6)$$

D_2 if a dummy variable, is equal 1 if the time is from 1st Jan/2008 and 31st Dec/2008 and 0 otherwise.

The coefficient γ_7 represents herding during the global financial crisis. It is expected to be significantly negative if herding exists during the crisis. The coefficient γ_8 represents herding during normal times and it can be compared with γ_7 for the asymmetric effect of herding between the crisis period and normal period.

All the equations above are estimated by OLS method and employ Newey-West (1987)consistent standard errors to counter heteroskedasticity and autocorrelation problems.

The data includes daily 135 stock prices divided into 20 industries, from 02nd Jan/2007 to 31st Dec/2017. The sample includes all stocks listed before 01st Jan/2007. The total observations is 373,270. All stocks are listed onHanoi stock exchange (HNX) or Ho Chi Minh stock exchange (HOSE). The data is taken from Datastream, Thomson Reuters.

Table 1 below shows descriptive statistics. Due to the unavailability of data, each industry's CSAD has number of observations from 2660 to 2741. No variables are stationary since the null hypothesis of no unit root is rejected for all variables. The market return has mean of around 0 but big standard deviation. This is because Vietnam stock market experiences fluctuating times like 2008 global financial crisis.

5. EMPIRICAL RESULT

Table 2 below demonstrates the estimated results of herding for the whole market, each industry at 2 states, up market and down market. For the whole market, herding is evident as the coefficient g_2 is significantly negative, which is consistent with previous studies such as Le and Truong (2014), Phan and Zhou (2014), Bui et al. (2015), Vo and Phan (2016), Vo and Phan (2017). Herding is stronger in up market than down market since the coefficient g_3 is higher than the coefficient γ_4. The result is consistent with Bui et al. (2015) and Bui et al. (2017). All 20 industries, except for construction shows the evidence of herding because of having negative significant g_2, which is consistent with Bui et al. (2017). 15 out of those 19 industries shows that herding is more evident in up market than down market. Only 2 industries, including pharmacy, health, chemical and mineral shows the opposite direction. The remaining 2 industries, including electricity, oil, gas and banking, insurance industries do not show the herding asymmetry between up and down market.

Table 3 below shows the empirical result of herding under extreme up and down market. Based on the sign and significance of γ_5 and γ_6, for the whole market, herding is not evident under both extreme up and down market. The result is not consistent with Vo and Phan (2017). For 20 industries, none of γ_5 and γ_6 is negatively significant, so no industries shows herding under extreme market conditions.

Table 4 below shows herding during 2008 global financial crisis. For the whole market, herding is evident during the crisis because of the negative sign and marginal significance of γ_7 at 10%. The result is inconsistent with Vo and Phan (2017) who shows the absence of herding during the crisis. The difference is probably because of the difference in the method of calculating R_{mt}. My study applies equally weighted average market return while Vo and Phan (2017) applies weighted average market return. Since γ_8 is higher than γ_7 in absolute value, herding during normal period is stronger than herding during crisis. Among 20 industries, 10 industries, including: Real estate; rubber; securities; pharmacy, health and chemical; education; mineral; electricity, oil and gas; steel; food; construction show the evidence of herding during the crisis because of the negative significance of γ_7. 8 out of those 10 industries shows that herding is stronger in normal period than crisis period. Construction industry shows the opposite direction. Pharmacy, health and chemical industry shows the equality of herding between 2 periods. The weaker herding during the crisis implies that investors are less likely to follow market consensus during crisis.

6. CONCLUSION

The study investigates herding behavior in Vietnam stock market at sectorial level. Herding behavior is also examined under up and down market, extreme market condition, 2008 global financial crisis period. The study employs the cross-sectional absolute deviation (CSAD) method developed by Chang et al. (2000). The data contains daily 135 stock prices from 20 industries, from 02nd Jan/2007 to 31st Dec/2017. Those stocks are listed on Hanoi stock exchange (HNX) or Ho Chi Minh stock exchange (HOSE).

The estimated results demonstrate that herding is found evident for the whole Vietnam stock market, under both up and down market. Herding is stronger in up market than down market, which is consistent with Bui et al. (2015) and Bui et al. (2017). At sectorial level, 19 out of 20 industries shows the evidence of herding and 15 out of those 19 industries shows the stronger herding during up market than down market. The remaining 4 industries shows the opposite direction or equality. However, under extreme up and down market conditions, the whole market and all industries do not show the evidence of herding. During 2008 global financial crisis, the whole Vietnam stock market shows the marginally significant evidence of herding, which is not consistent with Vo and Phan (2017). Herding is found to be weaker during the crisis period than normal periods. At sectorial level, a half of 20 industries show the evidence of herding during

the crisis and 8 out of those industries shows the weaker herding during the crisis period than normal period.

One limitation of the study is that it overlooksstocks listing on Vietnam stock exchanges from 2007, so the sample may not represent for the whole population. I suggest that future study should include those stocks to examine for the presence of herding. Future study can also examine herding under different extreme market conditions from the study such as at 1% or 10% up and down tail of market return distribution.

Table 1: Descriptive statistics

Variable	Obs	Mean	SD	Min	Max	ADF test
CSAD (the whole market)	2741	1.83	0.49	0.40	4.42	-10.104***
$CSAD_j$ (Real estate)	2660	1.55	0.95	0.03	7.44	-12.829***
$CSAD_j$ (Rubber)	2681	1.47	1.12	0.00	7.54	-13.02***
$CSAD_j$ (Securities)	2621	1.51	1.17	0.00	8.35	-11.724***
$CSAD_j$ (Information technology)	2682	2.07	0.99	0.03	12.00	-14.249***
$CSAD_j$ (Oil and gas)	2682	1.65	1.13	0.02	14.32	-14.868***
$CSAD_j$ (Tourism)	2741	1.95	1.36	0.00	18.12	-12.916***
$CSAD_j$ (Pharmacy, health and Chemical)	2740	1.56	1.02	0.01	8.20	-13.971***
$CSAD_j$ (Education)	2741	2.10	1.05	0.01	8.49	-11.319***
$CSAD_j$ (Mineral)	2682	1.75	1.08	0.03	8.61	-12.372***
$CSAD_j$ (Electricity, oil and gas)	2682	1.34	0.66	0.11	5.33	-12.029***
$CSAD_j$ (Banking and insurance)	2741	1.57	0.94	0.00	10.75	-13.295***
$CSAD_j$ (Plastics and packing)	2741	1.95	0.79	0.15	5.71	-13.483***
$CSAD_j$ (Manufacturing and business)	2741	1.85	0.69	0.10	5.79	-12.05***
$CSAD_j$ (Steel)	2713	1.60	0.96	0.01	10.08	-13.618***
$CSAD_j$ (Food)	2741	1.88	0.71	0.21	6.04	-13.224***
$CSAD_j$ (Commerce)	2681	1.68	0.94	0.02	6.66	-13.928***
$CSAD_j$ (Aquiculture)	2741	1.81	0.91	0.02	10.30	-12.996***
CSADj (Logistics)	2741	2.11	0.75	0.32	6.99	-11.631***
CSADj (Construting material)	2741	2.26	0.79	0.22	10.62	-10.483***
$CSAD_j$ (Constrution)	2741	2.24	1.11	0.02	18.15	-14.223***
Rm	2741	-0.02	1.47	-7.02	6.23	-16.983***
|Rm|	2741	0.98	1.09	0.00	7.02	-8.660***
R^2m	2741	2.15	4.87	0.00	49.28	-10.013***

***: means that null hypothesisof stationary is rejected at 1%

Table 2: Herding behavior of the whole, up and down market

	Both states			Up market			Down market		
	g_0	g_1	g_2	g_0	g_1	g_3	g_0	g_1	γ_4
The whole market	1.61*** (107.6)	0.37*** (12.36)	-0.07*** (9)	1.59*** (76.83)	0.42*** (9.99)	-0.08*** (7.39)	1.63*** (77.38)	0.34*** (8.28)	-0.06*** (6.02)
Real estate	1.36*** (42.40)	0.41*** (7.17)	-0.09*** (6.29)	1.35*** (29.72)	0.45*** (5.15)	-0.11*** (4.24)	1.36*** (29.35)	0.37*** (4.79)	-0.08*** (4.43)
Rubber	1.21*** (33.05)	0.51*** (9.32)	-0.11*** (8.78)	1.21*** (23.27)	0.51*** (6.22)	-0.11*** (5.53)	1.21*** (23.11)	0.51*** (6.77)	-0.10*** (6.64)
Securities	1.03*** (31.09)	0.81*** (12.88)	-0.14*** (9.52)	1.0*** (22.65)	0.88*** (9.94)	-0.17*** (7.54)	1.0*** (20.95)	0.76*** (8.36)	-0.13*** (6.08)
Information technology	1.93*** (56.8)	0.31*** (6.41)	-0.08*** (7.15)	1.93*** (40.7)	0.32*** (4.51)	-0.08*** (4.90)	1.93*** (38.96)	0.31*** (4.55)	-0.07*** (5.14)
Oil, gas	1.38*** (40.12)	0.43*** (7.46)	-0.07*** (5.02)	1.33*** (27.92)	0.55*** (6.46)	-0.10*** (4.73)	1.45*** (28.46)	0.32*** (4.03)	-0.05** (2.44)
Tourism	1.68*** (38.39)	0.43*** (6.94)	-0.07*** (5.12)	1.65*** (27.32)	0.53*** (5.69)	-0.11*** (5.25)	1.7*** (26.74)	0.38*** (4.68)	-0.05*** (2.89)
Pharmacy, health, Chemical	1.30*** (42.32)	0.38*** (8.28)	-0.05*** (4.41)	1.31*** (29.73)	0.34*** (4.68)	-0.04* (1.85)	1.29*** (29.56)	0.4*** (6.58)	-0.05*** (4.21)
Education	1.68*** (51.04)	0.61*** (12.28)	-0.08*** (7.13)	1.62*** (35.42)	0.77*** (10.4)	-0.13*** (7.29)	1.73*** (36.26)	0.49*** (7.54)	-0.05*** (3.51)
Mineral	1.55*** (44.98)	0.38*** (7.30)	-0.08*** (7.23)	1.54*** (33.57)	0.35*** (4.87)	-0.08*** (4.49)	1.58*** (29.95)	0.39*** (5.23)	-0.09*** (5.49)
Electricity, oil, gas	1.16*** (53.80)	0.32*** (8.44)	-0.06*** (6.32)	1.15*** (36.55)	0.33*** (5.45)	-0.06*** (3.68)	1.18*** (38.47)	0.31*** (6.09)	-0.06*** (5.06)
Banking, insurance	1.34*** (46.35)	0.34*** (7.45)	-0.05*** (4.14)	1.34*** (34)	0.32*** (4.98)	-0.05*** (2.57)	1.34*** (30.96)	0.35*** (5.43)	-0.05*** (3.2)
Plastics, packing	1.77*** (68)	0.35*** (8.53)	-0.08*** (7.83)	1.72*** (47.6)	0.44*** (7.31)	-0.11*** (7.1)	1.81*** (48.42)	0.3*** (5.37)	-0.06*** (4.78)
Business Manufacturing	1.67*** (75.66)	0.34*** (9.17)	-0.07*** (8.14)	1.7*** (55.42)	0.36*** (6.7)	-0.09*** (6.27)	1.62*** (51.12)	0.36*** (6.88)	-0.07*** (5.83)
Steel	1.40*** (44.78)	0.4*** (7.91)	-0.09*** (7.34)	1.4*** (31.51)	0.43*** (5.89)	-0.11*** (5.93)	1.4*** (31.59)	0.38*** (5.81)	-0.08*** (5.13)
Food	1.61*** (69.01)	0.43*** (9.93)	-0.07*** (6.28)	1.63*** (51.82)	0.43*** (7.36)	-0.08*** (5)	1.58*** (47.47)	0.45*** (7.53)	-0.07*** (4.53)
Commerce	1.53*** (48.73)	0.34*** (7.53)	-0.09*** (8.43)	1.53*** (34.48)	0.39*** (5.97)	-0.1*** (6.56)	1.53*** (34.03)	0.31*** (4.83)	-0.08*** (5.48)
Aquiculture	1.66*** (56.4)	0.32*** (6.67)	-0.07*** (6.46)	1.65*** (42.43)	0.33*** (5.3)	-0.08*** (4.62)	1.66*** (37.97)	0.3**** (4.39)	-0.07*** (4.4)
Logistics	1.93*** (78.88)	0.32*** (7.42)	-0.06*** (5.48)	1.93*** (59.62)	0.33*** (5.94)	-0.07*** (4.55)	1.92*** (53.44)	0.32*** (5.19)	-0.06*** (3.74)
Constructing material	2*** (83.93)	0.40*** (9.91)	-0.07*** (7.45)	2.02*** (58.04)	0.43*** (7.03)	-0.08*** (5.23)	2.02*** (59.65)	0.37*** (7.16)	-0.06*** (5.38)
Construction	2.26*** (59.31)	-0.01 (0.09)	-0.01 (0.66)	2.24*** (41.61)	-0.01 (0.07)	-0.01 (0.23)	2.29*** (41.84)	-0.01 (0.18)	-0.01 (0.56)

Note: T-statistics in parenthesis. ***, **: means that the coefficients are significant at 1% and 5%.Both states, up market and down market are empirical results of the models 1, 2 and 3below respectively. Newey-west (1987) standard errors is applied to counter heteroskedasticity and autocorrelation problems.

$$CSAD_{j,t} = g_0 + g_1|R_{mt}| + g_2 R^2_{mt} + u_t \qquad (1)$$

$$CSAD_{j,t} = g_0 + g_1|R_{mt}| + g_3 R^2_{mt} + u_t, \; if \; R_m > 0 \qquad (2)$$

$$CSAD_{j,t} = g_0 + g_1|R_{mt}| + \gamma_4 R^2_{mt} + u_t, \; if \; R_m < 0 \qquad (3)$$

Table 3: Herding behavior of extreme up and down market

	Extreme up market				Extreme down market		
	g_0	g_1	γ_5		g_0	g_1	γ_6
The whole market	3.13*** (3.46)	-0.52 (1.11)	0.04 (0.78)		4.47*** (6.73)	-1.13*** (3.55)	0.12*** (3.21)
Real estate	5.17*** (3.29)	-1.8** (2.03)	0.19 (1.60)		5.32*** (3.05)	-1.8** (2)	0.19* (1.69)
Rubber	2.73* (1.76)	-0.42 (0.5)	0.02 (0.15)		4.88*** (2.67)	-1.17 (1.3)	0.08 (0.75)
Securities	4.40*** (3.17)	-1.25* (1.8)	0.13 (1.6)		5.69*** (2.62)	-1.8 (1.65)	0.19 (1.5)
Information technology	3.58*** (2.87)	-0.75 (1.14)	0.07 (0.84)		4.29*** (3.09)	-0.94 (1.37)	0.08 (1.01)
Oil and gas	3.78** (2.17)	-0.94 (1.06)	0.10 (1.01)		3.33*** (2.05)	-0.62 (0.73)	0.07 (0.63)
Tourism	3.61*** (2.19)	-0.57 (0.69)	0.03 (0.34)		2.17 (1.16)	0.19 (0.21)	-0.03 (0.764)
Pharmacy, health, Chemical	-0.18 (0.1)	1.07 (1.07)	-0.12 (0.99)		0.19 (0.12)	1.03 (1.26)	-0.13 (1.41)
Education	4.36*** (2.68)	-0.77 (0.93)	0.07 (0.7)		2.61** (2.16)	-0.04 (0.07)	0.02 (0.27)
Mineral	4.02*** (3.02)	-1.05 (1.52)	0.10 (1.25)		3.73*** (2.92)	-0.85 (1.33)	0.07 (1)
Electricity, oil, gas	3.92*** (3.24)	-1.04* (1.67)	0.09 (1.27)		4.15*** (3.34)	-1.32* (1.92)	0.14 (1.56)
Banking, insurance	4.16*** (2.63)	-1.22 (1.45)	0.15 (1.45)		4.55*** (3.55)	-1.28** (2.09)	0.14** (2.1)
Plastics, packing	4.89*** (5.3)	-1.37*** (2.87)	0.13** (2.19)		4.98*** (5.02)	-1.25** (2.52)	0.12** (2.11
business Manufacturing	4.11*** (4.04)	-1.04** (2.02)	0.10 (1.6)		4.26*** (4.08)	-0.92* (1.81)	0.08 (1.34)
Steel	4.42*** (3.45)	-1.34* (1.95)	0.13 (1.5)		5.12*** (3.97)	-1.55** (2.5)	0.15** (2.23)
Food	2.98** (2.02)	-0.43 (0.54)	0.04 (0.38)		4.73*** (4)	-1.13* (1.85)	0.12 (1.55)
Commerce	4.234*** (3.79)	-1.18** (2.13)	0.11* (1.66)		4.04*** (3.14)	-0.93 (1.41)	0.07 (0.85)
Aquiculture	2.7 (1.51)	-0.27 (0.3)	0.01 (0.04)		5.40*** (4.38)	-1.69*** (2.83)	0.17** (2.42)
Logistics	2.3* (1.78)	-0.06 (0.09)	-0.01 (0.02)		6.13*** (6.85)	-1.86*** (4.13)	0.2*** (3.8)
Constructing material	2.81** (2.21)	-0.18 (0.27)	0.02 (0.17)		4.54*** (5.45)	-0.96** (2.42)	0.1** (2.26)
Construction	0.96 (0.65)	0.48 (0.62)	-0.04 (0.52)		3.65*** (3.01)	-0.78 (1.31)	0.09 (1.28)

*Note: T-statistics in parenthesis. ***, **: means that the coefficients are significant at 1% and 5%.*

Extreme up and down market demonstrate empirical results of model 4 and 5below respectively. Newey-west (1987) standard errors is applied to counter heteroskedasticity and autocorrelation problems.

$$CSAD_{j,t} = g_0 + g_1|R^{extreme\ up}_{mt}| + \gamma_5 R^{2\ extreme\ up}_{mt} + u_t, R_{mt} \text{ in 5\% up tail of distribution} \qquad (4)$$

$$CSAD_{j,t} = g_0 + g_1|R^{extreme\ down}_{mt}| + \gamma_6 R^{2\ extreme\ down}_{mt} + u_t, R_{mt} \text{ in 5\% down tail of distribution} \qquad (5)$$

Table 4: Herding behavior during 2008 global financial crisis

	Extreme up market				
	g_0	g_1	g_2	γ_7	γ_8
The whole market	1.6*** (99.64)	0.11* (1.75)	0.43*** (12.61)	-0.02* (1.82)	-0.07*** (7)
Real estate	1.34*** (36.57)	0.3*** (3.09)	0.46*** (5.66)	-0.07*** (3.37)	-0.11*** (4.03)
Rubber	1.2*** (31.72)	0.38*** (3.6)	0.52*** (8.14)	-0.09*** 94.14)	-0.1*** (5.62)
Securities	0.1*** (28.9)	0.61*** (5.91)	0.94*** (13.28)	-0.09*** (4.12)	-0.18 (10.01)
Information technology	1.9*** (53.06)	-0.11 (1.48)	0.42*** (7.21)	0.01 (0.03)	-0.09*** (5.6)
Oil and gas	1.36*** (38.59)	0.25*** (2.66)	0.51*** (8.02)	-0.03 (1.4)	-0.09*** (5.54)
Tourism	1.66*** (36.66)	0.09 (1.15)	0.51*** (6.9)	-0.01 (0.73)	-0.08*** (4.04)
Pharmacy, health, Chemical	1.29*** (41.46)	0.27*** (3.57)	0.37*** (7.26)	-0.04** (2.26)	-0.04*** (2.58)
Education	1.66*** (48.53)	0.35*** (4.05)	0.68*** (12.01)	-0.03* (1.84)	-0.09*** (6.04)
Mineral	1.53*** (43.03)	0.22** (2.31)	0.47*** (7.89)	-0.05** (2.38)	-0.11*** (6.99)
Electricity, oil, gas	1.15*** (46)	0.16** (2.55)	0.36*** (6.55)	-0.03*** (2.59)	-0.07*** (3.7)
Banking, insurance	1.33*** (44.57)	0.27*** (3.29)	0.36*** (7.26)	-0.03 (1.59)	-0.05*** (3.84)
Plastics, packing	1.74*** (62.2)	-0.01 (0.08)	0.47*** (9.05)	-0.01 (0.35)	-0.1*** (6.63)
business Manufacturing	1.64*** (72.45)	-0.04 (0.59)	0.43*** (10.54)	-0.01 (0.36)	-0.08*** (6.99)
Steel	1.38*** (40.98)	0.17** (2.29)	0.47*** (7.59)	-0.04** (2.52)	-0.11*** (6)
Food	1.6*** (62.76)	0.18** (2.43)	0.48*** (8.77)	-0.03** (2.12)	-0.07*** (4.14)
Commerce	1.5*** (45.24)	-0.03 (0.38)	0.45*** (8.06)	-0.02 (1.21)	-0.1*** (6.65)
Aquiculture	1.63*** (52.84)	-0.09 (1.33)	0.41*** (7.08)	-0.01 (0.34)	-0.08*** (4.77)
Logistics	1.91*** (74.53)	-0.02 (0.26)	0.38*** (7.53)	-0.01 (0.46)	-0.06*** (3.85)
Constructing material	1.2*** (77.69)	0.06 (0.87)	0.5*** (10.28)	-0.01 (0.43)	-0.08*** (6.21)
Construction	2.24*** (56.48)	-0.33*** (4.49)	0.08 (1.23)	0.05*** (3.4)	-0.02 (0.94)

Note: T-statistics in parenthesis. ***, **,*: means that the coefficients are significant at 1%, 5% and 10%.

The table demonstrates empirical results of model 6 below. Newey-west (1987) standard errors is applied to counter heteroskedasticity and autocorrelation problems.

$$CSAD_{j,t} = g_0 + g_1 D_{1*}|R_{mt}| + g_2(1-D_t)_*|R_{mt}| + \gamma_7 D_{1*}R^2_{mt} + \gamma_8(1-D_t)_*R^2_{mt} + u_t \quad (6)$$

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FACTORS AFFECTING BANK LIQUIDITY RISK IN VIETNAM

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ABSTRACT: *The paper examines the factors impact on the bank's liquidity risk for 12 Vietnamese commercial banks during the period from 2007 to 2017. The results show that there is a significant positive relationship between Return on Assets, loans to total assets, lending rate and liquidity risk ratio. In addition, non-performing loans have a significant negative relationship with bank liquidity risk. A group of solution is suggested in order to minimize the bank liquidity risk in Vietnam.*

Keywords: *bank, liquidity risk, panel data*

1. INTRODUCTION

According to Basel (2008), "Liquidity risk is the risk that a financial entity which cannot fully find capital sources to fulfill obligations without affecting daily business activities and its financial situation". Liquidity risk is the ability in which banks cannot perform financial obligations quickly, or they will have to mobilize additional funds with high expense or sell their assets with low price. During the global financial crisis, many commercial banks struggle with liquidity risk. That was the reason why Basel (2010) has paid more attention to liquidity risk. Specifically, Basel suggest to promote the ability to restore liquidity in the short term through specific regulations on Liquidity Coverage Ratio (High quality liquid assets/ Total net cash outflow over 30 days), and the long term through Net stable funding ratio (= available stable funding/ Required stable funding)

In Vietnam, the most recent regulation related to liquidity risk in bank is Circulars 13/2018/TT-NHNN and Circulars 16/2018/TT-NHNN, in which commercial banks and other credit institutions have to maintain the strong liquidity management system. Understanding which factors affecting the liquidity risk is, there for, play an important role for commercial banks. In this paper, we examine the determinants impact the liquidity risk in commercial banks of Vietnam from 2007 to 2017. The next section shows the literature review, following the section 3 and 4 presents the research methodology and results. The last sections is about conclusion and recommendations.

2. LITERATURE REVIEW

The study analysis about factors affecting liquidity risk in bank usually consists of two groups: (i) micro factors which are bank-specific characteristics and (ii) macro factors which are macroeconomic determinants.

Macro factors

Economic growth: Economic growth affects the entire economy and society, in which the banking

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sector is affected immensely powerful. In theory, during the economic recession, banks will tend to reserve much more liquidity and limit loans (Rauch et.al (2010), Vodova (2013). In contrast, in the period of economic growth, banks will reduce the liquidity reserves and have more loans to make profit. Higher returns come with higher risk, so the economic growth and liquidity risk direct proportion (Chung-Hua Shen et.al , 2009).. Thanks to the economic growth ,the system of Bank's liquidity assets increase significantly. That also is found in the study of Lowe (2002), Garr (2013).

Inflation: Fisher's model (1930) defines market rate which includes real interest rate and expected inflation. Inflation rate affects division financial resources efficiently. Chung Hua Shen et al (2009) indicates that inflation rises, the cost of borrowing fell. This is beneficial to the borrower rather than the lender because the borrower will make profit due to increase of the price of goods which are bought by borrowing money. According to Vodova study (2013), the change of inflation rate affects in the same direction with liquidity risk. Castro (2013) agrees with this view. He said that when inflation rises, although real interest rates that borrowers have to bear in this case reduced, their real incomes are reduced, the solvency of customers also reduce. Some other views also show similar correlations, such as Garr (2013), Mkukwana (2013)

Interest rate: Commercial banks set up their borrowing and lending interest rate, but it fluctuates in a certain range. This is considered one of the factors influence on liquidity risk. If basic rate increases, it makes lending rate increase, volume of loan would reduce. That can decrease liquidity risk but not be good for profit target of banks. According to Lucchctta(2007), and Wilbert (2014) interest rate has significant influence to the Bank's liquidity supply. Fadarc (2011) after researching liquidity risk and the financial crisis of Nigieria shows that the factor which affects liquidity risk is interest rate. So the interest rate and bank' liquidity has the same dimensional relationship. This relationship is also found in the study of the Boss (2006), Folawewo and Tennant (2008), Ramlall (2009).

Micro factors

The size of bank: when the bank holds a large amount of assets, the bank will active in all activities of receiving deposits, loans. At that time, the amount surplus will always be safe high liquidity. In addition, large banks often receive the trust of other banks, so they can take advantage in the interbank market or received supports from the last lenders (Delechat et al 2012). The bigger the bank, the better it gets. On the other hand, the "too big to fail" argument gives the impression that large banks, due to their implicit assurances, can mitigate the cost of raising capital and that allows them to invest in riskier assets. Therefore, the mobilized capital decreased and the total assets decreased, that lead to liquidity risk, bank size has oppositely effect on the liquidity of banks. However, from a different point of view, the size of the bank has not affected liquidity risk. This is also evidenced by Valla's study with Vodová (2013) who argue that size does not have a significant impact on liquidity risk

Credit concentration: Lending is one of the most important operations of commercial banks. These loans also often provide more returns than other assets such as investing in securities. However, they are potential risky. Holding a large amount of loans will increase the risk that a bank may face, the risk may be credit risk, liquidity risk and some other specific risks. As a result, bank' liquidity is also affected by the lending ratio. Loans are double-edged sword coexist in the banking system. (Aspachs et al 2005; Lucchetta, 2007).

Credit risk: The main activity of the bank is to receive and lend the money from customers in order to make a profit. So if a loan falls into a state of insolvency, it means the rotation of the bank activities will delay at a point and greatly affect the total capital of the bank. According to Duttweiler (2009), in order to

maintain liquidity, on the one hand, commercial banks must ensure that the total value of assets is greater than the debts at all times. If loans is not able to recover and losses in the securities business, it will make the value of the property to be lower than the debt and lead to bank insolvency, may must close or sell assets to another bank. Some studies of Iqbal (2012); Vong and Chan (2009) showed the same relationship between NPL and liquidity risk. The bigger the NPL are, the more liquidity risk are. That require commercial banks to minimize NPL. In addition, some studies that suggest that there is a negative relationship between credit risk and liquidity risk Raghavan (2003) Cai and Thakor (2008), Wagner (2007).

Profitability of the bank: Profitability is a very important tool in evaluating the banking busines. It is also a factor which would effect on bank' liquidity. Basing on the theory of "expected bankruptcy costs" (Berger, 1995), a low-interest bank would prioritize lending to make profit, thus making total asset particularly high liquidity assets are declining. Conversely, if the bank has high profitability, it will limit excessive credit growth to invest in high liquidity assets (Bunda and Desquilbet, 2008). Thus, the higher the profitability rate is, the greater the value of liquidity assets is. Profitability ratios are often used as ROA and ROE. ROA is a measurer in managing and using of asset to make profit. ROE measures of profitability on the equity of a bank.

3. RESEARCH METHODOLOGY

The aim of the research is to examine the model and evaluate the factors affecting the liquidity risk of commercial banks in Vietnam. Based on the theory, the researchers have applied and extended previous researches, and use of variables in accordance with the commercial banks in Vietnam. Research suggests the following model:

$$LDR_{i,t} = \beta_0 + \beta_1.SIZE_{i,t} + \beta_2.ROA_{i,t} + \beta_3.TLA_{i,t} + \beta_4.NPL_{i,t} + \beta_5.GDP_{i,t} + \beta_6.INF_{i,t} + \beta_7.RATE_{i,t}$$

In which:

(Loan to Deposit Ratio): dependent variables which is the index measuring liquidity risk of commercial banks, calculated as the ratio of loans to short-term deposit. If the ratio is too high, it means that the bank may not have enough liquidity to cover any unforeseen fund requirements. Conversely, if the ratio is too low, the bank may not be earning as much as it could be.

Based on the collected data and the characteristics of the commercial banks in Vietnam, the researchers examined the impact of two groups of factors:

(i) The micro-factors group characterized by individual banks: size of total assets (SIZE), the ratio of loans to total assets (TLA), Return on Assets (ROA), the non-performing loan ratio (NPL);

(ii) The macro-factors group including: economic growth (GDP), inflation (INF), the average lending rate (RATE). Table 1 show the specific terms of content, calculations and expected relationship between factor and liquidity risk.

Table 1. Description of the variables used in the model and how to measure

	Variables	**Symbol**	**Description**	**Expected sign**
			Dependent variable	
1	***Loan to deposit ratio***	LDR	= loan/(deposits from customers + deposits from other credit institutions)	
			Independent variable	
2	Size of total assets	SIZE	= Logarit(total asset)	-

3	The ratio of loans to total assets	TLA	= Loans (customers + other credit institutions) / Total assets	+
4	Return on Assets	ROA	= Net income / Total assets	+
5	Non-performing loan ratio	NPL	= Total non-performing loans / Total loans	-
6	Economic growth	GDP		+
7	Inflation	INF		-
8	The lending rate	RATE		+/-

The micro-economic data was collected from the financial reports, the annual reports of 12 commercial banks in Vietnam in the period 2007-2017. The macro data was collected from official sources and credibility from the General Statistics Office of Vietnam, Ministry of Finance, The State Bank of Vietnam for the period of the study 2007-2017.

The regression analysis using panel data can use three models to analyze that is: First, the Pooled OLS model: the model is not in control of each specific characteristics of each of the banks in the research. In fact, this is not reasonable because each bank has their-own characteristics and the situation is different year by year. Second, FEM (Fixed Effects Model): is developed from Pooled OLS model when there is more control over each special omen between different banks, and there is correlation between residual part of the model and the independent variables. Third, REM (Random Effects Model): is the random effect model, also developed from the tissue Pooled OLS ordered and when to have more control over each of the different characteristics of the banks, but there is no correlation between residual part of the model and the independent variables established.

4. RESULTS

Descriptive statistics

Table 2 - summarizes statistical information about the variables used in the model. The rate of LDR from 2007 to 2017 is 64.88% with a standard deviation is 17.72%. The rate of average liquidity risk is 64.89% with the smallest value is 18.84% and the maximum value is 99.59%; nevertheless liquidity risk difference between the banks and the years are not greater with standard deviation is 17.7%. In addition, based on the table, we can also have the general assessment of the independent variables - the factors affecting the liquidity risk of the bank through the parameters of the average value, standard deviation and fluctuating margin.

Table 2.Descriptive statistics of the variables

Variable	Obs	Mean	Std. Dev.	Min	Max
LDR	132	64.8854	17.72058	18.84	99.59184
SIZE	132	8.143035	0.4829366	6.383572	9.080007
ROA	132	1.111643	0.9748852	-5.99	5.12
TLA	132	51.84967	14.1514	10.59	74.65
NPL	132	2.037879	1.090488	0.08	5.35
GDP	132	6.276364	0.8917769	5.23	8.48
INF	132	8.410909	6.11604	0.63	19.9
RATE	132	11.22727	3.097231	7.6	17

Correlation and multicollinearity

Table 3 showed the correlation matrix between pairs of variables used in the model, indicating these variables have relatively loose correlation with absolute value from 0.0207 to 0.4174, except the correlation between pairs of dependent variable TLA and independent variables LDR is 0.8983. According to La Porta et al (2002) when the correlation between the independent variables exceeds 0.9, the model was capable of multi-collinear defects. Such models did not concern the research on the phenomenon of multi-collinear.

Table 3.Pearson correlation matrix between the variables in the model

	LDR	SIZE	ROA	TLA	NPL	GDP	INF	RATE
LDR	1.0000							
SIZE	0.2932	1.0000						
ROA	0.0132	-0.2025	1.0000					
TLA	0.8983	0.4174	-0.0822	1.0000				
NPL	-0.2793	-0.1935	-0.1159	-0.2371	1.0000			
GDP	-0.0207	-0.1835	0.1961	0.0246	-0.0747	1.0000		
INF	-0.0401	-0.3816	0.2503	-0.2742	0.0313	0.1627	1.0000	
RATE	-0.0418	-0.2993	0.1411	-0.3092	0.0505	-0.1253	0.8947	1.000

VIF (variance inflation factor) is used to examine the phenomenon of autocorrelation coefficient in the model. VIF is an indicator which used to to test the multicollinearity phenomenon of regression equation. If VIF > 10, multicollinearity phenomenon will occur. Test results showed that the coefficient of the VIF are smaller than 10 should the phenomenon multicollinearity in the model is assessed as not serious.

Table 4.Test multicollinearity phenomenon

Variable	VIF	1/VIF
INF	8.69	0.115094
RATE	8.38	0.119356
GDP	1.68	0.595693
SIZE	1.43	0.700718
TLA	1.33	0.754282
ROA	1.15	0.872452
NPL	1.11	0.900998
Mean VIF	3.39	

So we could conclude the majority of the variables in the model did not have the multicollinearity phenomenon with each other and this will be a positive sign in the testing and selection of appropriate econometric model

Results of research model

Regression includes 3 models: Pooled OLS, FEM and REM. According to the results of regression model of OLS the model explained was 87.15% fluctuation of the liquidity risk of 12 banks. However, to increase the fit of the model as well as reviews are cross-impact of the variables of time (year) and object (bank) need to use regression analysis to the effect fixed (Fixed effect model-FEM) or random (Random effects model-REM). This method has been applied in the study of the EbruCaglayan et al (2010). Regression results according to FEM and REM are outlined in table 5

Table 5. Regression Results of Pooled OLS, FEM and REM models

LDR	Regression Results		
	OLS	FEM	REM
SIZE	-2.2532	-5.2701**	-2.2255
ROA	0.0974	0.6614	1.0000**
TLA	1.1236***	0.9893***	1.2194***

NPL	-1.0683**	-0.8584	-0.9959*
GDP	-0.4721	-0.7139	-0.4746
INF	-0.1913	-0.2379	-0.1921
RATE	1.6984***	1.2916**	1.6741***
C	5.7486	49.5512**	6.7413*
R^2	87.84%	86.71%	87.84%
F-test	prob(F-statistic) =0.000	prob(F-statistic) =0.000	prob(F-statistic) =0.000

*Note: * ; ** and *** mean significant respectively at level 10%, 5% and 1%*

Source: Regression with Stata

Hausman-test is applied to test which model, the FEM or REM estimate method is more suitable. When running the test shows the Prob> chi2 = 0.4599 greater than 0.05 so Random effects model (REM) more suitable than Fixed effect model (FEM).

So the model regression model is as follows:

$LDR = 6.7413 - 2.2255*SIZE_{i,t} + ROA_{i,t} + 1.2194*TLA_{i,t} - 0.9959*NPL_{i,t} - 0.4746*GDP_{i,t} - 0.1921*INF_{i,t} + 1.6741*RATE_{i,t}$

5. CONCLUSION AND RECOMMENDATION

According to the results obtained from the Random effects model (REM) in Table 5, there are 4 factors that impact significantly on the rate of liquidity risk (LDR) of the bank, which is factors: Return on Assets (ROA); The ratio of loans to total assets (TLA); Non-performing loan ratio (NPL) and interest rates (RATE) impact on liquidity risk of the bank.

Return on Assets (ROA) have an impact in the same way to LDR of commercial banks with the significance level of 10%, while the higher profitability ratio, the greater liquidity risk. Relationship so the same conclusion, the research of Valla and Escorbiac (2006) and Vodova (2013). In contrast to a research point of Bonfim and Kim (2008), Bui Nguyen Kha (2016) and Vu Thi Hong (2011). Delechat et al (2012) explain this, because the bank's profitability is high, often tend to be less hold liquid assets, they can easily find sources other liquid when need. Thus, the liquidity risk of banks higher. Besides the high liquidity assets often have low profitability ratio should remain low liquidity assets also helped banks have higher profitability. Therefore, Vietnamese commercial banks should strengthen the profitability by determine the reasonable size and structure of assets – liabilities.

The ratio of loans to total assets (TLA) with LDR positive impact with the significance level of 10%. Thus, the ratio of loans to total assets increased, the liquidity risk of the bank also increased. Bonin and associates (2008) suggest that when holding an amount of lending to customers is too large will cause the bank at risk when these withdrawals big money and unpredictable while loans do not promptly final settlement, which lead to the loss of liquidity of banks. Indriani (2004), Angora and Roulet (2011) agrees on the positive relationship between the ratio of loans to customer with the liquidity risk of banks. NPL ratio (NPL) have inverse ratio relationship with the liquidity risk ratios with the significance level of 10%. This relationship is consistent with research by Vodova (2011) and Vu Thi Hong (2012) suggested that between NPL and liquidity risk relationship is inversely proportional. The reason is that banks NPL ratio high will tend to move into assets with high liquidity because preventing the worst case occur, the bank still has assets of high liquidity to meet needs payment. This conclusion is the same point with Raghavan's research (2003) Cai and Thakor (2008), Wagner (2007). Because lending is a major activity and accounts for a large proportion in Vietnamese commercial banks, so the bank should manage the credit portfolio which is fit with their own risk appetite.

The average lending rate (RATE) impact covariates with the liquidity risk of banks with significant levels of 0.001% for the loan rate on deposits. This result is consistent with the conclusions of the research groups of Valla and Escorbiac (2006), Vodova (2013), Boss et al(2009), Folawewo and Tennant (2008), Ramlall (2009). They indicated the same direction relations between the liquidity of banks with the interest rate of the general economy and in particular interest rates. When interest rates rise, the cost of borrowing increased and increasing of the bad debt, affecting the ability to recover a debt from which increases the liquidity risk of banks. Therefore, maintaining the interest rate at a reasonable level and commercial banks should also act more actively in both market I and II which will stabilize bank liquidity in Vietnam.

6. CONSTRUCTION OF REFERENCES

Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full. References must be listed at the end of the paper. Do not begin them on a new page unless this is absolutely necessary. Authors should ensure that every reference in the text appears in the list of references and vice versa. Indicates references by (Hair and alii, 2006)or [1] in the text. Some examples of how your references should be listed are as follows:

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MULTI-STAKEHOLDER AND CORPORATE INTERPLAY:
A CASE ON INDONESIAN PALM OIL PLANTATION COMPANY

Rafiqa Rana*

Abstract: *This study focuses on the interaction between the stakeholders and companies by analyzing social complexity. The qualitative research approach was employed. Thirty-four various stakeholders were interviewed deeply in unstructured way to collect information. The stakeholders' diverse goals were found to be characteristic of a purposeful system, as is the case with social systems, but were identified as a potential source of conflict. Although the factory is a corporate shareholder entity, local interactions were found to be important in shaping the future. Critical factors, such as haulier inefficiencies, palm supply and freshness quality, were found to have significant implications for the sustainability of the factory area.*

***Keywords:** social complexity, stakeholders interplay, palm oil plantations.*

INTRODUCTION

The plantations industry can be considered complex due to the multiple interactions that have to occur between diverse stakeholders to produce a range of products. The primary stakeholders surrounding the plantations site are the planters who grow the plants and the hauliers who are responsible for transporting the harvest to the factory. An alternative approach to enhancing performance in the value chain, which focuses on the interrelationships between the people behind the palm oil, is explored in this paper.

Traditional value chain analysis may emphasize the activities required to put forward a product, but may neglect developing or nurturing the inter-relations between the diverse stakeholders who are critical in jointly crafting the future. Relevant research is thus required to identify the multifaceted problems faced by the stakeholders in the plantations industry.

Social complexity theory will be used as a framework to map out the challenges that arise from multiple stakeholder interactions in the plantation business. The main aim of this research is therefore to generate better understanding the complex interplay of the agents in the site in Indonesian context, through the frame of social complexity. The plantation area is therefore characterized by complexity, which stems from a mixture of technical complexity and the multiple interactions of diverse stakeholders.

SOCIAL COMPLEXITY

The plantations business can be considered a system, and using Anderson's (2009) definition of a system, is as a result of interconnected components functioning together. Complexity is an underlying feature of human social systems (Stevenson, 2012). Complexity theory has evolved from a number of theories, and essentially centres on the idea that a system is complex due to the whole being different from the sum of the parts, and emerging from interactions between the parts (Klijn, 2008; Eoyang, 2004).

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Eoyang (2004) illustrates complexity through the use of a metaphor of a tapestry as being an outcome of the relationship between the strands of the different colours. The notions of uncertainty and unpredictability are taken as a given in complexity theory, and provide a contrasting view to the reductionist perspective which emphasises order and stability (Marion & Uhl-Bien, 2001).

Organizations can no longer be comprehended in a mechanistic way, where assumptions and solutions about the whole are based on an analysis of the individual parts (Stevenson, 2012). The notion of a rational actor also comes into question due to disregarding complexity arising from dynamic systems comprising multiple agents (Levy, 2000). Levy (2000) emphasizes that the field of management can generate benefit from the complexity theory by understanding how effective learning and selforganization can result in new forms occurring. Complex systems exhibit a number of characteristics, including self-organization, emergence and nonlinearity (Klijn, 2008).

Self-organization in complex systems derives from the constant interplay between structure and diversity in the system, which respectively gives rise to identity and unpredictability (Eoyang, 2004). Non-linear interactions between agents result in self-organization (Anderson, 2009). Order in a complex system arises spontaneously, rather than from a central source or master plan (Klijn, 2008; Mukherjee, 2008; Escobar, 2013).

The parts in a complex system are intertwined, such that emergent patterns cannot be attributed to any individual part (Eoyang, 2004; Klijn, 2008). Emergence is thus when macro-behavior arises due to the dynamic interactions of multiple agents who follow local rules as opposed to top-down commands (Escobar, 2013). It is furthermore important to note that changes in social systems have unpredictable outcomes due to the complex nature of such systems (Duek, Brodjonegoro & Rusli, 2010).

When a small change can fundamentally alter the behavior of the system, and the whole differs from the sum of the components, then this is known as non-linear behavior (Anderson, 2009). Complexity theory, although used in the biological and physical sciences, can be applied in social systems where non-linearity and complex interactions are present (Levy, 2000).

The nature of being social entails ever-present and defining interactions that cause stability and change (Marion & Uhl-Bien, 2001). Social complexity often presents itself in the form of wicked problems, characterized by stakeholders being unable to precisely define the problem, and having no real way of determining success or having any straightforward solutions on hand (Barry & Fourie, 2010; Australian Government, 2007).

Wicked problems exist because each stakeholder holds a different view of the problem, with no one perspective of the problem being right or wrong (Australian Government, 2007). This is indicative of the mental models that each stakeholder possesses, which is essentially their perspective as to how they view the world. The behavior of agents (individuals, groups or partnerships between groups) is determined by their schema, which leads to an action based on the perception of the environment (Anderson, 2009).

There may be shared schemata between agents, and agent behavior is dependent on other agents' behavior in the system due to the interconnectivity (Anderson, 2009). Social complexity derives from the dynamic interactions of agents who are committed to achieving a particular goal. Parellada (2002) observes that social organizations exist to fulfil a certain objective, and that such systems contain and transmit ideas, values, culture and concepts (these may or may not be common) which influence the dynamics in the system.

Duek et al. (2010) highlight that social systems are characterized by purposeful individuals, who make decisions about their own and the purpose of others. These agents are, however, heterogeneous, autonomous individuals who are purposeful in nature, and strive to fulfil their own objectives (Bogg & Geyer, 2014). Wicked problems are often characterized by internally conflicting goals, with conflict arising due to the inherently independent nature of the agents (Heylighen, Cilliers & Gershenson, 2007).

This point is taken further by Heylighen et al. (2007) in noting the selfish behavior of agents by arguing that they are independent beings whose aim is to accomplish a particular goal through acting on the environment and other agents. Anderson (2009) thus draws attention to how agents improve their own fitness function or payoff, which is dependent on the decisions of other agents. Agents in a social system are confined by social conventions and norms (Rzevski, 2011).

In order to reach a preferred state, agents in dynamic, social systems are able to respond and evolve in response to the actions of other agents through engaging in learning, collaborating with other agents, developing relevant identities and redefining power relations (Potgieter et al., 2007). Agents in purposeful systems are therefore able to learn and adapt (Duek et al., 2010).

A working definition for social complexity will now be proposed, which is based on the work of other authors (Duek et al., 2010; Parellada, 2002; Heylighen et al., 2007; Rzevski, 2011; Cicmil & Marshall, 2015; Austin, 2010; Conklin, 2006; Australian Government, 2007). Social complexity arises when multiple, heterogeneous agents who are bound together in a purposeful system, draw on their own mental models to interpret and find a balance between achieving their own goals and objectives, with that of the common goal responsible for creating the interdependence between the agents.

The mental models will allow the agents to place into perspective, (1) how they define success, (2) which goals to pursue, (3) their own organisational structure and processes, and, (4) what they attribute the causes of the problem to, the severity of the problem and ways to address it. The constructs of power, norms and conventions will, however, limit the freedom that each agent in the system has, and uncertainty and unpredictability in the system derive from this constant tension that agents display as they need to have an individual identity and still achieve success for the system as a whole.

RESEARCH METHOD

An exploratory research design was used with the qualitative research approach found to be most appropriate. This approach was applicable for discovering and comprehending little-known phenomena (Creswell, 2014). Unstructured, in-depth interviews were used to gather data to allow for the emergence of rich descriptions and stakeholder perspectives. Purposive sampling was used.

The research was performed in the natural environment, therefore involved site visits to the site area. Ethical clearance to conduct the study was obtained. Participants were presented with an informed consent form and assured about confidentiality. Each interview lasted approximately an hour, and was digitally recorded and transcribed.

The fieldwork commenced in August 2016. This round of fieldwork was used to generate a basic understanding of the context. A total of 34 interviews were conducted in the Central and Southern Sumatera, which comprised seven growers, seven representatives from the local community, seven workers' family, six hauliers and seven representative from the national plantation association. The questions centred on determining the goals of the various stakeholders and whether they were considered compatible or competitive, how communication and trust were viewed, how challenges were dealt with, and difficulties that were recently faced.

The second round of interviews was conducted with 40 respondents and was held in January 2017 in Northern Sumatera. These stakeholders included nine growers, eight representatives from the local community, six workers' family, eight hauliers and nine representative from the national plantation association. The emphasis of the interviews was on the respondents' views of leadership, communication, transparency, and power relations in the plantations area, the working relationships between the stakeholders, and issues pertaining to competitiveness in the plantations area.

The interview data were analyzed to enable findings. The transcripts from the interviews were carefully studied and analyzed using thematic analysis. After engaging in analysis, a workshop was organized to present preliminary findings to the stakeholders. This was a way of ensuring member checking.

RESULTS

Multiple stakeholders with divergent objectives.

The main stakeholders in the Southern area found to be most influential in the system were the growers workers' family and hauliers. Hauliers were perceived to be quite significant as their actions affected growers and the company considerably, but were however considered to be outside the system. Respondents expressed the view that the hauliers were not of real consequence as there were only two permanent entities in the plantation industry: the growers and workers' family.

Interdependency between growers and the workers' family was highlighted by respondents who acknowledged that the plantation would not exist without the growers, and that growers would have nowhere to take their harvest. Despite this symbiotic relationship, each entity was found to be pursuing its own goals due to its separate existence. These diverse goals as expressed by the respondents are mentioned as follow.

Growers aimed to grow the plants as cheaply as possible with the lowest risk and obtain optimum production from their land, whereas others indicated that growers wanted the plant harvested and expected optimum returns. Grower goals were about profitability, sustainability and getting value for their plant. The goal of hauliers was to deliver the palm fruit from the field to the factory, and ensure profitability and efficient utilization of their equipment. The goal of the factory was to extract optimum freshness and to make as much money as possible. It was acknowledged that the factory was owned by a corporate that had to maximize profits and satisfy shareholders.

Being Heard

Growers expressed a strong sense of wanting to be viewed as meaningful participants and to become more influential as a collective. The formation of a grower body by the factory-area growers, referred to as the Local Grower United (LGU), allowed growers to respond as a collective to the company. This therefore permitted growers to be more united and able to speak with one powerful voice to the company. The company required such collective action from the growers to produce a more efficient relationship.

To become further organized, growers realized to forge stronger ties among themselves and contribute in committee forums where strategic decisions were being made. There was a clear need to step out of, what many respondents referred to as a 'comfort zone'. The challenge, however, was to overcome the fact that there were many growers who were individuals and owners in charge of their own farms, and who were traditionally accustomed to working alone, according to their own success criteria. Respondents indicated that growers have had to become professionals to exert their influence in the arena.

This therefore resulted in a move away from the concept of being only a farmer to a well-rounded businessperson who is able to respond to decisions that are made in a boardroom, far away from the factory.

It was also noted that some growers required professional assistance, to assist with finances and negotiations, but also general management. There is a lot of negotiations, business management, organization and not every farmer has those skills.

Power Distance.

Ground-level relations between the factory staff and growers were considered fairly satisfactory and characterised by trust, but the problem, however, arose with the corporate and hierarchical nature of the business, as it was argued that factory staff could not make high-level decisions. During the interview found that the trust between the managers and growers is good, but unfortunately the manager reports to the superiors that the problems start occurring high up the ladder.

Respondents reflected on the history between growers and company, which started with growers being dominant many years ago, which was then followed by the phase of engineers, and finally the advent of external shareholders, by way of accountants and efficiencies, which is when the relationship between grower and company started taking strain.

Social complexity in the factory area derives from the presence of major players, which were found to comprise growers, the factory and hauliers. These agents displayed commitment to attaining a higherlevel goal, i.e., combining efforts to produce palm oil. The results however revealed that the presence of hauliers was found to be impacting heavily on the system, and causing strain to the growers and the factory.

Marion and Uhl-Bien (2001) argue that if there are too many interacting agents, then difficulties can arise with respect to achieving a common identity and order. The presence of the hauliers poses an insurmountable challenge to the system, and may require re-examining their role in the system.

Anderson (2009) argues that connections between agents can be altered, in that agents can enter or leave the system, and that new agents can arise through grouping thriving aspects of agents. The emergence of the grower body (LGI) is an example of a new agent that has altered the factory area. Growers and the company are thus the main stakeholders who display an immense amount of interdependence.

This corresponds with Homer-Dixon's (2011) view that complex systems exhibit a high degree of connectivity of the parts. Wynne (2009) notes that a healthy relationship between factory and growers contributes to the wellbeing of the palm oil industry, and recommends a closer working relationship, collaboration and internal harmony as a way of strengthening the value chain. In line with the recommendation of Ashmos, Duchon and McDaniel (2014), it is useful to identify how conflict arises from the attainment of multiple objectives and goals.

Growers and the factory were found to pursue their own objectives, which is a characteristic of social complexity. Wynne (2009) highlights that a disjointed approach in the plantation industry has negative implications for adapting to a competitive environment, and that the downfall of one party will see failure for the other as well.

Rzevski (2011) however points to a noteworthy characteristic of social systems as that of intelligence, and defines this as the ability of agents to articulate and work towards goals, especially when uncertainty prevails. Further notes that intelligence allows for choices to be made by the agents, and that emergent intelligence should be strived for as this is about agents being given the space to get together to decide on how to achieve the most worthy common goals.

It is evident that both growers and the company will strive for profitability, optimum freshness and efficient delivery to the factory. Such compatibility of goals and consideration as to how to jointly achieve this could allow the agents to better handle the complexity. Another characteristic of social complexity is

the inability of agents to precisely define the problem facing the system, its attributes and solutions. This is due to the existence of the diverse mental models held by the heterogeneous agents who display bounded rationality. The problem as perceived by stakeholders was attributed to different causes, depending on the particular stakeholder group.

Barry and Fourie (2010) contend that rather than dwelling on efforts to define a problem, we should rather reflect on, analyze and formulate a response to the situation. Different solutions were proposed depending on the stakeholder's perspective, with respondents viewing certain factors as more serious, e.g., factory efficiency, which was considered acceptable by some respondents, but a cause for concern by those who were anticipating the future.

Cilliers (2015) draws attention to how complex systems can organize towards being critically sensitive, a term used to describe the ability of a system to respond to certain issues which are critical to its survival. Reliable palm fruit supply is an objective that is essential to the survival of the factory and is in part dependent on the decision of growers to continue in palm farming and make a success of their land.

The factory also places emphasis on quality of palm, but requires the cooperation of the grower who would have to choose to financially invest to accomplish this goal. Factory efficiency is also the factory's domain yet, does not dramatically affect the system at present.

Agents can form their own insights into what they desire and how they will behave (Teisman & Kleijn, 2008). When there is no agreement about the origins of the problem or on how to address the problem, the best response is for multiple organizations to work together, and take action at various levels as the problem overlaps more than one organization (Australian Government, 2007).

The need for emergent leadership in complex social systems is critical, and comprises an agent who takes initiative in motivating other agents to deal with difficult duties and requirements which are necessary to see the system accomplish its goals (Rzevski, 2011). Growers and the factory would therefore need to find a way to address the problems associated with transport and the supply.

This should ideally be achieved through self-organization. Self-organization is present where there is autonomy to make decisions and accomplish goals. However Rzevski (2011) notes that social conventions and norms pose a limitation to the amount of freedom of the agents in a social system. The corporate has structures in place, particularly as a result of the hierarchical nature, and holds a particular view about how business is conducted.

Local-level interactions at the factory were found to be satisfactory, but the role of the centralized structure presented a barrier. Local and present interactions shape the future and are derived from how agents communicate, and not necessarily from intentions and strategies of managers (Rodgers, 2010). This corresponds with the view of Cicmil and Marshall (2015) who note that a simplistic view of communication and team cohesion are inadequate due to the existence of ambiguity, unpredictability and power differences.

One of the main differences, between the growers and factory was that the factory is a corporate, shareholder entity with clearly defined parameters for success. Growers, on the other hand, were dispersed and solely responsible for how they defined success. Power relations in the factory area were found to be a source of conflict due to the corporate nature.

Concerns were expressed about the goals of the company in relation to the other factory that the business owns. This produced a clear distinction in how business between the corporate and growers was conducted and caused tension due to different expectations. In complex systems, the ways in which power and differences are managed become integral (Stacey as cited by Levy, 2000).

It is critical to consider how each organization deals with its mission, values, culture, and processes related to resources, structures and decision-making (Austin, 2010). Agent diversity, which tends to be overlooked, is a source of strength for complex systems (Heylighen et al., 2007; Stevenson, 2012). Therefore, growers and the factory are able to capitalize on best practice in their own domains.

Effective functioning in the grower-corporate social context requires agents to have a strong identity, form relationships and share information (Stevenson, 2012). A strong identity derives from a view of the self in relation to others and their sense of purpose, and serves to create relevance for what we are and do. Relationships entail meaningful connections, defined by mutual respect, authenticity and trust.

Information sharing serves a connective function in the social context and is a necessity for learning about self and others, and when inhibited by the inability to share and communicate, leads to an identity crisis. The growers need to be viewed in a meaningful way through being heard and engaging in strategic discussions can be understood in light of these three critical concepts.

However, Stevenson (2012) points out that the values of the group that holds the power will determine what is acceptable in terms of knowledge transmission. The structure of the corporate thus places limitations on how much information and interaction can be achieved.

The palm can be thought of as individualistic, portraying a clear sense of competitiveness and exhibiting classical hierarchical and centralized decision-making. Growers by contrast, due to their sheer numbers, have a simple structure with decisionmaking and accountability lodged with the individual grower-cum-manager. This difference contributes to increased social complexity in the factory area, and corresponds to the two network types (hierarchies and meshworks) as noted by Escobar (2013).

At the one extreme is a hierarchy, which is how the factory can be viewed, characterized by centralized control, clear planning and standardization, and specific rules and behavior. On the other hand, the growers can be compared to meshworks, which operate under decentralized decision-making, heterogeneity, variety and no one single goal. Austin (2010) argues that collaborations between partners need to be characterized by learning and the ability to do so in the partner's territory.

This is clearly evident in how growers have demonstrated increased organization through the development of the grower body (LGI), efforts to increase involvement by growers, and awareness of the need for professionnalization. However, growers will have to overcome the independent attitude that they have traditionally been operating under to achieve individual competitiveness. Rzevski (2011) therefore proposes emergent creativity, which is viewed as agents being proactive in reviewing goals, reformulating aims and objectives, predicting trends and paving the way for new prospects.

The strategic use of the LGI and other committees could allow growers to revisit their goals and formulate a response as a collective to interact strategically with the company. In applying the social complexity lens to examine the interrelationships in the study context. What may be seldom emphasized in social complexity theory is that agents are not equal, and furthermore, that the agent with the most power dictates how business will be conducted.

Another consideration is how other agents in turn respond to such displays of power, often requiring a fundamental change in operations and organizational structures to compete. Key differences in organizational culture, decisionmaking and value systems play a particularly critical role in social complexity. Apart from pursuing their own goals, individual agents have the desire to be recognized and to exert influence.

A final characteristic for consideration in the social complexity theory is the need for agents, as a collective, to have a common identity which will allow for the goal to be accomplished. This may necessitate

collaboration amongst agents who most stand to gain or lose, to create a new group of agents or attempt to expel an agent who is causing strain to the system. The need for collaboration to focus on addressing problems that will ensure survival ultimately supersedes the inherent diversity and competition that agents naturally portray.

CONCLUSION

The aim of this research was to use social complexity theory as a lens to understand the complex interactions of agents in a factory area in the palm oil industry. This research found interrelationships between stakeholders to be critical in producing outcomes. The results revealed that complex interactions in the factory area arose due to the existence of multiple stakeholders with divergent goals.

Another finding was that agents had the desire to be recognized and to become influential; however, power dynamics limited interactions due to agents having fundamentally different ways of conducting business. Stakeholders were also found to view the causes of the problems and solutions in the factory area differently due to their own mental models and perspectives.

It is clear that growers and the corporate, while being cognisant of their own goals and objectives, will need each other to address haulier inefficiencies and deficiencies in palm supply, which currently pose a threat to survival. This will not be an easy task due to the purposeful nature of the agents and structural differences, and will require firm leadership from both parties.

The local-level interactions between growers and the factory will be pivotal. The corporate will have to consider the high-level goals of the organization in relation to the corporate goals, and perhaps allow more autonomy, which could assist stakeholders to better manage the unique complexities facing the area. This can allow for the connections and differences to be nurtured. As Gharajedaghi and Ackoff (2014) argued, less emphasis must be placed on individual actions, and more on effectively managing how the parts in a system interact.

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AUDITING - ACCOUNTING IN THE AGE OF INDUSTRIAL REVOLUTION 4.0

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ABSTRACT: *The world has joined the digital era with the industrial Revolution 4.0 changing the way many industries operate. In the digital era, the supply of labor in the accounting and auditing sector of Vietnam remains high. In addition, fraud and dishonesty in financial information of Vietnamese business organizations is often reported. The paper presents a number of issues related to the current status and trends, working environment in accounting and auditing in the digital era. Solutions to improve the quality of accounting - auditing, help individuals and organizations enhance competitiveness in the field of accounting - auditing in the era of industrial revolution 4.0 are also proposed in this paper.*

Keywords: *industrial revolution 4.0, accounting, auditing*

1. INTRODUCTION

The nature of industrial revolution 4.0 is based on digital technology and integrates all smart technologies to optimize processes and production methods; Highlighting technologies that will have the greatest impact are 3D printing technology, biotechnology, new materials technology, automation technology, robotics ... The industrial revolution is the current trend of Automation and data exchange in manufacturing technology. It includes physical networking, Internet connectivity and cloud computing. Industry 4.0 facilitates the creation of "smart factories" or "digital factories." In these intelligent plants, virtual space physics systems will monitor the physical processes, creating a virtual copy of the physical world. With IoT, these virtual physics systems interact with each other and with people in real time, and through IoS, users will be involved in the value chain through the use of these services. The widespread application of ICT and information technology advances, such as IoT, cloud computing, virtual reality ... into industrial production blurs the boundary between the real world and virtual world, called the cyber-physical production system (CPPS). This is the foundation for building today's smart, factory-built factories. CPPS is a network of online communication between machines, organized as social networking.

Substitute accounting and auditing technologies are already on the market today. In the US, AskMyUncleSam chatbot has been put into operation. This artificial intelligence will help you answer questions about any tax deductions you may have. AskMyUncleSam is a standalone database set and capable of chatting with taxpayers. In the Netherlands, an information technology company has launched an accounting data entry solution that is "not in use". This technology allows accountants to automatically input repetitive data without having to spend their extra time working on other tasks instead of wasting valuable data for hours. Another company in Belgium, Xpenditure, uses mobile technology to allow customers to scan their receipts and invoices on the company's online system. From there, the company will produce a daily cost report, rather than gathering receipts and receipts into a huge report each month.

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The impact of the 4.0 revolution on the financial and accounting department of the business can be divided into five aspects: [Luong Thi Anh Tuyet, Pwc Vietnam Audit Director]

Analysis of data: In addition to the commonly used excel, the development of technology will provide more modern tools and software.

Cloud Technology: Store information in realtime, in large volumes and without much memory limitations as before.

Automation Process: Most accounting jobs are standardized, so automation technology can replace many financial and accounting departments in these jobs.

Artificial Intelligence: In addition to simple bookkeeping, artificial intelligence can replace human beings with complex accounting practices such as valuation, provisioning thereby, greatly reducing the number of personnel.

Blockchain Technology: Link all data of finance and accounting department together.

In order to capture technology trends and respond to these changes, the finance and accounting department needs to be proactive in updating knowledge, skills needed and relevant because "knowledge within Five years will be outdated. " At the same time, the current financial and accounting models of the company should be reviewed to see if it is appropriate for the market trend as well as for the core business.

2. ACCOUNTING - AUDITING IN THE AGE OF INDUSTRIAL REVOLUTION 4.0

Firstly, accounting - auditing work is not limited by geographic distance. Accountants - auditors in Vietnam can perform accounting and auditing work in any country in the world, if the individual who performs the accounting and auditing work satisfies all accounting – auditing work.

In contrast, any accountant - auditor in any country that is permitted to practice in Vietnam can carry out the accounting and auditing work of the enterprise or organization in Vietnam. This creates both opportunities and challenges, for those practicing accounting - auditing in Vietnam. It is necessary to improve our capacity as well as our conditions so that we can meet the conditions of international practice, improve our position and broaden the scope of our practice.

Industrial Revolution 4.0 brings with it a wireless network, digitized data, and auditing accounting not only within a business, but also a nation that extends across the world. This offers great opportunity for those who pursue a career in this field.

Job opportunities are extended to those with professional qualifications and knowledge of accounting systems in other countries. Accounting – audit work is no longer dependent on geographic location. However, this also becomes a disadvantage for accountants - auditors with limited qualifications.Their work, income is being threatened by other accountants - auditors around the world. In addition, with the development of artificial intelligence, computer-based accounting and auditing has been placing higher demands on accounting - auditing: processing and analysis whether by computer network, confidential information ... makes the requirements of qualified accounting – auditing, steps have changed compared to before.

Secondly, it gives people access to infinite knowledge, enabling people to learn anything they need to know, but unofficial information is sometimes provided, which makes it difficult to control and choose the information needed. It makes us cautious about accessing information and using information.

Thirdly, it changes the environment, the working context of accounting - auditing. With artificial intelligence, economists predict, many industries are at risk of disappearing due to the tendency of automation. Artificial Intelligence can replace the manual work of accounting - auditing such as collecting, processing, calculating data but the stages such as analysis, find the cause of solutions for

each situation even situations that have never happened ... always involve human beings. Artificial Intelligence is not a replacement for humans, but it is changing the environment, the working context of accounting - auditing.

3. NEW TRENDS FOR ACCOUNTING - AUDITING IN THE AGE OF INDUSTRIAL REVOLUTION 4.0

All those factors above are creating new trends for accounting- auditing profession. According to a survey conducted by the Association of Chartered Certified Accountants of Australia (ACCA) in 2016, the future of professional accounting is taking place in 22 countries around the globe (including Vietnam). The highest impact in the next 3 to 10 years, up to 55% of respondents said that the development of automated accounting system is assessed the highest impact in the trend, in addition to the trends such as accounting standards unification (42%), penetration of cloud computing in business (41%), economic fluctuations (42%)... Accounting includes stages such as collecting, processing, analyzing and providing information. All these stages can be replaced by machines. At this point, it is compulsory for accountant to understand technology and use technology in his work.

Machines are artificial intelligence that can do what humans can hardly do. However, they are just tools to support work in accounting - auditing, operating under the inherent programming, they are difficult to give the advice in each case it arises especially with the situation that is new and unprecedented.

Moreover, accounting - auditing should follow certain legal norms. People always need the updated equipment used for their work. Artificial Intelligence is a man-made product that can change the circumstances and conditions of work, but it can not only be asserted that artificial intelligence can completely replace people in the field of accounting - auditing but will also place higher requirements in accounting: computer processing, information security, data analysis and computer network.

However, every individual and organization working in the field of accounting - auditing must be aware of the importance of technology in order to apply it appropriately to the trend, save resources and increase the efficiency of the work. ACCA has conducted many surveys. The results of the joint research show that in order to survive and develop in the digital age, future accountants - auditors need not only factors such as intelligence and emotion but also other factors necessary for career development such as technology skills, vision ...

Future Professional Accountants- Auditors: The factors that led to the change and future skills of ACCA announced in 2016 also indicate that, in the digital era, each professional accountant will be countered the ability and skills in 7 areas: professional skills and ethics, experience, intelligence, digital skills, creativity, emotional indicator and vision.

One important thing in the digital age is the globally connected financial information system. This connection is driven by technology and by the internet, which offers many investment opportunities, financial resources, and global financial risks. The history of human development since the technology, the Internet has witnessed many economic crises spread over many countries. Vietnam is also among them and also bear a little influence.

Accounting, especially auditing, becomes an effective tool and there will be no surprise that auditing or financial advisory services are becoming increasingly important. Vision is one of the most important factors in the development of those who work in the field of accounting - auditing, financial consulting. To get this accounting-auditing one needs to change to meet the requirements of the new era, global connectivity and meet the expectations of the public.

4. ADAPTIVE SOLUTIONS IN THE AGE OF INDUSTRIAL REVOLUTION 4.0

Industrial Revolution 4.0 provides the opportunities and challenges for every accountant - auditor as well as important responsibilities for the quality of information provided to the audience to improve the skills of handling situations, improve the adaptability of the working environment of the age - Industrial Revolution 4.0, ccurrent and future accountants - auditors should do the following:

First, improve their professional ethics

The digital era is bringing new opportunities and new challenges for individuals and organizations working in the field of accounting and auditing. For individuals who have been active in the field of accounting - auditing, there are two highlights in the digital age that every person must be aware of to change, namely, technological ability and ability to provide a judgment (vision), in addition to a professional competence, core element and professional ethics.

When all the work can be handled by technology, professional ethics become more necessary than ever before, so it is possible to build and define the true image of the enterprise. Only accountants who are with professional ethics, respect the truth have the ability to create real value for shareholders so that shareholders continue to invest in businesses. Only ethical auditors can help investors determine the direction of risk and opportunities, and help protect the legitimate interests of the public.

Professional ethics requires that each accountant or auditor must understand the professional standards and standards of their specialty. This requires that each accountant must be educated, professionally trained and have work experience. Moreover, accountants and auditors must regularly update new professional knowledge in order to avoid backwardness in the professional and handling of work according to the current accounting regime and professional standards.

Professional ethics requires that each accountant and auditor consider the consequences of each possible solution. Thus, each accountant and auditor should consider the facts, the ethical issues involved, the underlying ethical principles, the established internal procedures, the alternative solutions. Then, the accountant and auditor should determine the consequences of each method and find the appropriate solution.

Secondly, always learn to cultivate experience, update the changes

In order to make the most of the opportunities in the digital age, first of all it is mandatory for each accountant - an auditor - to understand the fundamentals of every behavior in the professional field, to know if the behavior is right accordingly to the principles set forth and must understand the most basic knowledge, then can advance to the higher level knowledge in the process of becoming professional accountants - auditors.

To do this, people in the field of accounting - auditing must understand the basics of knowledge, experience, frequent updates and changes. In addition to that, it is necessary to maintain professional ethics, put the public interest on the benefits themselves. This will contribute to the formation and development of professional skills and ethics, experience and vision for accountants and auditors.

Moreover, the accounting and management accounting sector is also playing a growing role in the new trend, helping businesses regulate business at the present and in the future. Thus, at the basic level, accounting work can be automated, businesses also need people to examine, analyze and even make assessments for current and future financial situation.

An accountant - an auditor who seizes the opportunity not only to foster his or her professional skills,

but also the ability to use technology for his or her work, vision and ethics as well as creativity, sensitivity and intelligence.

At this point, every existing and future accountant -auditor - needs to cultivate the use of artificial intelligence (using technology) for his work from simple as the excel function to accounting software, management software, analysis ... and how to secure information for the business itself and its customers, thereby exploiting the customer market thoroughly. In addition, they need to improve the knowledge and application of the ability to see the problem of accounting management in enterprises, besides the trend of financial accounting as today. This is the field that helps increase the investment interests for businesses.

In addition, indispensable means helping current and future accountants - auditors reach beyond their range of activities is the international language. Particularly in the area of accounting and auditing, the language provides added value not only in language but also in international professional knowledge.

Therefore, the opportunity will be expanded for accounting staff - auditors of international standards recognized in many countries around the world such as ACCA, CMA, CIA ... These certificates can help Vietnamese accountants and auditors maximize their scope of activities and raise the competitiveness of human resources in the field of accounting and auditing in Vietnam.

5. CONCLUSION:

For organizations providing accounting, auditing, financial consulting services, in the global trend, investment far beyond the national boundaries, it is required for professional accounting - auditing to have a vision, evaluate the financial capacity honestly, preserve the investor. Financial counselling companies are forced to make changes so they do not fall into disruption or be defeated from the market when they do not exploit the value of the digital era.

Basic, easy-to-carry services such as accounting services provide financial information in the form of basic data that yields normal returns, but more advanced services such as providing differential data for financial, specialized consultancy ... can bring new sources of high profits for businesses. Thus, globalization, large data, internet, technology is bringing a global market for enterprises operating in this field, especially for ones providing the international quality employees and service.

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FACTORS AFFECTING THE DECISION TO USE MOBILE PAYMENT SERVICE OF STARTUP COMPANIES IN VIETNAM

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ABSTRACT: *Fintech brings about a new paradigm in which information technology is driving innovation in the financial industry. Fintech is touted as a game changing, disruptive innovation capable of shaking up traditional financial markets. However, the fintech industry like many others is characterized by a number of successful and unsuccessful startups.*

Mobile technology (as an important part of the Fintech industry) has progressively been popularized in today's lifestyle. On the other side of the coin, mobile payment is shockingly not placed among the regularly used mobile services, in spite of the fact that innovatively progressed arrangements and innovations exist. Apparently, there remains absence of acknowledgement about mobile payment services among customers. In order to develop mobile payment services in a potential market such as Vietnam, an academic model needs to be developed and shown confidence to deputize the whole market, to examine the factors that affect the consumer's decision to start consuming. The results show particularly strong support for the effects of Perceived Usefulness, Perceived Ease Of Use, Perceived Compatibility, Perceived Security, Social influence, Individual Mobility. Our study offers considerable implications for managers concerning promoting mobile payment solutions to extend consumers' intention to use these services.

Keywords: *payment, mobile, consumer behavior, TAM*

1. INTRODUCTION

Financial technology (Fintech) is a term that describe the new technology and innovation that aims to compete with traditional financial institutions to delivery better and more effective financial services. In today's digital era, people are seeking for easy access, convenience, efficiency, and speed. People want to use web or mobile to conduct transaction, and these transaction activities including the financial payment. Therefore, Fintech companies, mostly IT companies, start to provide both individuals and business with new financial tools or services.

Advances in technology have enabled a broad range of new functionalities for mobile devices, supporting several mobile financial services, such as bill payment, account transfers, person to person transfers, proximity payments at point of sale, remote payments to purchase goods and services, as well as other kind of services such as location based, mobile marketing, ticketing, discounts, or coupons. Assuming that standardized, interconnected and widely accepted procedures are a key for mobile payment acceptance (Zhong, 2009), one can expect potential reinforce of mobile payment adoption.

This form of payment has flourished in Vietnam but compared to many other Asian countries, the country still undergoes being underdeveloped. Therefore, with The 4th Industrial Revolution alongside, Vietnam gains more capability on focusing and developing more this section of payment. After a number of major manufacturers entered the Vietnamese market such as Samsung, studying consumer behavior

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has become increasingly urgent. With the purpose of studying adults, including students and employees in Hanoi, Ho Chi Minh City and other provinces, this research will provide policy implications for managers in mobile payment services field.

Research on consumer behavior theories in field of technology has been growing for long period of time. Theory of Reasoned Action (TRA) and Theory Planned Behaviour (TPB) are widely used to study and clarify behavior of individual users in information systems (Ajzen, 1991; Ajzen et al, 1980). Based on TRA and TPB, (Davis, 1989) developed the Technology Acceptance Model (TAM). TAM has been evaluated and expanded by a large number of studies and researches (Chau, 1996; Davis, 1989; Legris et al., 2003; Venkatesh & Davis, 2000; Wu et al, 2007; Wu & Wang, 2005). The original TAM model examined the mediating role of Perceived Usefulness, Perceived Ease Of Use, and their relationship between external variables and the probability of adopting technologies (Wu & Wang, 2005). For decades TAM has proven advantageous sides of a theoretical model for understanding and explaining consumers' behavior in technology (Legris et al, 2003).

In addition to these theories, the Unified Theory of Adoption and Use of Technology (UTAUT) is a technology acceptance model (TAM) refined by (Venkatesh et al., 2003). UTAUT explains the intention of users when using an information system and subsequent behaviors, comprises of four key factors: Performance Expectancy, Effort Expectancy, Social Influence, Faciliting Conditions. Gender, age, experience and Voluntary of using the system have indirectly affected the dependent variable through the four variables. Another theory is Innovation Diffusion Theory (IDT), which is recommended from studies of (Choudhury & Karahanna, 2008); (Kim et al., 2010); (Mallat, 2007). Proposed by (Rogers, 1983), the IDT theory model consists of five factors: Relative Advantage, Compatibility, Complexity, Triability, Observability.

Theoretically, although being appropriate in illustrate behavioral intention, we believe that the Technology Adoption Model - TAM urged to be expanded to explain the intention to use mobile payment services. A great number of researchers believe that TAM, he Technology Adoption Model, appeals universal in explaining behavioral intent and should be expanded by specific factors relevant to the particular technology being studied (Venkatesh and Davis, 2000). We also discover that this model should be further explored in order to explain the intention to use mobile payment services. On belief that the integration of variables from related theoretical perspectives such as IDT, UTAUT ... can provide better understanding of consumer acceptance (Nysveen et al 2005). In addition, previous researches on mobile payment only explored the factors affecting the customer's decision to accept the service, however not able to determine the importance, impact of each factor to one another.

2. CONCEPTUAL FOUNDATIONS AND HYPOTHESES

2.1. Fintech

Fintech is a service sector which uses mobile-centered IT technology to enhance the efficiency of the financial system. As a term, it is a compound of "finance" and "technology", and collectively refers to industrial changes forged from the convergence of financial services and IT. It is an innovative service which provides differentiated financial services using new technologies, such as mobile, social media, and IoT (Internet of Things). A recent example is the mobile-based payment and settlement system, which is the most representative service of its kind in Korea. In terms of industry, it refers to the phenomenon where a non-financial business uses innovative technology to provide services, such as remittance, payment and settlement, and investment, without working with a financial company.

2.2. Theoretical background

The Technology Acceptance Model as the anchor point of our study and expand it with extra evolved criticals to mobile payment services acceptance. Respectively, we deploy extra investigate that help broadens and develops TAM by presenting new factors, reconceptualizing existing factors within the model (Bagozzi, 2007). Basically, the last dependent variable will be the intention of customers, so it will not appear in the factor table below.

Table 1. List Of Factors

No	Factors	Definitions	References
1	Perceived Compatibility (PC)	The extent to which an innovation is perceived as being consistent with the existing values, past experiences and needs of potential users	(Rogers, 1983)
2	Perceived usefulness (PU)	The degree to which a person believes that using a particular system will enhance his or her job performance	(Davis, 1989)
3	Perceived ease of use (PEOU)	The degree to which the person believes that using the system will be free of effort	(Davis, 1989)
4	Individual mobility (IM)	The determinant used to measure the level to which an individual perceives received benefits in the context of time, space, and services access.	(Yen and Wu, 2016)
5	Social influence (SI)	refers to the extent to which an individual perceives that important others believe he or she should use the new system	(Venkatesh Et al, 2003)
6	Perceived Security (PS)	Level of assurance that a particular transaction will be performed without any security breach	(Michell, 1999) (Cho, 2004)

2.3. Hypotheses and model

Taking after the lead of (Venkatesh and Davis, 2000), we begin our hypotheses section with the ''core TAM'' and join extra development to amplify the initial hypothesis. We start by examining six hypotheses that are related to the technology itself.
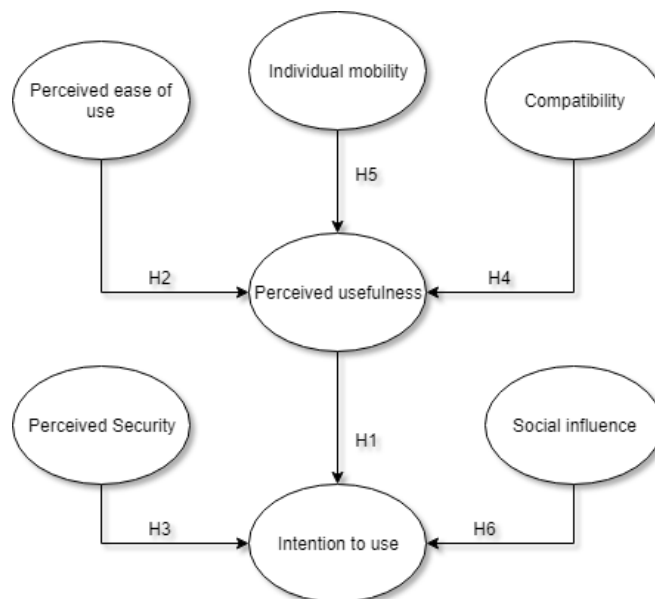

Fig. 1. Research Model

H1: There is a positive relationship between the Perceived Usefulness of mobile payment services and the intention to use mobile payment services.

H2: There is a positive relationship between Perceived Ease Of Use of mobile payment services and perceived usefulness of mobile payment services

H3: There is a positive relationship between the Perceived Security of mobile payment services and the intention to use mobile payment services.

H4: There is a positive relationship between Compatibility of mobile payment services and perceived usefulness of mobile payment services.

H5: There is a positive relationship between Individual Mobility of mobile payment services and perceived usefulness of mobile payment services.

H6: There is a positive relationship between Social Influence of mobile payment services and the intention to use mobile payment services.

3. RESEARCH METHODOLOGY

This study operates a combination of qualitative and quantitative research methods. Desk research methods, in-depth interview methods were used to improve the theoretical basis, the initial research model, the scale. The Cronbach's Alpha reliability test reflects the close correlation between the observed variables in the same factor that affects the acceptance of the customer's mobile payment services. Exploratory Factor Analysis (EFA) is a technique used to synthesize and summarize data. Exploratory Factor Analysis controls elements beneficial in identifying the sets of variables needed for research analysis as well as for finding relationships among factors. Confirmatory Factor Analysis (CFA) is a multivariate statistical procedure designed for evaluate how well the measured variables represent the number of constructs. After analyzing the results using Cronbach's Alpha, EFA, CFA, the author continued with Structural Equation Modeling (SEM). Structural Equation Modeling is a multivariate statistical analysis technique that dedicated to analyze structural relationships.

3.1. Qualitative research method

This research uses qualitative research methodology to analyse the suitability of the proposed research model. After synthesizing previous studies on the model, the proposed variables and the research method, we conducted a questionnaire adapted to the Vietnamese markets. The questionnaire was handled first with in-depth interviews. In-depth interviews were conducted with three experts in the field of payment and mobile payment, including:

- Mr Le Tanh – General Director of VNPay.

- Mr Nguyen Quang Minh - Napas Deputy Director for Development Research.

- Mrs Nguyen Thi Nga – Senior Marketing Officer of VNPT EPay.

3.2. Quantitative research method

Following a qualitative study, the survey was revised after the interview, with some unclear questions being revised and interviews conducted.

- Target samples: This study focused on interviews with individuals living and working in Hanoi, Ho Chi Minh City and some other provinces.

- Method of interview: The survey method is to issue questionnaires to more than 500 interviewees, including 416 valid replies. The survey was conducted within one week from March 19, 1818 to March 26, 1818.

- Statistical treatment: After completing the data collection process, the author filtered the inappropriate questionnaires, imported the data into SPSS 20 and then tested and analyzed the data obtained by Cronbach's. Alpha, EFA, CFA, SEM.

4. RESULTS

4.1. Reliability Analysis of Scale by Cronbach Alpha

Table 2. Cronbach Alpha Reliability Analysis Results

Factors	Variable	Corrected Item-Total Correlation	Cronbach's Alpha If Item Deleted	Cronbach alpha
Perceived Usefulness (PU)	PU1 - Mobile payment services are a useful method of payment	.745	.848	.882
	PU2 - Using mobile payment services makes the handling of payments easier	.802	.827	
	PU3 - Mobile payment services allow for a faster usage of mobile applications (e.g., ticket purchase)	.737	.851	
	PU4 - By using mobile payment services, my choices as a consumer are improved (e.g., flexibility, speed)	.694	.868	
Perceived Ease Of Use (PEOU)	PEOU1 - It is easy to become skillful at using mobile payment services	.769	.834	.882
	PEOU2 - It is easy to perform the steps required to use mobile payment services	.765	.837	
	PEOU3 - It is easy to interact with mobile payment services	.777	.826	
Perceived Security (PS)	PS1 - The risk of an unauthorized third party overseeing the payment process is low	.756	.872	.891
	PS2 - The risk of abuse of usage information (e.g., names of business partners, payment amount) is low when using mobile payment services	.811	.824	
	PS3 - The risk of abuse of billing information (e.g., credit card number, bank account data) is low when using mobile payment services	.793	.839	
Perceived Compatibility (PC)	PC1 - Using mobile payment services fits well with my lifestyle	.673	.755	.821
	PC2 - Using mobile payment services fits well with the way I like to purchase products and services	.719	.706	
	PC3 - I would appreciate using mobile payment services instead of alternative modes of payment (e.g., credit card, cash)	.634	.794	
Individual Mobility (IM)	IM1 - I could imagine having multiple jobs at a time	.693	.871	.871
	IM2 - I would like to be able to keep in touch everywhere I am	.803	.772	
	IM3 - I would like to be able to coordinate my daily tasks everywhere I am	.768	.805	

Social Influence (SI)	SI1 - People who are important to me think that I should use mobile payment services	.595	.582	.726
	SI2 - People who influence my behaviour think that I should use mobile payment services.	.628	.537	
	SI3 - Mobile payment services use is a status symbol in my environment	.431	.775	
Intention To Use mobile payment services (I)	I1 - Given the opportunity, I will use mobile payment services	.743	.788	.857
	I2 - I am willing to use mobile payment services in the near future	.746	.784	
	I3 - I intend to use mobile payment services when the opportunity arises	.703	.824	

In summary, the results of the reliability analysis of scale showed that Alpha coefficients of all components are greater than 0.6, ranged from 0.726 to 0.891. The values of the corrected Item - Total Correlation of variables ranged from 0.431 to 0.811, greater than 0.3. That indicated the reliability of scale was satisfied.

4.2. Exploratory Factors Analysis

Exploratory Factor Analysis (EFA) is used to build scale to measure the different angles of research concept and checking the direction of the scale.

Table 3. Exploratory Factor Analysis Table

Variable	Component					
	1	**2**	**3**	**4**	**5**	**6**
PU1	.822					
PU2	.779					
PU3	.737					
PU4	.723					
PS1		.884				
PS2		.868				
PS3		.867				
IM3			.858			
IM2			.836			
IM1			.698			
PEOU1				.801		
PEOU2				.798		
PEOU3				.731		
SI2					.873	
SI1					.826	
SI3					.548	
PC2						.793
PC3						.720
PC1						.541
Eigenvalues	8.244	1.984	1.475	1.165	.977	.785
Average Variance Extracted	43.388	53.830	61.591	67.723	72.863	76.993
KMO=	0.901			Sig=	0	

Table 4. KMO and Bartlett Results

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.901
Bartlett's Test of Sphericity	Approx. Chi-Square	4929.022
	Df	171
	Sig.	0.000

Analysis of 19 observed variables combined, the result is extracted 6 factors. Analysis results showed coefficient KMO = 0.901 at significant level of Sig. = 0.000. The variables are correlated with each other and satisfy the conditions in the factor analysis. The analytical results have been extracted 6 factors with the factor loading coefficients are higher than selected standards (≥ 0.5).

4.3. Confirmatory Factor Analysis (CFA)

Results given of the CFA analysis of the above measures showed that Chi-square / df = <3, TLI =, CFI =, NFI = were greater than 0.9, coefficient RMSEA = <0.08, Therefore, the model extracted confirmed suitable for the engaging market. Output numbers of the P-values of the observation variables representing the factors are equal to 0.000, therefore the observed variables are capable of demonstrating the factors listed in the CFA model.

4.4. Structural Equation Modelling (SEM)

Structural equation modelling (SEM) is a general term that has been used to describe a large number of statistical models used to evaluate the validity of substantive theories with empirical data (Ringle et al., 2005). This is a convenient and powerful statistical technique considered appropriate for many research situations (Henseler et al., 2009), suitable for studying complex models with numerous constructs (Chin, 1998).
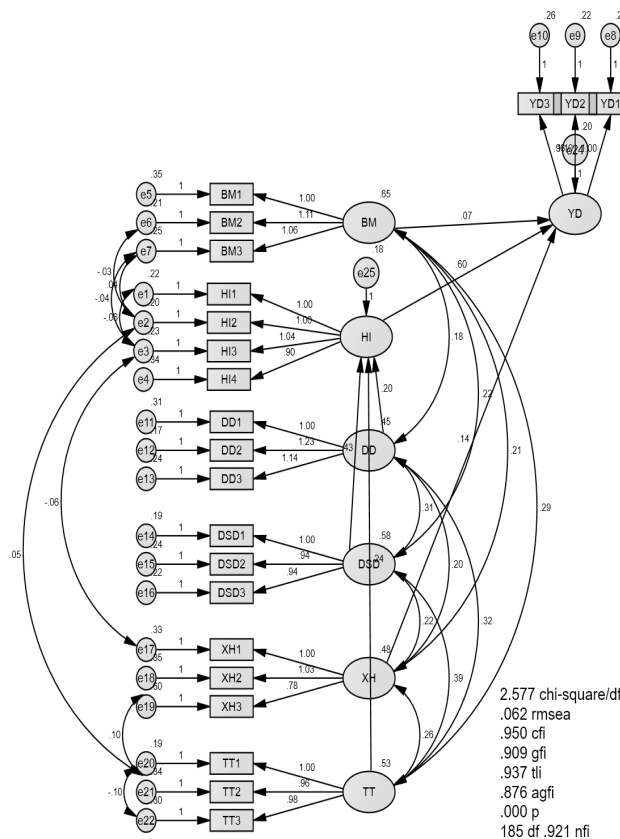

Fig. 2. Structural Equation Modelling Analysist Model

The figures of Chi-square / df = 2.577 TLI = 0.937, CFI = 0.950, NFI = 0.921 were all greater than 0.9, the RMSEA = 0.062 <0.08, thus the results of the overall statistics achieved market data suitability. The results of the P-values of the independent variables are lower than 0.05, strongly claims that independent variables show the influence on the dependent variable is Perceived Usefulness of this has a direct impact on the Intention to use mobile payment services. The standardized regression coefficients of the independent variables show that the level of impact on Perceived ease of use on Perceived usefulness is 0.433, which is the highest of all, Perceived usefulness gains the number of 0.601, Perceived Security with 0.07, Perceived ease of use with 0.433, Individual mobility with 0.205, Social influence of 0.138 and Perceived Compatibility is 0.241. Impact level statistic of Perceived Security is 0.07 not noticable compared to the average, proving the factor of security hinders customers to payment services through mobile devices.

4.5. Bootstrap Confidence Tests

Table 5. *Bootstrap Analysis Results with n= 1000*

Parameter			SE	SE-SE	Mean	Bias	SE-Bias
Perceived usefulness (PU)	<---	Individual mobility (IM)	0.087	0.002	0.207	0.002	0.003
Perceived usefulness (PU)	<---	Perceived ease of use (PEOU)	0.075	0.002	0.433	0	0.002
Perceived usefulness (PU)	<---	Perceived Compatibility (PC)	0.108	0.002	0.235	-0.005	0.003
Intention To Use(I)	<---	Perceived usefulness (PU)	0.086	0.002	0.593	-0.007	0.003
Intention To Use(I)	<---	Social Influence (SI)	0.121	0.003	0.157	0.019	0.004
Intention To Use(I)	<---	Perceived Security (PS)	0.134	0.003	0.165	0.01	0.004

Bootstrapping is a method for deriving robust estimates of standard errors and confidence intervals for estimates such as the mean, median, correlation coefficient or regression coefficient with overlapping N=1000. Estimated results from 1000 observations are averaged over the deviations shown in the table above. Derived from the table above, the results of estimates of the model of intention to use, the difference between group of coefficients in the model with 1000 observations shows microscopic.

5. DISCUSSION

5.1. Recommendations

- Model accreditation: There are 6 factors that are confirmed to influence customers' decision in using mobile payment. They are: Perceived Usefulness, Perceived Ease Of Use, Perceived Security, Perceived Compatibility, Individual Mobility, Social Influence. All factors achieved credibility with market data. This shows that the research model was well designed and progressed from the original model, the scales were developed properly based on preliminary research and the second qualitative research. The results showed that the consumers have positive attitude toward mobile payment service. SEM results also showed that all the hypotheses were accepted. The impact of each factors on the customers intention varies. As a result, the Perceived Usefulness had the highest rate, followed by the Individual Mobility, Perceived Compatibility, Perceived Ease Of Use, and Social Influence, and the lowest is Perceived Security.

- Recommendations: although our main aim was to redesign the TAM model to discover factors contain influence on the customers' decision, from the results of our research we can suggest some recommendations

for businesses and management agencies. Researches demonstrate that Perceived Usefulness affected significantly to the customers' intention in using mobile payment service. Therefore, service providers need special attention to solutions that strengthen the usefulness of mobile payment services. In addition, one of the biggest concerns of customers when using mobile payment service are security issues. Customers can change their decisions of using the service when they sense the security protocols not guaranteed, vendors require solution to increase safety awareness to customers. At the same time, the State Bank of Vietnam should strive for solutions to develop mobile payment service in Vietnam. Completing legal corridors and policy mechanism is one of the top priorities for the State Bank of Vietnam at the current time. Commercial banks must also put efforts on and implement development plans to propagate and multiply the form of mobile payment. Additionally, they could spread mobile payments to rural areas, due to large proportion of civilians in rural areas which do not access to mobile payment services. Finally, the authorities are obliged to promote information, propaganda, guidance and consumer protection in non-cash payments in pursuits of being comfortable and understandable when using moblie payment of consumers.

- Based on the results of this study, the major findings have significant managerial implication. This finding reveals the importance of understanding the behavioral intention toward using Fintech Service.

Be being able to identify setting performance, the enterprises managers may be able to alter customers' experiences in order to maximize their attitude toward using Fintech Service and then increase behavioral intention toward using Fintech Service. By understanding the relationships between the technology services provided, and how they affect customers, the enterprises managers should be better equipped all to satisfy and to retain clients. For the success of marketing new technology, thus, it is suggested that the marketers should focus on building the relationship between customers about the enterprise's brand and service trust. Not only let customers perceive usefulness of the new technology, but also perceive ease of use of the new technology; because they can be fundamental factors increasing satisfaction with setting performance and activity. Expect to affect the customer's attitude toward using, and behavioral intentions to use, so that the new technology can be accepted by customers.

5.2. Limitations

Achived a great number of meaningful consequences, many limitations still exists within the research. One of the hardship is limited given time and financial constraints. To gain more detailed look, the sample size (416 samples) is insufficient to determine the whole of Vietnam in general and Hanoi and Ho Chi Minh City in particular. In addition, the majority of customers were the youth aged from 18 to 30, followed by middle-aged people aged from 31 to 40, accounting for 19.6%, so there was no diversity on ages. . . Moreover, the topic only covers factors that affects individual customers, leaving households and businesses untouched. The author had expanded the TAM model with the following variables: Perceived Security, Perceived Compatibility, Individual Mobility, Social Influence, Demographic (Age, Gender, Education, Income). However, the customers' use of mobile payment services can be influenced by a great quantity of other factors due to the needs and the development of society over time. Additionally, the topic took advantage of the quantitative research method with the method of delivering questionnaires to the customers. However, the audience could not clearly comprehend on mobile payment services leaving answers emotional, not representing inner drive and accurate. Hence, the scales only showed relatively little on the factors affecting the decision in using mobile payment services. Finally, due to insufficient study time and financial constraints, the number of sample was limited which had led to many shortcomings in the modeling, scaling and editing of questionnaires.

5.3. Further research directions

- For subsequent researches contains same topic can be modeled with various appropriate factors such as geographic variables, technology infrastructure, banking policies,…

- Subsequent researches need to investigate with larger sample size, wider scope for researches could boasts rigorousness and accuracy on the level of impact of factors on the customers' decision.

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# IMPACT OF ASEAN-PLUS-ONE FTAS: A GRAVITY APPROACH

Phuong Bui Thi Hang[*]

ABSTRACT: *This study examines the trade effect of ASEAN-plus-one free trade agreements with 6 partners, including Japan, China, Korea, India, Australia and New Zealand. The gravity model has been used with the inclusion of country-pair effect and country-and-time effect to prove significant impacts of ASEAN-plus-one FTAs on trade of members and trade of the outsiders. Statistical evidence has been found that AIFTA has the highest trade effect among FTAs. AJFTA and ACFTA had pure trade creation in terms of exports for all members, whereas AKFTA and AANZFTA had pure trade creation in terms of imports.*

Keywords: FTA, ASEAN partner, trade impact

1. INTRODUCTION

When international trade increasingly emerges, there is a trend to reduce trade barriers and open the economy to the world. Most countries seek partnership within their neighbourhood or with crucial trading partners all over the world. As a result, there has been a wide variety of free trade agreements (FTAs) signed so far. As recorded by WTO Secretariat, FTAs have become prevalent for the last decade, especially since 2009. It is a general belief that FTAs will promote trade among contracting parties thanks to trade creation effect. However, that belief is not true all the time. Some research have approved the opposite. The increasing number of FTAs does not ensure the increase in intra-trade. Therefore it is essential to assess the trade effect, including trade creation and trade diversion, of FTAs after they came into force.
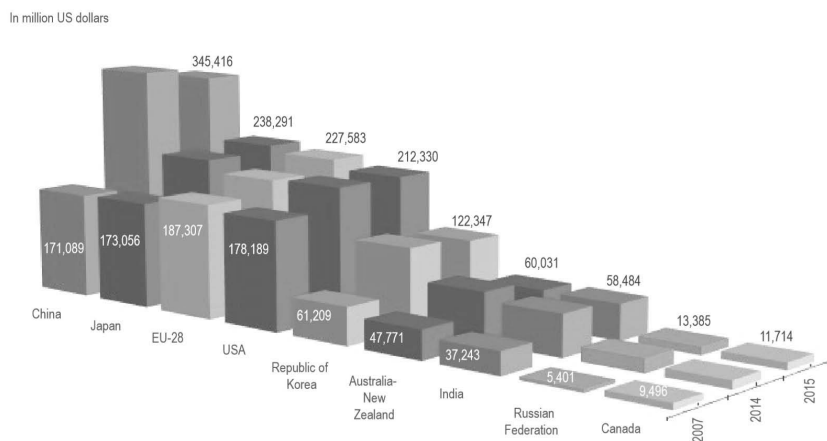
(Source: ASEAN Secretariat)

Figure 1. *ASEAN's top trading partners*

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Within Asian area, Association of Southeast Asian Nations (ASEAN) has played an active role to form FTAs. Established in 1967, ASEAN originally included 5 countries (Indonesia, Malaysia, Philippines, Singapore and Thailand) and had Brunei to join later. Together 6 members formed ASEAN FTA (AFTA) in 1992 and extended the membership to 4 other countries in the area. Since then, ASEAN continuously formed FTAs with its major partners. Up to now, it has successfully cooperated with 6 dialogue partners by 5 FTAs : ASEAN-China FTA (ACFTA) took effect in 2005, ASEAN-Korea FTA (AKFTA) in 2007, ASEAN-Japan FTA (AJFTA) in 2009, ASEAN-Australia-New Zealand FTA (AANZFTA) in 2010 and ASEAN-India (AIFTA) in 2010. These 6 partners have been among list of top trading partners of ASEAN for years.

As shown in Table 1, the tariff rates under AANZFTA were reduced the most, with the average of 95.7% has committed to be removed. ACFTA ranks second with 94.7%, followed by AKFTA with 94.5% and AJFTA with 92.8%. AIFTA is far behind with only 79.6%. Given such different tariff elimination ratios, ASEAN-plus-one FTAs will surely have different trade impacts.

Table 1. *Tariff Elimination Ratios in ASEAN+1FTA*

ASEAN member	ASEAN +					
	China	**Korea**	**Japan**	**Australia-New Zealand**	**India**	**Average**
Brunei	98.3	99.2	97.7	99.2	85.3	95.9
Cambodia	89.9	97.1	85.7	89.1	88.4	90
Indonesia	92.3	91.2	91.2	93.7	48.7	83.4
Lao	97.6	90	86.9	91.9	80.1	89.3
Malaysia	93.4	95.5	94.1	97.4	79.8	92
Myanmar	94.5	92.2	85.2	88.1	76.6	87.3
Philippines	93	99	97.4	95.1	80.9	93.1
Singapore	100	100	100	100	100	100
Thailand	93.5	95.6	96.8	98.9	78.1	92.6
Vietnam	N/A	89.4	94.4	94.8	79.5	89.5
	94.7	94.9	92.9	94.8	79.7	
China	94.1					
Korea		90.5				
Japan			91.9			
Australia				100		
New Zealand				100		
India					78.8	
Averages	94.7	94.5	92.8	95.7	79.6	

(Source: Kuno (2012))

Although such partners' crucial roles in trading relationship with ASEAN are indisputable, it is necessary to assess the trade impacts, including trade creation and trade diversion, of these FTAs to member countries after many years into force. This study is to examine whether each individual ASEAN FTAs led to trade creation or trade diversion to members and which one had the biggest effect.

2. LITERATURE REVIEW

There has been a wide range of empirical research in assessment on trade effects of FTA. As a pioneering work, Viner (1950) laid the foundation for concept of "trade creation" and "trade diversion". "Trade creation" was defined as the reduction in production of a less efficient country which was replaced by imports from a more efficient country in the partnership. "Trade diversion" was posed when imports

previously coming from an outsider was replaced by imports from a partner. In order to measure these trade effects, gravity model was introduced and developed by Tinbergen (1962) and has become the formal method with many extensions afterwards. The gravity model measures bilateral trade between two countries based on the economy size and distance of two countries. Economy size can be measured by the gross domestic product (GDP) and the population of the country. The formula (1) is as follows:

$$F_{ij} = C\,\frac{Y_i\,Y_j}{D_{ij}} \tag{1}$$

Where $F_{ij}F_{ij}$ is trade flow from country I to country j, $Y_i\,Y_i$ and Y_jY_j are GDP of country I and country j, respectively, $D_{ij}D_{ij}$ is the distance between two countries.

Many studies have applied gravity model to analyse the trade impacts by taking natural logarithm of the equation (1) and add some variables capturing the common effects of two countries such as common border, common official language and FTAs. So the equation (2) is as follows:

$$\begin{aligned}
\ln X_{ijt} = {} & \alpha_0 + \beta_1 \ln GDP_{it} + \beta_2 \ln GDP_{jt} + \beta_3 \ln POP_{it} + \beta_4 \ln POP_{jt} \\
& + \beta_5 \ln DISTANCE_{ij} + \beta_6 LANGUAGE_{ij} + \beta_7 ADJACENCY_{ij} \\
& + \phi_1 FTA\_1_{ijt} + \phi_2 FTA\_2_{ijt} + \phi_3 FTA\_3_{ijt} + u_{ijt}
\end{aligned} \tag{2}$$

Where $\ln X_{ijt}$ is natural log of exported value from exporter i to importer j at time t (in thousand USD); GDP_{it} and GDP_{jt} are the gross domestic product of exporter i and importer j at time t, respectively; POP_{it} and POP_{jt} are the populations of exporter i and importer j at time t, respectively; $DISTANCE_{ij}$ is the distance from the capital city of exporter i to the capital city of importer j and is fixed over time; $LANGUAGE_{ij}, ADJACENCY_{ij}, FTA\_1_{ijt}$, and FTA_3_{ijt} are all dummy variables: $LANGUAGE_{ij}$ equals to 1 if exporter i and importer j have the same official language and equals to 0 otherwise, $ADJACENCY_{ij}$ equals to 1 if exporter i and importer j share the common border and equals to 0 otherwise, $u_{ijt}u_{ijt}$ is the error term.

For each ASEAN-plus-one FTA, we put 3 dummy variables into the regression, including FTA_1_{ijt} equals to 1 if both exporter i and importer j are in that particular FTAs after that FTA came into force and equals to 0 otherwise, FTA_2_{ijt} equals to 1 if exporter i is in that FTA and importer j is not and equals to 0 otherwise, FTA_3_{ijt} equals to 1 if importer j is in that FTA and exporter i is not and equals to 0 otherwise. So for example, in order to examine the trade effects of AJFTA which came into force at the beginning of 2009, we include $AJFTA\_1_{ijt}$ equals to 1 if both exporter i and importer j are in AJFTAs since 2009, $AJFTA\_2_{ijt}$ equals to 1 if exporter i is in AJFTA and importer j is not, $AJFTA\_3_{ijt}$ equals to 1 if importer j is in that FTA and exporter i is not. Similarly, we take 2005 as a threshold for ACFTA, 2007 for AKFTA, 2010 for both AIFTA and AANZFTA.

It is expected that GDP and Population will have a positive relationship with exported value as they indicate the economy size. The larger economy size is, the more demand for goods is. So are the exports. While distance is expected to decrease exports (as it increases trade costs such as transportation cost and delivery time), common language and border should have positive sign because they promote trade.

Anderson et al (2003) found that estimations based on standard gravity model suffer from omitted variable bias. They developed a method to estimate a theoretical gravity equation efficiently by introducing multilateral trade resistance factors. Multilateral trade resistance includes trade barriers that each individual

country faces when trading with all of its partners. To solve the problem of multilateral trade resistance, they suggested to use country-specific dummies. Baldwin and Taglioni (2006) used country-specific effects to capture all the time-invariant individual effects of exporters and importers that are omitted from the model rest of the model specifications, such as preferences and institutional differences. Moreover, Kepaptsoglou et al (2010) pointed out that the fixed effect model (FEM) is dominant among empirical research using gravity model in comparison with the random effect model (REM). In order to choose which econometric model should be applied, Hausman test will be conducted. It is noted that FEM cannot measure the impact of such time-invariant variables as distance, language and adjacency. So such variables are taken out of our estimation FEM model. Then the equation (3) is as follows:

$$\ln X_{ijt} = \alpha_0 + \beta_1 \ln GDP_{it} + \beta_2 \ln GDP_{jt} + \beta_3 \ln POP_{it} + \beta_4 \ln POP_{jt} \qquad (3)$$
$$+ \phi_1 FTA\_1_{ijt} + \phi_2 FTA\_2_{ijt} + \phi_3 FTA\_3_{ijt} + \delta_t + \pi_{ij} + u_{ijt}$$

Where π_{ij} is the country-pair effect and δ_t is the time effects that control for omitted variables which are in-variant for all trade flows but vary over time.

Beir et al (2007) argued that omitted variables are the main cause for endogeneity bias in estimating FTA effects with cross-sectional data. So the paper suggested to use panel data and fixed effects to deal with the bias. However, the time-invarient fixed effects are insufficient to capture the unobservable factors such as time-varying multilateral resistance terms. Therefore they used country-and-time effects in addition to country-pair fixed effects to obtain unbiased estimates. Martinez et al (2009) also introduced individual country dummies in cross-sectional data estimation and bilateral fixed effects as well as country-and-time effects in panel data estimation to eliminate the endogeneity bias. The equation (4) is as follows:

$$\ln X_{ijt} = \alpha_0 + \phi_1 FTA\_1_{ijt} + \phi_2 FTA\_2_{ijt} + \phi_3 FTA\_3_{ijt} + \pi_{ij} + \varepsilon_{it} + \varphi_{jt} + u_{ijt} \qquad (4)$$

Where $\varepsilon_{it}\varepsilon_{it}$ is the importer-and-time effect and $\varphi_{jt}\varphi_{jt}$ is the exporter-and-time effect.

Many researches have indicated that trade creation can be offset against trade diversion because trade within FTA members (intra-bloc trade) grows and trade outside the FTA (extra-bloc trade) falls at the same time. In other words, an increase in intra-bloc exports is paired with a decrease in imports from extra-bloc. As a result, to capture net trade effects, it is necessary to include variables to examine trade among members and non-members in addition to variables capturing intra-bloc trade. Following Sloaga-Winters (2001), Carrere (2006), DeRosa (2007), Martinez (2009) and many other study, three dummy variables FTA_1_{ijt}, FTA_2_{ijt} and FTA_3_{ijt} are added into all our estimation models. According to Martinez (2009), the scenarios of trade effects of FTAs are expressed in Table 2.

Table 2. *Scenarios of Trade Creation and Trade Diversion effects of FTAs*

	Intra-bloc trade (ϕ_1)	Extra-bloc trade (ϕ_2, ϕ_3)	Magnitude	Trade effects
Export	$\phi_1 > 0$	$\phi_2 > 0$		Pure trade creation in terms of export
		$\phi_2 < 0$	$\phi_1 > \phi_2$	Trade creation + Export diversion
			$\phi_1 < \phi_2$	Export diversion
	$\phi_1 < 0$	$\phi_2 > 0$		Export expansion of extra-bloc trade
		$\phi_2 < 0$		Export diversion + export contraction of intra-bloc
Import	$\phi_1 > 0$	$\phi_3 > 0$		Pure trade creation in terms of import
		$\phi_3 < 0$	$\phi_1 > \phi_3 \phi_3$	Trade creation + Import diversion
			$\phi_1 < \phi_3$	Import diversion
	$\phi_1 < 0$	$\phi_3 > 0$		Import expansion of extra-bloc trade
		$\phi_3 < 0$		Import diversion + import contraction of intra-bloc

(Source: Martinez et al, 2009)

Given the three dummy variables, both intra-bloc and extra bloc trade are captured. According to Sloaga-Winters (2001), the trade effect is expressed by coefficients of those variables:

$$\Delta X_{ij} (\%) = 100 * [e^{(\phi_1 + \phi_1 + \phi_1)} - 1] \qquad (5)$$

Where ΔX_{ij} is the change in trade between exporter i and importer j in percentage, e is the natural number e.

3. DATA AND METHODOLOGY

This study uses a panel dataset covering 26 countries during the period of 20 years from 1997 to 2016 at both aggregated and disaggregated levels of products. The 26 trading partners include 10 ASEAN countries, 6 partners which have signed free trade agreements with ASEAN and 10 other top trading partners of ASEAN in 2016 (Table 3). GDP (at current USD) and population data are derived from World Bank Development Indicator Database. Since Myanmar's GDP is only available from 2000, the missing data is taken from World Economic Outlook Data (WEO, IMF). Distance between capital cities, language and adjacency dummy are derived from CEPII database. Exported values are collected from UN Comtrade at total trade.

Table 3. *List of Trading partners under estimation*

10- ASEAN countries	6- FTA partners	10- Top trading partners
Brunei	Australia	Belgium
Indonesia	China	Canada
Cambodia	India	France
Lao	Japan	Germany
Myanmar	Korea	Hong Kong
Malaysia	New Zealand	Mexico
Philippines		Netherland
Singapore		UAE
Thailand		United Kingdom
Vietnam		United States of America

Table 4 shows statistical summary of all variables included in our models. As in Table 4, the minimum value of exports is 0 which raises the issue of zero trade. However, zero trade is not a critical issue in our study. Only 13 out of 12063 observations, accounting for 0.11% suffered from zero values so it cannot statistically affect our results.

Table 4. *Summary statistics*

Variable	Number of Observations	Mean	Std. Dev.	Min	Max
Exported value	12063	8495114	2.61E+07	0	4.10E+08
GDPi	12063	1.66E+12	3.00E+12	3.65E+09	1.86E+13
GDPj	12063	1.57E+12	2.95E+12	1.28E+09	1.86E+13
POPi	12063	1.69E+08	3.38E+08	312038	1.38E+09
POPj	12063	1.54E+08	3.24E+08	312038	1.38E+09
Distance	12063	7611.521	4790.6	315.5433	19263.88
Language	12063	0.077676	0.267671	0	1
Adjacency	12063	0.062091	0.24133	0	1
AJFTA_1	12063	0.070795	0.256493	0	1
AJFTA_2	12063	0.105198	0.306821	0	1
AJFTA_3	12063	0.107270	0.309469	0	1
ACFTA_1	12063	0.099561	0.299426	0	1
ACFTA_2	12063	0.148388	0.355499	0	1
ACFTA_3	12063	0.161734	0.368222	0	1
AKFTA_1	12063	0.085468	0.279588	0	1
AKFTA_2	12063	0.127414	0.33345	0	1
AKFTA_3	12063	0.134461	0.341161	0	1
AIFTA_1	12063	0.063334	0.243573	0	1
AIFTA_2	12063	0.094172	0.29208	0	1
AIFTA_3	12063	0.093758	0.291504	0	1
AANZFTA_1	12063	0.076018	0.265037	0	1
AANZFTA_2	12063	0.095996	0.294598	0	1
AANZFTA_3	12063	0.095333	0.293686	0	1

(Source: Author's calculation)

4. MAIN RESULTS

After applying the specified gravity model and running the regressions, we have the main results for aggregated trade expressed in Table A1,A2,A3,A4,A5 (Annex) for AJFTA, ACFTA, AKFTA, AIFTA and AANZFTA respectively. Each table has 4 columns. Column (1) presents the results of pooled OLS method using equation (1). Hausman tests have been conducted to choose between FEM and REM and in all cases. As expected, chi2 are all large so we reject the null hypothesis which is difference in coefficients is not systematic. In other words, the FEM is more suitable to estimate than the REM. So column (2) presents the results with FEM. Then we conduct the FEM with time effect and country-pair effect as in Column (3). Finally the FEM estimation with country-pair and country-and-time effect is in Column (4).

The results indicate that GDP of both exporter i and importer j significantly affect exports: the larger GDPs, the more exports. Population of importer j has negative relationship with exports and is statistically significant for all cases. It is because larger population means larger domestic market, richer resource endowment and more diversified products, which leads to little dependence on international trade. On the contrary, coefficient of population of importer j is ambiguous. As expected, distance between two countries discourages trade while common language and shared border help promote trade significantly.

It is quite surprising that most of 3 coefficients of FTA_1, FTA_2 and FTA_3 in column (1), (2), (3) of Table A1,A2,A3,A4,A5 are all negative, which means export (import) diversion and contraction of intra-FTA and there is no trade creation after AJFTA. As discussed earlier, estimations in column (1), (2), (3) are more likely to be endogeneity-biased due to omitted variables. To fix the problem of endogeneity, the country-pair and country-and-time effect is introduced in column (4). The inclusion of such effects in estimation column (4) control for all determinants which vary with each individual exporter and individual importer in each year and also control for constant-over-time effect of two countries, thus overcoming the problem of endogeneity. The trade impact of 5 ASEAN-plus-one FTAs is summarized in Table 5.

Table 5. *The trade impact of 5 ASEAN-plus-one FTAs*

	AJFTA	ACFTA	AKFTA	AIFTA	AANZFTA
	(1)	(2)	(3)	(4)	(5)
FTA_1	1.069***	0.453**	0.506**	1.279***	0.533***
	(0.224)	(0.205)	(0.205)	(0.186)	(0.202)
FTA_2	1.148***	0.645***	0.160	0.821***	0.0573
	(0.216)	(0.160)	(0.131)	(0.115)	(0.180)
FTA_3	0.0773	-0.0424	0.537***	0.552***	0.646***
	(0.189)	(0.135)	(0.152)	(0.150)	(0.152)
Robust standard errors in parentheses					

(Source: Author's calculation)

As in Table 5, we can see that trade impact of AJFTA and ACFTA are quite similar: coefficients of FTA_1 and FTA_2 are both positive and statistically significant while that of FTA_3 is not significant. It implies that FTAs between Japan - ASEAN and China – ASEAN have affected intra-bloc and extra-bloc trade positively. The FTAs has created pure trade creation in terms of exports. The net effect of two significant variables of AJFTA and ACFTA are 2.22 and 1.1, respectively. According to equation (5), AJFTA members exported 8.2% more than normal level of trade predicted by the gravity model whereas ACFTA members exported 2% more than normal. This estimated result also proves that AJFTA has stronger trade impact than ACFTA as it brings more trade creation. However, these trade effects are not very high. This is probably due to the active role of Japan and China in forming bilateral partnership with each ASEAN partners. In fact, Japan signed Economic

Partnership Agreements (EPA) with 7 individual ASEAN countries before AJFTA took effect, including Singapore (JSEPA) in Jan 2002, Malaysia (MJEPA) in Dec 2005, Philippines (JPEPA) in Sep 2006, Thailand (JTEPA) in Apr 2007, Brunei (BJEPA) in June 2007, Indonesia (JIEPA) in July 2008, Vietnam (JVEPA) in Dec 2008. Such agreements weakened the trade effects of ASEAN-plus-one FTAs.

It is interesting that AKFTA and AANZFTA both create the same effect in terms of import trade creation. The coefficients of FTA_1 and FTA_3 are both positive and statistically significant, implying that AKFTA and AANZFTA promote trade within the bloc and induce the imports from outside-bloc partners. The results indicate that AKFTA and AANZFTA members exported 1.84% and 2.25% more than normal, respectively. Out of 5 FTAs, only AIFTA has 3 coefficients of FTA_1, FTA_2 and FTA_3 significantly positive. Although the tariff elimination ratios of AIFTA are the lowest, it creates the most trade. It is interesting that AIFTA has pure trade creation effect in terms of both exports and imports. AIFTA created 13.18% more than normal trade, letting other ASEAN-plus-one FTAs far behind.

5. CONCLUSION

The study proved that the bias problem of endogeneity can be fixed with the inclusion of country-pair effect and country-and-time effect. It found statistical evidence that ASEAN-plus-one FTAs had significant impacts on trade of members, even though the effects are quite small. Among 5 FTAs, AIFTA has the highest trade effect due to India and ASEAN members do not have other bilateral or regional agreements. AJFTA and ACFTA had pure trade creation in terms of exports for all members, whereas AKFTA and AANZFTA had pure trade creation in terms of imports. The results from this gravity approach suggest that we should focus more on and materialize the trade opportunities with AIFTA. At the same time, AKFTA and AANZFTA should be examined to understand whether they only promote imports from other outsiders and how to induce exports of FTA members.

Appendix

Appendix A1. *Gravity estimation for aggregated trade for AJFTA*

VARIABLES	(1) lnX	(2) lnX	(3) lnX	(4) lnX
lnGDPi	0.917***	0.828***	0.971***	
	(0.0400)	(0.0234)	(0.0602)	
lnGDPj	1.025***	0.715***	0.839***	
	(0.0396)	(0.0248)	(0.0665)	
lnPOPi	0.0730	-0.0111	-0.0162	
	(0.0463)	(0.0489)	(0.0764)	
lnPOPj	-0.106**	-0.996***	-0.920**	
	(0.0445)	(0.174)	(0.456)	
lnDist	-1.084***			
	(0.0985)			
lang	0.218			
	(0.156)			
adj	0.647**			
	(0.327)			
ajfta1	-0.320	-0.195***	-0.236***	1.069***
	(0.214)	(0.0370)	(0.0875)	(0.224)
ajfta2	-0.278**	-0.0644**	-0.0492	1.148***
	(0.124)	(0.0303)	(0.0783)	(0.216)

ajfta3	-0.577***	-0.0438	-0.0416	0.0773
	(0.0920)	(0.0297)	(0.0623)	(0.189)
Constant	-28.51***	-10.27***	-18.45**	12.66***
	(1.626)	(2.688)	(7.688)	(0.144)
Observations	12,050	12,050	12,050	12,050
R-squared	0.720	0.487	0.493	0.643
ols	YES			
fe		YES		
fe,ij			YES	
fe,ij,it,jt				YES
Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1				

(Source: Author's calculation)

Appendix A2. Gravity estimation for aggregated trade for ACFTA

VARIABLES	(1) lnX	(2) lnX	(3) lnX	(4) lnX
lnGDPi	0.948***	0.793***	0.959***	
	(0.0397)	(0.0265)	(0.0665)	
lnGDPj	0.993***	0.753***	0.894***	
	(0.0382)	(0.0264)	(0.0692)	
lnPOPi	0.0568	-0.0286	-0.0198	
	(0.0471)	(0.0488)	(0.0861)	
lnPOPj	-0.0805*	-0.959***	-0.701	
	(0.0433)	(0.173)	(0.462)	
lnDist	-1.072***			
	(0.0954)			
lang	0.281*			
	(0.155)			
adj	0.631*			
	(0.323)			
acfta1	-0.0272	-0.175***	-0.271***	0.453**
	(0.207)	(0.0406)	(0.0831)	(0.205)
acfta2	0.124	0.0155	0.0155	0.645***
	(0.125)	(0.0343)	(0.0837)	(0.160)
acfta3	-0.465***	-0.125***	-0.141*	-0.0424
	(0.1000)	(0.0324)	(0.0738)	(0.135)
Constant	-28.81***	-10.66***	-23.28***	12.84***
	(1.578)	(2.637)	(7.907)	(0.0972)
Observations	12,050	12,050	12,050	12,050
R-squared	0.719	0.487	0.493	0.642
ols	YES			
fe		YES		
fe,ij			YES	
fe,ij,it,jt				YES
Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1				

(Source: Author's calculation)

Appendix A3. Gravity estimation for aggregated trade for AKFTA

VARIABLES	(1) lnX	(2) lnX	(3) lnX	(4) lnX
lnGDPi	0.937***	0.830***	0.973***	
	(0.0403)	(0.0246)	(0.0620)	
lnGDPj	1.009***	0.731***	0.852***	
	(0.0391)	(0.0254)	(0.0671)	
lnPOPi	0.0676	-0.0153	-0.0141	
	(0.0463)	(0.0489)	(0.0771)	
lnPOPj	-0.0981**	-0.979***	-0.812*	
	(0.0441)	(0.175)	(0.467)	
lnDist	-1.065***			
	(0.0962)			
lang	0.259*			
	(0.157)			
adj	0.638**			
	(0.321)			
akfta1	-0.0258	-0.225***	-0.254***	0.506**
	(0.212)	(0.0386)	(0.0859)	(0.205)
akfta2	-0.0262	-0.0556*	-0.0168	0.160
	(0.128)	(0.0318)	(0.0831)	(0.131)
akfta3	-0.540***	-0.0795**	-0.0561	0.537***
	(0.0953)	(0.0311)	(0.0686)	(0.152)
Constant	-28.87***	-10.94***	-20.76**	12.85***
	(1.615)	(2.687)	(8.042)	(0.0897)
Observations	12,050	12,050	12,050	12,050
R-squared	0.719	0.488	0.493	0.643
ols	YES			
fe		YES		
fe,ij			YES	
fe,ij,it,jt				YES

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

(Source: Author's calculation)

Appendix A4. Gravity estimation for aggregated trade for AIFTA

VARIABLES	(1) lnX	(2) lnX	(3) lnX	(4) lnX
lnGDPi	0.899***	0.843***	0.986***	
	(0.0402)	(0.0255)	(0.0663)	
lnGDPj	1.027***	0.673***	0.801***	
	(0.0393)	(0.0255)	(0.0681)	
lnPOPi	0.0833*	-0.0174	-0.0157	
	(0.0466)	(0.0491)	(0.0732)	
lnPOPj	-0.102**	-1.274***	-1.145**	
	(0.0440)	(0.179)	(0.464)	
lnDist	-1.101***			
	(0.0988)			
lang	0.246			
	(0.151)			
adj	0.660**			

	(0.327)			
aifta1	-0.550**	0.000212	-0.102	1.279***
	(0.216)	(0.0387)	(0.108)	(0.186)
aifta2	-0.364***	-0.0476	-0.0669	0.821***
	(0.125)	(0.0324)	(0.0782)	(0.115)
aifta3	-0.450***	0.0837***	0.0493	0.552***
	(0.0863)	(0.0323)	(0.0668)	(0.150)
Constant	-28.20***	-4.578*	-13.98*	13.00***
	(1.609)	(2.750)	(7.887)	(0.116)
Observations	12,050	12,050	12,050	12,050
R-squared	0.720	0.486	0.492	0.642
ols	YES			
fe		YES		
fe,ij			YES	
fe,ij,it,jt				YES

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

(Source: Author's calculation)

Appendix A5. Gravity estimation for aggregated trade for AANZFTA

	(1)	(2)	(3)	(4)
VARIABLES	lnX	lnX	lnX	lnX
lnGDPi	0.914***	0.881***	1.074***	
	(0.0402)	(0.0250)	(0.0630)	
lnGDPj	1.032***	0.682***	0.851***	
	(0.0403)	(0.0251)	(0.0680)	
lnPOPi	0.0746	0.00777	0.0160	
	(0.0461)	(0.0489)	(0.0466)	
lnPOPj	-0.113**	-1.174***	-0.810*	
	(0.0451)	(0.180)	(0.475)	
lnDist	-1.066***			
	(0.0978)			
lang	0.255*			
	(0.154)			
adj	0.663**			
	(0.324)			
anzfta1	-0.207	-0.218***	-0.421***	0.533***
	(0.194)	(0.0358)	(0.0920)	(0.202)
anzfta2	-0.324**	-0.127***	-0.212***	0.0573
	(0.125)	(0.0314)	(0.0771)	(0.180)
anzfta3	-0.535***	0.0691**	-0.0493	0.646***
	(0.0927)	(0.0317)	(0.0696)	(0.152)
Constant	-28.73***	-8.004***	-23.96***	12.41***
	(1.649)	(2.775)	(8.204)	(0.210)
Observations	12,050	12,050	12,050	12,050
R-squared	0.719	0.489	0.496	0.643
ols	YES			
fe		YES		
fe,ij			YES	
fe,ij,it,jt				YES

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

(Source: Author's calculation)

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DETERMINANTS OF VIETNAM'S RICE EXPORTS

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ABSTRACT: *The main purpose of this study is to examine the major factors affecting Vietnam's rice export values to 20 major import partners by employing a gravity model. A generalized least squares (GLS) estimation method is employed on panel data over a ten-year period from 2007 to 2016. Apart from importers' GDP, all other remaining independent variables show expected signs. The findings indicate that Vietnamese rice exports have positive relationship with Vietnam's GDP, importers' population, depreciation of Vietnam's currency, average export price, members of ASEAN and importers sharing the same border with Vietnam, whereas its rice exports have adverse relationship with importers' GDP.*

Keywords: *determinant of rice export value; Vietnam; Gravity model; panel data; GLS*

1. INTRODUCTION

1.1. Research Background

Currently, Vietnam is one of the top largest rice exporters in the world market. In 2016, Vietnam was ranked the fourth biggest country that exports rice, which reduce from the second largest rice exporting country in the last few years. In Vietnam, rice plays an important role both in earning export turnover, with export value approximately 2.2 billion USD, and in the most consequential crop production of agricultural sector.

In recent years, the market share of Vietnam's rice exports has witnessed an impressive downward trend since Vietnam's rice exports deals with potential competition from other rice leading exporters like Thailand, India and other emerging markets such as Cambodia. It is more likely that the decreasing rice export may has an adverse impact on Vietnam's economy because rice is one of the most dominant export commodities of Vietnam, making up for 1.13 per cent of Vietnam's export values and contributing a crucial role to the export income. Beside facing increasing competition, the reduction of Vietnam's rice exports might be because the demand for rice in global market has been experienced a downward trend. Timmer, Block, and Dawe (2010) indicated that consumers these days tend to use substitute products containing more protein and vitamin due to the rise in their per capita income. Moreover, many countries begin to expand their rice planting area and number of rice crops for domestic demand.

1.2. Research problems and objectives

Because of the importance of rice exports in earning export turnover in Vietnam, the decrease in rice export values from the country should be taken into considerations. Moreover, it should be noticed while rice export volume of Vietnam is larger than its major competitors, export values of the country is lower than its counterpart. Therefore, it does not bring good income for Vietnamese rice farmers in recent years,

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which might contribute to declining rice export value of the country. Thus, it is vital to find out which factors affecting significantly to Vietnam's rice export to have appropriate policies to encourage rice exports.

While previous studies have indicated several insights concerning the determinants of exports in general, there are still relatively few of those regarding to factors affecting rice exports. In addition, there has not been consistence in the conclusion regarding the significant factors impacting on rice export. Especially in Vietnam, to the best of my knowledge, there is few or no impressive research which can reliably measure the relationship between rice export and its determinant. Furthermore, Vietnam's rice export performance has declined over recent years but there is no efficient policy to solve the reduction in rice export value. Considering this, the study intends to fill the gap by evaluating the determinant of Vietnam's rice exports. Understanding factors impact on rice export performance to enable policy makers issue appropriate policies to encourage export flows in rice sector and to develop situation economic in Vietnam.

The main purpose of this study is to identify factors affecting Vietnam's rice export performance with its main trading partners. To do this, the study uses the annual data during the period 2007-2016 with gravity model approach to figure out what factors that determine the flow of rice exported from Vietnam to twenty trading countries which contribute major share in imports of rice from Vietnam.

The paper was organized to four sections. Section 1 concerns the introduction with research background, as well as research problems and objectives. Section 2 discusses the methodology with briefly review previous papers and descripts data used in this study. Then, section 3 documents and discusses the estimation results. Finally, section 4 presents the conclusions and policy implication of this study.

2. METHODOLOGY

2.1. Model specification

When examining the factors impact on rice exports, the most popular model used is gravity model as it used in may research such as Ahmad and Garcia (2012), Bui and Chen (2017), Hatab et al. (2010), Muhammad Abdullah et al. (2015), Thuong (2017), Vu and Doan (2013). In this study, the model is augmented from McCallum (1995) and Linnemann (1966). The changes of some additional explanatory variables to the basic gravity model helps to provide better understanding the factors influencing Vietnam's rice export. The model estimated is as follow:

$$\ln(EX_{it}) = \beta_0 + \beta_1 \ln(GDPVN_t) + \beta_2 \ln(GDP_{it}) + \beta_3 \ln(PRO_{it}) + \beta_4 \ln(DIS_i) + \beta_5 \ln(ER_{it}) + \beta_6 \ln(POP_{it}) + \beta_7 \ln(PR_t) + \beta_8 ASEAN_t + \beta_9 BORDER + \varepsilon_{i,t}$$

EX_{it} is the total value of Vietnam rice export to country i in year t, which is measured in US dollar.

$GDPVN_t$ is the GDP of Vietnam in year t, which is measured in US dollar.

GDP_{it} the GDP of country i in year t, which is measured in US dollar.

PRO_{it} denotes the rice production of country i in year t, which is measured in ton.

DIS_i is the distance between capital cities between Vietnam and country i, which is measured in kilometer.

ER_{it} is bilateral exchange rate between Vietnam and country i in year t.

POP_{it} denotes the population of country i in year t.

PR_t is the average price of Vietnam's export rice in year t, which is measured in US dollar per ton.

ASEAN is a dummy variable equal to 1 if country i is member of ASEAN and zero otherwise.

BORDER is a dummy variable equal to 1 if country i shares the same border with Vietnam and zero otherwise.

$\varepsilon_{1i,t} \varepsilon_{1i,t}$ is error term of export equation.

All the quantitative variables will apply the natural logarithm (ln) apart from dummy variables in the model.

2.2. Description of variables and data sources

To analyze factors affecting the Vietnam's rice export within the framework of gravity model, this study employs panel dataset of yearly observations of twenty most important import partners of Vietnam's rice over the period of ten years between 2007 and 2016. The importing trading partners chosen in this study are top rice importers from Vietnam based on their average annual import value during the researched period. They are The Philippines, China, Indonesia, Malaysia, Cote d'Ivoire, Ghana, Singapore, Hong Kong, Angola, Cameroon, Mozambique, Russian, Papua New Guinea, Guinea, Algeria, The United States of America, Tanzania, South Africa, Gabon and Korea. The choice of the sample period and importing countries in this study is based on the availability of data on all the variables utilized in the study and the relative importance of each country in Vietnam's total value of rice export over the sample period. These twenty partners represented over 80 percent of the total value of Vietnam rice export in the 2007-2016 periods.

Three set of explanatory variables are employed as determinants of Vietnam's rice export values (EX). The first group of variables represents internal supply conditions in the exporting country and the external market conditions in the importing country, namely, gross domestic product (GDP), population (POP), bilateral exchange rate (ER), export price (PR), and rice production of importers (PRO). The second group of variables is a trade resistance factor, particularly the geographical distance between the capital city of Vietnam and its trading partners (DIS). The last set of variables is trade preferential factors namely, ASEAN members (ASEAN) and common border (BORDER). Outlined below is a brief description of all variables used in this study:

2.2.1. Dependent variable

EXt is the total values of Vietnam's rice exports to country i in year t (from 2007 to 2016). Data of the dependent variable was retrieved from United Nations Comtrade online database.

2.2.2. Independent variables

GDP of exporter (GDPVNt): Gross domestic product of exporter is the market value of entire production of goods and services in exporting country. GDP is one of standard variables of gravity equation. In this study, GDP is considered as a proxy of rice supply capacity. When gross domestic product of exporter increase, the supply of rice will rise along with more potential export opportunities. On the contrary, when GDP of exporter decreases, the export value of goods and services will reduce as a result. GDP of exporting country was also taken into consideration about the determinants of rice export in preceding researches such as Ahmad and Garcia (2012), Bui and Chen (2017), Hatab et al. (2010), Muhammad Abdullah et al. (2015), Thuong (2017), Vu and Doan (2013). It is expected that the indicator of exporter's GDP has positive effect on rice export value. Data was obtained from World Development Indicator online database in the World Bank.

GDP of importer (GDPit): Gross domestic product of trading partner is regarded as one of the primary indicators that are likely to impact the demand for imports in these importers. GDP reflects the ability of a country to pay for goods, hence GDP and import value of that country ties a close relationship in the same way. GDP of importing country are considered into the set of factors affecting rice exports in earlier empirical researches like Ahmad and Garcia (2012), Bui and Chen (2017), Hatab et al. (2010), Leelawattanapan and Chaiboonsri (2014), Muhammad Abdullah et al. (2015), Thuong (2017). These studies argued that if GDP of importing country increase, value of rice import from this country will increase as a result. Hence, the

relationship between importer's GDP and value of rice export is anticipated to be positive. Data is collected from World Bank's World Development Indicator online database.

Population of importer (POPit): An importing country with a huge population size is denotative of potentially larger market size and is anticipated to import more. As a result, population of importing country can cause various effects to the export of commodity especially rice. Several previous studies determine the importer's population as consideration about one of indicators of rice export (Bui & Chen, 2017; Hatab et al., 2010; Muhammad Abdullah et al., 2015; Thuong, 2017; Vu & Doan, 2013). It is expected that the relationship between importer's population and rice export value is positive. Data on population of importing countries is retrieved from World Development Indicators data from World Bank.

Exchange rate (ERit): The bilateral exchange rate is the price of exporter's currency expressed in terms of currency of trading partners. Because there is no direct exchange rate between Vietnam dong (VND) and some currencies of trading partners. In these situations, exchange rate is calculated by dividing the Vietnam Dong/USD rate and importing country's currency/USD ratio. In this study, an increase in exchange rate denotes a depreciation of VND. Thus, when exchange rate increase cause Vietnam's rice become cheaper in importing countries, which lead to importers are likely to buy more Vietnam's rice. Hence, the exchange rate is expected to be positively signed. Many previous researches have taken exchange rate into consideration the factors effect on rice export (Adhikari, 2014; Ahmad & Garcia, 2012; Bui & Chen, 2017; Hatab et al., 2010; Leelawattanapan & Chaiboonsri, 2014; Maneejuk et al., 2016; Molina et al., 2013; Muhammad Abdullah et al., 2015; Shane et al., 2008; Vu & Doan, 2013). Data on exchange rate was sourced from the World Bank, Global Economic Monitor online database.

Export price (PRt): Price is considered as one of the leading factors determining the competitiveness of products in the international market. It is argued that when price increase the producers want to produce more and the exporters want to export more. Vietnam's rice has represented a strong brand name in the world market, therefore, rice is preferred by global consumers and they are willing to pay for that product. This could be explained by the fact that rice exporter in Vietnam tend to export more in those markets where they can obtain a higher price. Therefore, this variable is anticipated to have a positive effect on value of rice export (Adhikari, 2014; Ahmad & Garcia, 2012; Bui & Chen, 2017; Javed et al., 2015; Maneejuk et al., 2016). Data on export price is retrieved from Global Economic Monitor Commodities available on World Bank, International Monetary Fund and reports on United States Department of Agriculture.

Importer's rice production (PROit): Volume of rice production from importing country represents the domestic production capability to meet the domestic demand. If a trading partner experiences rice production less than rice consumption, this country tends to import from global market. Therefore, this lead to the increase in the rice export from Vietnam and vice versa. In this study, the coefficient of importer' rice production is expected to be negatively signed. Some earlier studies added rice output of importing country to their estimation model (Adhikari, 2014; Bui & Chen, 2017; Leelawattanapan & Chaiboonsri, 2014; Thuong, 2017). Data on this variable is sourced from Food and Agriculture Organization of the United Nations online database.

Distance (DISi): Distance between exporter and importer is the basic variable of gravity model. As a proxy for transaction cost, the bilateral distance is used by calculating geographical distance between two capital cities of Vietnam and its trading partner. Since the bilateral distance determines the transportation cost, the more transportation cost will lead to the reduction in the trade between two countries and vice versa. Thus, distance is expected to be negative. Data on distance is obtained from General Statistic Office of Vietnam (GSO).

ASEAN is a dummy variable means that whether importers of Vietnam's rice is a member of ASEAN. If partner is member of ASEAN, this country will experience comparative advantages in favor of tax reduction

as well as transportation cost reduction in enhancing the rice import from Vietnam. Therefore, the relationship between ASEAN variable and rice exports is expected to be positive (Bui & Chen, 2017; Vu & Doan, 2013).

BORDER is a dummy variable whether the trading partner shares the same border with Vietnam or not. When trading with neighboring countries, the transportation costs are relatively low, resulting in higher import from Vietnam. Thus, this variable is anticipated to be positively signed (Bui & Chen, 2017; Hatab et al., 2010; Muhammad Abdullah, 2015).

3. RESULTS AND DISCUSSION

Table 1: Summary statistic

Variable	Observation	Mean	Standard Deviation	Minimum	Maximum
lnEX	200	17.26148	1.82979	10.1309	20.88711
lnGDPvn	200	25.65109	0.3115702	25.07244	26.04762
lnGDPim	200	25.78311	2.094794	22.56091	30.5555
lnPRO	200	11.57358	5.307113	0	19.1678
lnDIS	200	8.631156	0.8119578	6.7663	9.49899
lnER	200	5.882321	2.801019	0.49305	10.01524
lnPOPim	200	17.19659	1.641252	14.21374	21.04438
lnPR	200	6.022329	0.1705507	5.731391	6.341549
Asean	200	0.2	0.4010038	0	1
border	200	0.05	0.2184919	0	1

Source: Compiled by authors.

3.1. Diagnostic Tests

3.1.1. Pearson's correlation analysis

Pearson's correlation analysis is the most commonly used to examine the strengths of the correlation between each pair of variables in regression model to determine whether there would be multicollinearity or not. Multicollinearity must be checked because it leads to the increase of variance of the coefficient estimates and make the estimates becomes sensitive to minor changes in the model, therefore reduces the accuracy of the estimate coefficients which weakens the statistical power of the regression model. In this test, two independent variables may obtain multicollinearity in case that the Pearson correlation between them is larger than 0.6.

Table 2: Pearson's correlation coefficient between the variables

	lnEX	*lnGDPvn*	*lnGDPim*	*lnPRO*	*lnDIS*	*lnER*	*lnPOPim*	*lnPR*	*asean*	*border*
lnEX	1									
lnGDPvn	0.1486	1								
lnGDPim	0.1117	0.079	1							
lnPRO	0.1245	0.0249	0.287	1						
lnDIS	-0.3138	0	-0.3754	0.1375	1					
lnER	0.2237	0.0034	0.3291	-0.3385	-0.2067	1				
lnPOPim	0.223	0.0341	**0.6501**	**0.7318**	-0.1685	-0.0296	1			
lnPR	0.1064	-0.1451	0.0002	-0.0027	0	0.0138	-0.0092	1		
Asean	0.5038	0	0.1753	0.0721	-0.5763	0.064	0.1191	0	1	
Border	0.1723	0	0.4207	0.3271	-0.2489	0.1736	0.536	0	-0.1147	1

Source: Compiled by authors

Table 2 shows the Pearson's correlation analysis for the variables presented in this study. The correlation coefficient's matrix demonstrates most of independent variables had positive relationship with the dependent variable apart from Distance which had negative correlation with total value of rice export. It can be seen that most of the variables have low correlations (less than 0.6) apart from population of importers and these production (0.7318), and population of importers and these GDP (0.6501). The presence of relatively high relationship between these variables indicates that there might be multicollinearity problems. Therefore, there is a need to carry out another test to check the multicollinearity.

3.1.2. Variance inflation factor (VIF) test

To make certain about the multicollinearity, the Variance Inflation Factor (VIF) should be tested. Particularly, VIF greater than 10 is a problem, nevertheless, VIF less than 10 can be tolerated.

Table 3: Variance inflation factor (VIF) test

Variable	VIF	1/VIF
lnPOPim	4.44	0.225367
lnPRO	3.42	0.292096
lnGDPim	2.46	0.406178
lnDIS	2.38	0.419542
Asean	1.96	0.509154
Border	1.84	0.542734
lnEX	1.55	0.644051
lnGDPvn	1.03	0.969448
lnPR	1.02	0.978214
Mean VIF	**2.24**	

Source: Compiled by authors.

Results for VIF test can be seen below in the Table 3. Because all the VIF coefficients of all explanatory variables are less than 10, it is concluded that the multicollinearity does not exist among variables. As a result, the dataset used is appropriate for further estimation.

3.2. Empirical Results

The most common estimation method using in this research area is ordinary least squares (OLS), however OLS estimation may face problems of heteroskedasticity and autocorrelation, which may cause inaccurate results. The study, therefore, uses generalized least squares (GLS) to avoid these econometric problems.

Table 4: Gravity model estimation results based on GLS regression

Rice export value (lnEX)	GLS Regression
Vietnam's GDP (lnGDPvn)	1.083955***
	(0.3838948)
Importers' GDP (lnGDPim)	-0.3096992***
	(0.0639216)
Importers' production (lnPRO)	-0.0016461
	(0.0280917)
Distance between Vietnam and importers (lnDIS)	0.0508843
	(0.2149877)
Exchange rate between Vietnam and importers (lnER)	0.185437***
	(0.0402179)

Importers' population (lnPOPim)	0.3376779***
	(0.0906924)
Export price (lnPR)	1.417292**
	(0.6710353)
Asean	2.489678***
	(0.3831779)
Border	1.504184*
	(0.8032676)
Observation	200

Source: Compiled by authors.

Notes: The figures in parentheses are standard errors. ***, **, and * in the table denote statistical significant coefficient at 1 per cent, 5 per cent and 10 per cent level respectively.

The estimation results from GLS estimation indicate that most coefficients are statistically significant at 1 per cent, and most of the significant variables experience the positive relationship with Vietnam's rice export value.

The indicator of GDP of Vietnam is significant at 1 per cent. Vietnamese rice export values will raise by 108 per cent when Vietnam's GDP increase 1 per cent. This finding is consistence with theory as when GDP increases, the supply of rice will go up which exposes the host country more potential export opportunities. In addition to this, Vietnam is an export – oriented country, the increase in GDP will potentially enhance the total export value of rice. Ahmad and Garcia (2012) argued that this positive and elastic coefficient denoted that rice exports are sensitive to domestic supply (production capacity); therefore, economic growth and greater production of rice can stimulate rice exports. The similar results have been pointed out by various studies such as Ahmad and Garcia (2012), Hatab et al. (2010), and Muhammad Abdullah et al. (2015).

However, the estimation results show that importers' GDP have a negative effect on rice export values from Vietnam. The coefficient is significant at 1 per cent and the magnitude of the effect is -0. 31, which indicate that 1 per cent increase in GDP of import partners lead to a reduction in Vietnam's rice exports by 31 per cent. The possible explanation of this adverse relationship might be because rice is inferior goods, that rise in living standards in trading partners along with rise in income so that people in these countries, which will decrease demand of that goods. As a result, when GDP of importers increase, the demand of rice declines which cause a reduction in rice imported from Vietnam to these countries. In contrast, the estimation results of main import partners' population indicate an expected sign when this variable has a positive impact on rice exports of Vietnam. The estimated coefficient is 0.338. Given the population variables are expressed in logarithms, it can be interpreted as a 1 per cent increase in population of major trading partners will lead to a 33.8 per cent increase in rice exports of Vietnam. The positive relationship is completely consistent with the theoretical predictions of the gravity model.

Bilateral exchange rate is significant at 1 per cent. The estimation results suggest that 1 per cent depreciation in the value of Vietnam Dong leads to an increase in total value of rice export of 18.5 per cent. This outcome is similar with expectation and consistent with economic theory. When Vietnam Dong devaluate, the relative cost of rice from Vietnam become lower with importers resulting in larger Vietnam's rice import demand of trading partners. As a result, the increase in depreciation of VND enhance the value of rice export from Vietnam. This finding appears to be quite similar to the findings of previous papers, such as Ahmad and Garcia (2012), Hatab et al., (2010), and Muhammad Abdullah et al. (2015).

Mentioned in Table 4, the indicator of average export price is significant at 1 percent. The results indicate that an increase by 1 per cent in the average export price causes the value of rice export from Vietnam grow

up by 141.7 per cent. The possible explanation of the finding because when the price increase, the exporters are likely to export more. In addition to this, the increase in price consequently results in the increase in the value of rice export. Ahmad and Garcia (2012) argued that the exporter's decision regarding the choice of an export market responds closely to price. It means that exporters export more to markets where a higher price is obtained. This finding is in line with findings of Ahmad and Garcia (2012) and Thuong (2017).

The estimation results show that the coefficient of ASEAN has the expected signs and is statistically significant at 90 per cent level of confidence. The positive relationship between the ASEAN variable and Vietnam's rice exports indicates that if importers are members of ASEAN, these countries have comparative advantages in favor of tax reduction due to enforcing free trade agreements when intra-trade between members. The coefficient is 2.49 which reflect that when importers are ASEAN members, rice exports of Vietnam to its trading partners are enhanced by 249 per cent.

The indicator of Border coefficient is positive and significant at 10 per cent. The magnitude of the effect is 1.50 which shows that when trading with neighboring countries, rice import value from Vietnam increase by 150 per cent. The estimation results confirm the preliminary expectations that trading between nations with same border, transportation costs are relatively low, resulting in higher trade flows between these countries.

The estimation results of distance and export price variables are not statistically significant. Despite their insignificance, these variables are left in model, as their removal may distort the signs and explanatory power of the other variables.

4. CONCLUSIONS AND POLICY IMPLICATION

4.1. Summary

The main purpose of this study is to examine what factors affecting export performance of rice industry in Vietnam during the period 2007-2016. In the study, the gravity model approach was employed to explore factors that have impact on Vietnam's rice export as this model is considered as one of the most efficient models in explaining bilateral trade. The period of 2007-2016 was chosen because the research targets to provide the most updated results. Twenty major trading partners were chosen because they accounted for more than 80 percent of the total value of Vietnam's rice export in the 2007-2016 periods.

The estimated results indicate that GDP of Vietnam is found to be a significant and positive determinant of Vietnam' rice export in two models. The rise in Vietnam's GDP results in the increase in Vietnam's rice export. Other significant factors affecting rice export from Vietnam found are population and GDP of importing countries. The positive and significant of population variable indicates that increasing in population of major importers enhances the demand of rice resulting in increase in the value of rice export from Vietnam. However, GDP of importers have a harmful effect on Vietnam's rice exports since people in import countries have higher income, they are more likely to choose other substitute products than rice as mentioned above. Average export price is found to be positively and significantly affecting rice export from Vietnam. Increasing price of rice export help increase the value of rice export from Vietnam. Bilateral exchange rate is found significantly in the model, indicating that depreciation in Vietnam Dong against the currencies of its trading partners stimulates rice export. Being members of ASEAN countries and sharing the same border are also concluded to be positively and significantly impacting Vietnam's rice export values. These positive and significant relationship indicates that an increase in rice exports from Vietnam resulting from trading with ASEAN and neighbour countries.

4.2. Policy recommendations

The key findings of this research have important implications for export policies in Vietnam's rice exports. Based on these findings, the following recommendations are for policy makers issuing trade policies which aim at expanding the value of Vietnam's rice exports to main import partners to maximize revenues from export and enhance the pace of the national economic growth.

Firstly, the positive relationship between GDP of Vietnam and value of rice exports from Vietnam indicates that rice export is sensitive to domestic supply and economic growth and greater production of rice can boost the rice exports. Consequently, Vietnam's production capability should be enhanced to utilize export potential. Particularly in rice sector, the government should devote attention to technological improvement by encouraging research and development for new types of rice with high quality and good productivity. Moreover, the government should encourage rice farmers to apply technical advances into production, harvesting, processing and post-harvest preservation to increase productivity and product quality, reduce costs and improve competitiveness. Large-scale rice farming should be encouraged to enhance the product quantity therefore boost the product capability.

Secondly, while importers 'population have positive effects on Vietnam's rice exports, its impacts of importers' GDP are negative. Vietnamese government and rice exporters, therefore, should pay more attention to markets with large population rather than markets with high income. Hence, to increase rice export performance to major trading partners, the policy makers should issue appropriate trade policies targeting to populated countries.

Thirdly, the positive relationship between average rice export price and value of rice export from Vietnam indicates the importance of price in determining the value of rice export. Since Vietnam has exported more types of rice with high value such as basmati and sticky rice, resulting in the rising value of rice export in recent years. Therefore, the government should encourage to export the high value rice varieties which contribute significantly to export price of Vietnam's rice.

Next, exchange rate plays vital role in rice export, so the central bank of Vietnam should effectively manage the exchange rate because a depression in Vietnam Dong would stimulate the rice export from Vietnam, but it would also have other negative consequences on economy. For example, the depression in Vietnam Dong should increase the inflation. Therefore, the State Bank of Vietnam need to have policy in a flexible way that is suitable to situation as well as different objects of economic development in different periods.

Lastly, positive relationship between trading with ASEAN members as well as neighbour countries and Vietnam's rice export values indicate the important role of participating in free trade agreement and trading with neighbour countries. Therefore, policy makers should issue policies which encourage joining to global associations and free trade agreements to enjoy advantages from reducing tariff and transportation costs.

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CONFIRMATORY FACTOR ANALYSIS OF TQM PRACTICES, SCM PRACTICES AND COMPETITIVENESS OF MANUFACTURING INDUSTRIES IN SOUTH SULAWESI, INDONESIA

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Abstract - *TQM practices and SCM practices are well known as best practices that can be applied to improve firm competitiveness. This study aimed to develop and re-validate the construct/ variable of SCM practices, TQM practices, and competitiveness. In addition, to know and analyze the important indicator that formed those variables. This study was conducted through a survey of 143 manufacturing companies in South Sulawesi, Indonesia. Data were analyzed by using Confirmatory Factor Analysis (CFA). The results of this study showed that there are seven valid indicators that forming TQM practices variable. Quality policy was an important indicator in forming variable of total quality management practices. Variable of supply chain management practices can be measured by using five valid indicators where customer relationship was an important indicator in forming supply chain management practices. Then, competitiveness variable can be measured by using five valid indicators, where product innovation as an indicator that gives a greater contribution to competitiveness variable.*

Key words: *TQM practices, SCM practices, Competitiveness, Manufacturing Industries*

1. INTRODUCTION

In the two last decades, concept of competitiveness has become an important concern both by practitioners and academicians. Conceptually competitiveness can be seen from the ability of each company to present goods and services that have high quality and competitive prices. Competitive products have better quality, price, product delivery, and flexibility than competitors in the marketplace (Barney, 1991, Heizer and Render, 2010, Munizu et al., 2012).

There are some concepts of best management practices in manufacturing companies that adopted to create competitiveness of companies such as supply chain management practices - SCM practices and total quality management practices TQM practices – TQM practices (Heizer and Render, 2010). Implementation of SCM practices within organization will give positive impact on firm competitiveness along supply chain system includes suppliers, companies, and customers (Pujawan and Erawan, 2010). SCM practice can also enhance competitiveness through integration among suppliers, companies, and customers (Kim, 2006, Chopra& Miendl, 2007). There are two important things in understanding concept of supply chain management. First, supply chain management is a collaborative effort among parts or processes within product cycle system. Second, supply chain management should cover all product cycle activities (Mamad and Chahdi, 2013).

The concept of Total Quality Management practices (TQM Practices) has been developed in many studies as a result of global competition. The Total Quality Management practices is an approach to quality improvement systematically with using many dimensions (Kaynak, 2003). Total Quality Management beside

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as philosophy and principles of management, it is also a set of strategies and practices that can be used to improve competitiveness of the firm through fulfilling either customer needs or customer satisfaction (Jabnoun and Sedrani, 2005; Chase et al., 2009; Krajewski et al., 2011). Furthermore, concept of company competitiveness in this study based on the Resources Based View proposed by Barney (1991) that states both the resources and capabilities of an organization are a source of competitive advantage. Resource-Based View (RBV) emphasizes the importance of internal resources to achieve a sustainable competitive advantage within an organization. This perspective states that company performance is a function of how well managers build their organizations in relating to producing a valuable product, rare, difficult to replicate and difficult to replace with others. Then, this construct developed through a review of a number of relevant literatures.

Several previous studies have investigated the relationship among SCM practices, TQM practices and competitiveness. Most of them prove that both TQM practices and SCM practices are an approach to enhance competitiveness (Sila, 2007, Prayogo and Hong, 2008, Salehaldin, 2009, and Miyagawa & Yosida, 2010). However, the implementation both SCM practices and TQM practices give different results in improving organization competitiveness (Munizu et al., 2012). This study contributes to understand the important indicators that forming variable of SCM practices, TQM practices, and competitiveness in the manufacturing industries context. Therefore, this study will answer to the following research question:

1. RQ1: How many indicators were valid in measuring constructs of TQM practices, SCM practices, and competitiveness?

2. RQ2: What is the important indicator that formed constructs of TQM practices, SCM practices, and competitiveness?

Therefore, the purpose of this study is to develop and re-validate indicators of the concept of TQM practices, SCM practices, and competitiveness at manufacturing companies on Indonesia context. Moreover, this study was aimed to analyze the important indicator which formed construct of TQM practices, SCM practices, and firm competitiveness.

2. RESEARCH METHODS

This study used a quantitative approach. It emphasizes on testing theories or concepts through measurement of variables (Hair et al., 2006). This study was carried out in Makassar Industrial Area, South Sulawesi. There are 286 manufacturing companies operating in the region. The number of samples surveyed was 143 manufacturing companies in South Sulawesi Province, Indonesia. Data was collected by using observation techniques, questionnaires, and documentation. Constructs or variables were tested in this study can be classified into three variables namely Total Quality Management Practices - TQM practices, Supply Chain Management Practices - SCM practices), and firm competitiveness. The indicator of every construct in this study explored through review of relevant literature. The indicators of TQM practices adopted from Demirbag et al. (2006), and Han et al. (2007), and Zakuan et al. (2010) while SCM practices adopted from Li et al. (2005), Kim, SW. (2006) and Mamad & Chahdi, (2013). Then, competitiveness indicator adopted from Li et al. (2006), Han et al. (2007), Lakhal (2009), and Munizu et al. (2012). Furthermore, it was developed in accordance with the research context.

This study used questionnaire for primary data collecting. It validated by experts and managers of companies before used. Variables of the study were measured by using a Likert scale. Where, the score of 1 means strongly disagrees, while the score of 5 means strongly agrees. Furthermore, the method of analysis used in this study was Confirmatory Factor Analysis (Hair et al., 2006). Then, data processed by using AMOS Software.

3. RESULTS AND DISCUSSION

Confirmatory Factor Analysis Results – TQM Practices

TQM practice variables are measured through 7 indicators adopted from Demirbag et al. (2006), Han et al. (2007), and Zakuan et al. (2010) namely: (1) role of top management ($X_{1.1}$), (2) Quality data reports ($X_{1.2}$), (3) Quality policy ($X_{1.3}$), (4) training of quality ($X_{1.4}$), (5) employee relationship ($X_{1.5}$), (6) Process management ($X_{1.6}$), and (7) Product design ($X_{1.7}$). The results of confirmatory factor analysis (CFA) on total quality management practices variable can be presented in the following table and figure below.

Table 1. Result of Goodness of Fit Model of TQM Practices – X_1

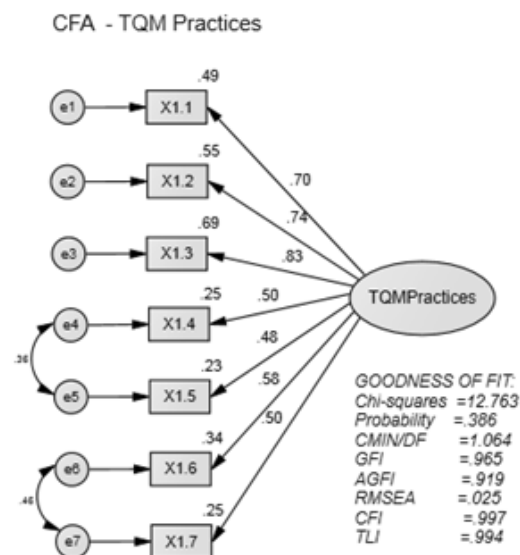| Criteria	Cut-off Value	Model Result	Description
Chi-Square	Expected small	12.763	Fit
CMIN/DF	≤ 2.00	1.064	Fit
GFI	≥ 0.90	0.965	Fit
RMSEA	≤ 0.08	0.025	Fit
CFI	≥ 0.95	0.997	Fit
TLI	≥ 0.95	0.994	Fit

Figure 1. Result of CFA – TQM Practices

Based on the figure above, it can be inferred that variable of total management practices have a goodness of fit index (GFI) value greater than standard value = 0.90; (0.965> 0.90). Then, these results indicate that the constructs formed have a good fit index. Moreover, indicator $X_{1.3}$ namely: Quality policy is an important indicator in forming variable of total quality management practices with loading factor value of 0.831. This value was greater than other indicators value in the construct of TQM practices. Therefore, the results of this study consistent with the previous study and can be used for next study.

Confirmatory Factor Analysis Results – SCM Practices

SCM practice variables are measured through 5 indicators adopted from Li et al. (2005), Kim, SW. (2006) and Mamad & Chahdi, (2013) namely: (1) Management of supplier strategic partnership ($X_{2.1}$), (2)

Cross-functional collaboration ($X_{2.2}$), (3) Customer relationship ($X_{2.3}$), (4) Information sharing ($X_{2.4}$), and (5) Postponement ($X_{2.5}$). The results of confirmatory factor analysis (CFA) on supply chain management practices variable can be presented in the following table and figure below.

Table 2. Result of Goodness of Fit Model of SCM Practices – X_2

Criteria	Cut-off Value	Model Result	Result
Chi-Square	Expected small	5.911	Fit
CMIN/DF	≤ 2.00	1.478	Fit
GFI	≥ 0.90	0.979	Fit
RMSEA	≤ 0.08	0.069	Fit
CFI	≥ 0.95	0.988	Fit
TLI	≥ 0.95	0.969	Fit
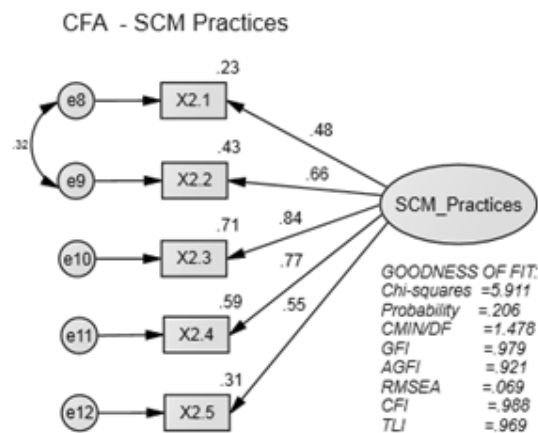
Figure 2. Result of CFA – SCM Practices

Based on the figure above, it can be inferred that variable of supply chain management practices have a goodness of fit index (GFI) value greater than standard value = 0.90; (0.979> 0.90). Then, these results indicate that the constructs formed have a good fit index. In addition, indicator $X_{2.3}$ namely: customer relationship is an important indicator in forming supply chain management practices with loading factor value of 0.843. This value was greater than other indicators value in the variable of SCM practices. Therefore, the results of this study consistent with the previous study and can be used for future research.

Confirmatory Factor Analysis Results – Construct of Competitiveness

Competitiveness variables are measured through 5 indicators adopted from Li et al. (2006), Han et al. (2007), Lakhal (2009), and Munizu et al. (2012) namely: (1) Cost ($X_{3.1}$), (2) Quality ($X_{3.2}$), (3) Flexibility ($X_{3.3}$), (4) Speed of delivery ($X_{3.4}$), and (5) Product innovation ($X_{3.5}$). Then, results of confirmatory factor analysis (CFA) on competitiveness variable can be presented in the following table and figure below.

Table 3. Result of Goodness of Fit Model of Competitiveness – X_3

Criteria	Cut-off Value	Model Result	Description
Chi-Square	Expected small	2.703	Fit
CMIN/DF	≤ 2.00	0.901	Fit
GFI	≥ 0.90	0.990	Fit
RMSEA	≤ 0.08	0.000	Fit
CFI	≥ 0.95	1.000	Fit
TLI	≥ 0.95	1.003	Fit
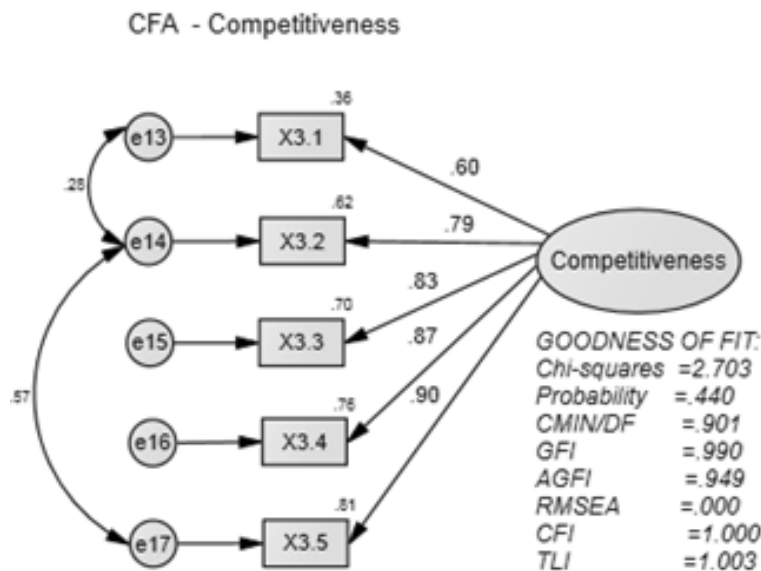
Figure 3. Result of CFA – Competitiveness

Based on the figure above, it can be inferred that variable of competitiveness have a goodness of fit index (GFI) value greater than standard value = 0.90; (0.990> 0.90). Therefore, the results indicate that the constructs formed have a good fit index. Moreover, indicator $X_{3.5}$ namely: product innovation is an important indicator in forming variable of competitiveness with loading factor value of 0.901. This value was greater than other indicators value in the variable of competitiveness. Therefore, the results of this study consistent with the previous study and it can be used for next study by researcher.

4. CONCLUSIONS

This study proves that there are seven valid indicators that forming TQM practices variable at manufacturing industries in Indonesia context includes role of top management, Quality data reports, Quality policy, training of quality, employee relationship, Process management, and Product design. Quality policy is an important indicator in forming variable of total quality management practices. Then, variable of supply chain management practices can be measured by using five indicators i.e.: management of supplier strategic partnership, cross-functional collaboration, customer relationship, information sharing, and postponement. Customer relationship is an important indicator in forming supply chain management practices. In Addition, competitiveness variable can be measured by using five indicators, namely: cost/ price, quality, flexibility, speed of delivery, and product innovation, where product innovation as an indicator that gives greater contribution than other indicators that formed competitiveness variables.

The results of this study provide important information and guidance for both managers and researchers, primarily related to decision-making in the field of quality and research on company competitiveness.

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WELFARE COSTS OF SHIFTING TREND INFLATION: STAGGERED WAGE AND PRICE CONTRACTS

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Abstract: We develop a New Keynesian model featuring Calvo price setting and Calvo wage setting to study welfare consequences of exogenous variations in trend inflation. We find that shifting trend inflation produces a large welfare cost, which can be mainly accounted not only by a reduction of the average level of consumption and working hours, but also by an increase in their volatility. When trend inflation is high, these variables become more volatile, which make up for an increasingly considerable proportion of welfare reductions. Further, the staggered wage contracts play a vital role in transmitting adverse impacts of shocks to trend inflation into economy.

JEL classifications: C63, E31, E52.

Keywords: Shifting Trend Inflation, Welfare Consequences, Staggered Prices, Staggered Wages, Second Order Approximation.

1. INTRODUCTION

The New Keynesian Phillips curve (NKPC, henceforth), a key element of Dynamic Stochastic General Equilibrium (DSGE, henceforth) models, has been used widely for theoretical, empirical and monetary policy analysis. However, the assumptions of NKPC are sometimes restrictive that either trend inflation[2] must be zero or firms must index their prices to past inflation or target inflation[3]. First, central banks in the real world have invariably selected positive inflation targets, thus the assumption of zero inflation target is exceedingly rare. Second, misleading conclusions could be drawn when we assume the zero steady-state inflation. For instance, a divine coincidence suggested by Blanchard and Gali (2007)[4] or a highly non-linear and positive slope of the long run NKPC[5] might not be true in the case of positive trend inflation. Moreover, Levin and Piger(2003) and Ireland (2007)[6] indicate that trend inflation has the tendency to vary over time.

The aforementioned reasons motivate the case for studying optimizing behavior without making an assumption of zero trend inflation. However, most existing versions of NKPC have focused on constant

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positive trend inflation[1], while they have not paid enough attention to the property of its time-varying variation (shifting trend inflation). Few papers have recently investigated it to show necessities of the research on this field. For example, Kozicki and Tinsley (2001) explore implications of shifting trend inflation for the term structure of interest rates, while its effects on output and overall inflation are investigated by Ireland2007. Furthermore, Cogley and Sbordone (2008) and Cogley, Primiceri, and Sargent (2009) conduct research to examine implications of shifting trend inflation for estimated parameters and a predictability of inflation, respectively. Most recently, welfare consequences of shifting trend inflation are measured by Nakata (2014). The similar spirit of the existing literature is that the previous studies employ a highly persistent shock to trend inflation, regarded as the central bank's moving implicit targets to model shifting trend inflation and they adapt only one form of rigidities. So far, these papers only discuss the sticky-price model with shifting trend inflation.

To fill the gap in the literature, this paper also investigates welfare consequences of shifting trend inflation but we argue that the trend inflation process can adversely impact the economy by distorting output and labor allocations through staggered price and wage contracts. In particular, the Calvo mechanism generates the price and wage dispersion. They in turn induce a gap between the average price level and the price set by resetting firms, and a gap between the average wage level and the wage set by resetting households. The following reasons inspire an inclusion of both price and wage rigidities. First, a tendency to discuss price and wage rigidities as independent phenomena seems to be inappropriate at the macro-level as argued by Basu and House (2015). The price rigidities depend significantly on the wage rigidities since most models assume that target prices are set as a constant mark-up on nominal marginal cost. The inertia of the price levels then depends on the sluggish adjustment of marginal costs, in which wage accounts for the greatest proportion. As a result, wage stickiness reinforces price stickiness. Second, the empirical New-Keynesian model incorporating the wage rigidities is more successful in explaining cyclical fluctuations as argued by Christiano, Eichenbaum, and Evans (2005). In the scope of this study, we examine whether wage rigidities are quantitatively important in explaining welfare costs of shifting trend inflation. Erceg, Henderson, and Levin (2000) employ the model with both price and wage stickiness to show that variability of growth rates of nominal wages implies misalignment of wages, thus an inefficient utilization of labors. The inefficient utilization of labor then is magnified by constant positive trend inflation (Ascari, Phaneuf, & Sims, 2016).

So far, researchers have not investigated impacts of shifting trend inflation in the model with staggered price and wage contracts. This paper, thus, expands the existing literature by incorporating both price and wage rigidities to quantify costs of shifting trend inflation. We address the following questions: (i) how large welfare costs of shifting trend inflation are? and (ii) do staggered price or wage contracts more importantly determine the welfare costs of shifting trend inflation?

To solve these questions, we study the same model as Ireland (2007) but considerably expand by developing the model with a Calvo staggered price setting and a Calvo staggered wage setting. While the Calvo price setting is popular in literature, we follow Erceg, Henderson, and Levin (2000) for the Calvo wage setting. Trend inflation is supposed to follow an AR(1) process to model a sustained rise in inflation. We argue that exogenous variations in trend inflation can distort the economy by two channels: staggered prices and staggered wages. Moreover, we discuss two special cases: the model with staggered price contract and completely flexible wage, and the model with completely flexible price and staggered

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[1] For example, we can see in Ascari (2004), Amano, Ambler, and Rebei (2007), Ascari and Ropele (2007), and Coibion and Gorodnichenko (2011).

wage contract. This discussion is useful to analyse the role of each mechanism individually in transmitting impacts of exogenous alternations in trend inflation into the economy.

With these extensions, we showed that the consequences of constant positive trend inflation and shifting trend inflation are severe, especially when trend inflation is high. Among two channels, staggered wage contracts play a vital role in transmitting adverse impacts of constant and shifting trend inflation into economy. This conclusion is aligned with findings in Ascari et al. (2016) who also measure welfare costs of trend inflation in the model with both staggered price and wage contracts. Our study provides other evidence that the costs of shifting trend inflation are signified when considering the staggered wage contracts. Without the staggered wage channel, welfare costs of constant and shifting trend inflation are modest as in Nakata (2014).

The rest of this paper is organized as follows. The extended model will be discussed in section 2. Section 3 explains how to compute welfare and welfare costs. Calibrated parameters are presented in section 4 while section 5 shows main results. Some conclusion is provided in section 6.

2 THE MODEL

The model is populated by five classes of agents: the final-goods producing firms, a continuum of intermediate-goods producing firms indexed by i $\in$ [0 1], employment agencies, a continuum of household indexed by j $\in$ [0 1], and the government.

2.1 The Final-Goods Producing Firm

In each period t, perfectly competitive firms manufacture Y_t units of final consumption product by using $Y_t(i)$ units of intermediate goods at the nominal price $P_t(i)$ according to the constant-return-to-scale technology as follows

$$\left[\int_0^1 Y_t(i)^{\frac{\theta_p-1}{\theta_p}} \, di \right]^{\frac{\theta_p}{\theta_p-1}} = Y_t \qquad (1)$$

where $\theta_p \theta_p$ denotes price elasticity of demand for intermediate goods. Profit maximization and the zero profit condition imply the demand function of intermediate good i is given as

$$Y_t(i) = \left[\frac{P_t(i)}{P_t} \right]^{-\theta_p Y_t} \qquad (2)$$

and that the price of the final good, P_t is a CES aggregate of the prices of the intermediate goods, $P_t(i)$

$$P_t = \left[\int_0^1 P_t(i)^{1-\theta_p di} \right]^{\frac{1}{1-\theta_p}} \qquad (3)$$

2.2 The Intermediate-Goods Producing Firm

Monopolistic firms produce the intermediate good i using the following production function

$$Y_t(i) = Z_t h_t(i), \qquad (4)$$

where $h_t(i)$ denotes the labor input for the production good i and Z_t is an exogenous stochastic

process capturing the productivity effects. In particular, $\ln(Z_t)$ follows stationary AR(1) process

$$\ln(Z_t) = \rho_Z \ln(Z_{t-1}) + \varepsilon_{Z_t}, \varepsilon_{Z_t} \quad (5)$$

where ε_{Z_t} is the serially uncorrelated innovation, which has a normal distribution with mean zero and standard deviation σ_Z. The intermediate-goods producers are assumed to set nominal prices as in staggered Calvo price fashion. According to Calvo (1983), a fixed fraction η_p of firms, which cannot re-optimize its nominal prices, still set their prices according to the indexation rule. Following Ascari (2004), the way that firms reset the price is given as

$$P_t(i) = (\pi_{t-1}^{\mu_p} \overline{\pi}_t^{1-\mu_p})^{\chi_p} P_{t-1}(i), \quad (6)$$

where χ_p and μ_p denote a degree of price indexation and the relative weight on lagged inflation, respectively. The inflation, π_t, is defined as $\frac{P_t}{P_{t-1}}$ and $\overline{\pi}_t$ is interpreted as the central bank's inflation target. Subject to the usual cost minimization condition, re-optimizing firms maximize the present value of future profits by choosing their price P_t^*

$$E_t \sum_{t=0}^{\infty} \beta^s \frac{\lambda_{t+s}}{\lambda_t} \eta_p^s [P_t^*(i)(\overline{\pi}_t^{\chi_p s})^{(1-\mu_p)}(\pi_{t-1,t+s-1}^{\chi_p})^{\mu_p} - \frac{W_{t+s}}{Z_{t+s}}]Y_{t+s}(i), \quad (7)$$

such that

$$Y_{t+s}(i) = [\frac{P_t^*(i)(\overline{\pi}_t^{\chi_p s})^{(1-\mu_p)}(\pi_{t-1,t+s-1}^{\chi_p})^{\mu_p}}{P_{t+s}}]^{-\theta_p} Y_{t+s}, \quad (8)$$

where $\pi_{t+s-1} = (\frac{P_{t+2}}{P_{t+1}})...(\frac{P_{t+s}}{P_t})$ if s = 1,2,3,..., λ_t is the same as the Lagrangian multiplier on the household's budget constraints, and W_t denotes the nominal wage.

2.3 The Employment Agency

Firms are owned by a continuum of households indexed by $j \in [0,1]$. As assumed by Erceg et al. (2000), each household is a monopolistic supplier of specialized labor, $H_t(j)$. A large number of competitive "employment agencies" combines this specialized labor into a homogeneous labor input as given

$$H_t = [\int_0^1 H_t(j)^{\frac{\theta_w-1}{\theta_w}} dj]^{\frac{\theta_w}{\theta_w-1}}, \quad (9)$$

where $\theta_w \theta_w$ denotes the desired mark-up of the wage over the household's marginal rate of substitution. The labor demand function is obtained by solving a profit maximization for the perfectly competitive employment agencies as given

$$H_t(j) = [\frac{W_t(j)}{W_t}]^{-\theta_w} H_t, \quad (10)$$

where $W_t(j) W_t(j)$ is the wage received from employment agencies by the supplier of labor of type j while the wage paid by the intermediate firms for their homogeneous labor input is expressed as

$$W_t = [\int_0^1 W_t(j)^{1-\theta_w}]^{\frac{1}{1-\theta_w}}. \quad (11)$$

2.4 The Household

Households maximize the expected discounted utility sum of future period utility

$$\sum_{t=0}^{\infty} \beta^t (\ln(C_t - \gamma C_{t-1}) - \frac{\omega}{1+\upsilon} H_t^{1+\upsilon}), \quad (12)$$

where β and γ denotes the discount factor and the habit formation parameter, which are restricted as $0 < \beta < 1, 0 \le \gamma < 1$ and υ is the inverse Frisch elasticity of labor supply.

The households budget constraint is given by

$$P_t C_t + \frac{B_t}{R_t} = B_{t-1} - P_t T_t + W_t H_t + D_t. \qquad (13)$$

At the beginning of each period, the households provide $h_t(i)$ units of labor to each intermediate-goods producing firm $i \in [0,1]$ to earn $W_t h_t(i)$. They also receive a nominal profit (D_t) due to owning the intermediate goods firms. They also save by purchasing the one-period bond, B_t, from the intermediate goods producers at the price $1/R_t$. A lump-sum tax (T_t) is imposed to finance government spending (G_t) (G_t). During each period t, households purchase consumption goods, (C_t), from the final-goods producing firms at the nominal price, P_t. Therefore, the households choose labor supply, h_t, bond holding, B_t, and consumption, C_t to maximize the lifetime utility subject to the budget constraint.

The first order conditions for the households utility maximization problem can be represented

$$\lambda_t P_t = \frac{1}{C_t - \gamma C_{t-1}} - \beta\gamma E_t\left(\frac{1}{C_{t+1} - \gamma C_t}\right), \qquad (14)$$

$$\lambda_t = \beta R_t E_t(\lambda_{t+1}), \qquad (15)$$

where $\lambda_t \lambda_t$ is a non-negative Lagrange multiplier on the budget constrain.

In term of wage setting, we follow Erceg et al. (2000) to assume that there is a fraction, η_w, of firms who cannot freely set their wage but still can update their wage as follows

$$W_t(j) = (\pi_{t-1}^{\mu_w} \overline{\pi}_t^{1-\mu_w})^{\chi_w} W_{t-1}(j). \qquad (16)$$

The remaining fraction of firms can choose an optimal wage by maximizing

$$E_t \sum_{s=0}^{\infty} \eta_w^s \beta^s \left\{ -\omega \frac{H_{t+s}(j)^{1+v}}{1+v} \right\}, \qquad (17)$$

subject to the labor demand function

$$H_t(j) = \left[\frac{W_t(j)}{W_t}\right]^{-\theta_w} H_t. \qquad (18)$$

2.5 Authority's policy

2.5.1 Monetary Policy

The authority sets the short-term nominal interest rates following a Taylor rule. In particular, the rule allows for interest rate smoothing and interest rate responses to deviations of inflation from the central bank's inflation target and deviations of output from the steady state

$$\frac{R_t}{R} = \left(\frac{R_{t-1}}{R}\right)^{\rho_R} \left[\left(\frac{\pi_t}{\pi_t}\right)^{\phi_\pi}\left(\frac{y_t}{y}\right)^{\phi_y}\right]^{1-\rho_R} exp(\varepsilon_{R_t}), (19)$$

where $\overline{R}, \overline{y}$ are the steady state of R_t and Y_t, respectively. The parameter ρ_R illustrates the degree of interest rate smoothing. ε_{R_t} is an i.i.d monetary policy shock.

The evolution of trend inflation is described as a persistent AR(1) process as

$$\ln(\overline{\pi}_t) = (1 - \rho_{\overline{\pi}})\ln(\overline{\pi}^*) + \rho_{\overline{\pi}}\ln(\overline{\pi}_{t-1}) + \varepsilon_{\overline{\pi}_t}, \qquad (20)$$

where $\rho_{\overline{\pi}} \rho_{\overline{\pi}}$ denotes the degree of shock persistence and $\varepsilon_{\overline{\pi}_t}$ is a standard normally distributed shock which is independent of time.

2.5.2 Fiscal Policy

The public spending is given by

$$G_t = (1 - \frac{1}{g_t})Y_t, G_t = (1 - \frac{1}{g_t})Y_t, \qquad (21)$$

where $g_t g_t$ is an exogenous disturbance following the stochastic process

$$\ln(g_{t+1}) = (1 - \rho_g)\ln(\overline{g}) + \rho_g \ln(g_t) + \varepsilon_{g_t}, \quad (22)$$

where $(1 - \frac{1}{g})(1 - \frac{1}{g})$ represents the steady-state value of government spending relative to output.

2.6 Market Clearing Condition

The market clearing condition in the labor market, the goods market and the bond can be expressed in turn as

$$H_t = \int H_t(i)di, \qquad (23)$$

$$Y_t = C_t + G_t, \qquad (24)$$

$$B_t = 0. \qquad (25)$$

3 WELFARE AND WELFARE COST COMPUTATION

We also use the perturbation method to compute the approximation to the policy functions around the deterministic steady-state, and use these to compute the welfare. We decompose the welfare into the three different components as given

$$E[\sum_{t=0}^{\infty} \beta^t u(x_t)] \approx \sum_{t=0}^{\infty} \beta^t u(\overline{x}) + \sum_{t=0}^{\infty} \beta^t Mu(\overline{x})E[x_t - \overline{x}] + \sum_{t=0}^{\infty} \beta^t Nu(\overline{x})E[(x_t - \overline{x}) \otimes (x_t - \overline{x})] = U_d + U_l + U_v,$$

where $x_t = [C_t, C_{t-1}, H_t]$; and $Mu(\overline{x})$ and $Nu(\overline{x})$ are vector which contain the first and second derivative of u(.) evaluated at $\overline{xx}$ which are the deterministic steady state of x_t. Three components consist of: the deterministic component, $U_d = \sum_{t=0}^{\infty} \beta^t u(\overline{x})$, the level component, $U_l = \sum_{t=0}^{\infty} \beta^t Mu(\overline{x})E[x_t - \overline{x}]$, and the volatility component, $U_v = \sum_{t=0}^{\infty} \beta^t Nu(\overline{x})E[(x_t - \overline{x}) \otimes (x_t - \overline{x})]$.

Then the welfare cost can be computed as

$$E\left[\sum_{t=0}^{\infty} \beta^t u\left(\left(1 + \frac{wc}{100}\right)C_{A,t}, \left(1 + \frac{wc}{100}\right)C_{A,t-1}, H_{A,t}\right)\right] = E[\sum_{t=0}^{\infty} \beta^t u(C_{B,t}, C_{B,t-1}, H_{B,t})],$$

where $C_{A,t}, H_{A,t}$ are consumption and labor supply in the economy with $\sigma_{\overline{\pi}} > 0$ and $C_{B,t}, H_{B,t}$, are in economy with $\sigma_{\overline{\pi}} = 0$.

4 CALIBRATION

Table 6 lists the baseline parameters, which are calibrated for the U.S. data during the 1954Q3-2015Q1 period. There are two subsets of parameters. The first subset consists of parameter values that we can compute by using the data or parameter values are standard in the literature. In particular, the standard calibration bases on the steady-state target, such as the steady-state inflation ($\overline{\pi}^*$), the steady-state share of government expenditure $(1 - \frac{1}{g})$. Some parameters are taken from the literature. For example, the discount factor, β, and the inverse Frisch elasticity, υ, are set to 0.9974 and 1.00, respectively. The parameters θ_p and θ_w are the elasticities for goods and labors which are both set at 10, common values in these models.

Moreover, we follow Justiniano and Primiceri (2008) to set the values for parameters related to persistence level and standard deviation of structural shocks. Accordingly, the autoregressive parameters of productivity shock and the government expenditure shock are set to 0.4 and 0.98, respectively. We also base on Justiniano

and Primiceri (2008) to select parameter values for Taylor rule, including the smoothing parameter, ρ_R, the coefficient on inflation, ϕ_π, and the coefficient on output growth, ϕ_y. They are in turn 0.81, 1.91 and 0.08, which are also common in the literature. Regarding the shock to trend inflation process, we set its persistence level, $\rho_{\bar\pi}$, and standard deviation, $\sigma_{\bar\pi}$, to 0.995 and 0.0008 as in Cogley et al. (2009).

The second subset includes parameters that are calibrated jointly to match selected moments in the 1954Q3-2015Q1 U.S. data. These parameters are the habit formation, γ, the probability of non-optimization for prices, η_p, the degree of price indexation, χ_p, the probability of non-optimization for wages, η_w, and the degree of wage indexation, χ_w. The five selected moments include the consumption volatility (σ_C), the volatility of consumption relative to output (σ_C/σ_Y), the volatility of labor relative to output (σ_N/σ_Y) (σ_N/σ_Y), a correlation between output and consumption $(\rho(Y,C))$, and a correlation between output and labor $(\rho(Y,N))$. These moments are important for the subsequent welfare analysis because they closely reflect the dynamic behavior of consumption and labor supply. Based on the moment matching approach, the habit formation, γ, is set to 0.91. Both the probability of non-optimization for prices and wages, η_p and η_w, are calibrated at 0.69. There is also a fair degree of price and wage indexation (0.5), which is the same but smaller than Fernandez-Villaverde, Guerron-Quintana, and Rubio-Ramirez (2010) (between 0.62-0.63).

Table 1: Moments

	σ_C	σ_C/σ_Y	σ_N/σ_Y	$\rho(Y,C)$	$\rho(Y,N)$
Data	0.008	0.56	1.42	0.79	0.87
Calibration	0.007	0.62	1.42	0.77	0.75

Note: Moments in the second row are obtained from HP-filtered U.S. data (1954Q3-2015Q1). The last row is the moments from simulations for the calibrated model.

Table 1 compares the moments generated by the parameterized model with moments computed by the data. The reported volatility and correlation statistics are for the HP-filtered U.S. data during 1954Q3-2015Q1 period. Table 1 shows that the model does a good job for matching the volatility of consumption, the variance of consumption, labor to output, and the correlation between consumption, labor and output. In sum, the key features of the data are captured reasonably well by the calibrated model. Therefore, the calibrated model can provide an appropriate laboratory for the subsequent welfare analysis.

5 RESULTS

5.1 Welfare Costs of Constant Positive Trend Inflation

General Case

Table 2 compares the welfare of an economy in which central banks set constant trend inflation at 0 annualized percent and an economy in which central banks set constant trend inflation at 4 annualized percent. We firstly discuss the model featuring both staggered price and staggered wage contracts. Table 2 shows that the greater trend inflation results in large welfare costs (nearly 4.5%%). This result is aligned line with Ascari2016 who also discuss the costs of trend inflation in the model with both staggered price and wage contracts. These welfare costs come mainly from reduction of the mean and volatility component, especially the volatility component. Conversely, the changes in the deterministic component play a small role in explaining the welfare difference. When central banks raise their inflation targets from 0 percent to 4 percent, there are changes in the mean as well as the variance of consumption and working hours. It is worth

noticing about a significant increase in variance of consumption and working hours.

Table 2: Welfare Costs of Constant Trend Inflation: Model with Staggered Price and Wage Contracts

	$\overline{\pi}^* = 1.00^{0.25}$	$\overline{\pi}^* = 1.04^{0.25}$
Welfare Cost		4.46%%
Welfare	-1242.2	-1281.4
U_d	-1219.5	-1219.6
U_l	-0.05	-0.24
U_v	-22.6	-61.5
E(C)(*)	-0.015	-0.041
E(H)(*)	-0.018	-0.050
$100\sigma_C$	1.33	2.17
$100\sigma_H$	2.50	3.22

Note: (*) expressed as percentage deviation from the deterministic steady-state. U_d, U_l and U_v are the deterministic steady-state, level and volatility component, respectively.

Two special cases: Staggered Prices and Staggered Wages

In the next exercise, we compare welfare and welfare costs of constant trend inflation in two special cases: the model with staggered price contract and completely flexible wage ($\eta_p > 0, \eta_w = 0$) and the model with completely flexible price and staggered wage ($\eta_p = 0, \eta_w > 0$). We call them the staggered price model and the staggered wage model, respectively. Table 3 reports results of these two special cases. Some main findings could be listed here. First, welfare costs due to a constant and positive trend inflation level in the staggered price model is trivial (0.22%) as compared to the staggered wage model (3.62%). The modest cost of constant trend inflation in the first special case is consistent to those of Ascari (2004), Amano, Moran, Murchison, and Rennison (2009), and Nakata (2014) that discuss trend inflation distorting the economy solely by the staggered price contracts. The higher costs in the staggered wage model when trend inflation increases from 0 percent to 4 percent suggest that a staggered wage mechanism plays a vital role in transmitting adverse impacts of varying trend inflation levels into the economy. This conclusion is similar to those discussed by Ascari et al. (2016). The changes in the property of economy due to constant trend inflation are also reported in Table 3. In the staggered price model, changes in the mean and variance of consumption and working hours are very small, whereas there are significant movements in the staggered wage model. The higher dynamics of economy due to the staggered wage contracts in part explain high welfare costs due to a constant positive trend inflation through this channel.

Table 3: Welfare Costs of Constant Trend Inflation: Two Special Cases

	Staggered Prices		Staggered Wages	
	$\overline{\pi}^* = 1.00^{0.25}$		$\overline{\pi}^* = 1.00^{0.25}$	
Welfare Cost		0.22%		3.62%
Welfare	-1232.6	-1234.3	-1240.2	-1271.7
E(C)(*)	-0.0046	-0.0069	-0.014	-0.044
E(H)(*)	-0.0001	-0.0001	-0.018	-0.057

$100\sigma_C$	0.92	0.93	1.28	2.02
$100\sigma_H$	2.14	2.23	2.44	3.07

Note: (*) expressed as percentage deviation from the deterministic steady-state. Staggered prices and wages correspond to $\eta_p > 0, \eta_w = 0$ and $\eta_p = 0, \eta_w > 0$, respectively.

In short, welfare consequences of constant positive trend inflation are severe in the model with staggered price and wage contracts. The staggered wage channel plays a vital role in transmitting adverse impacts of constant trend inflation into the economy.

5.2 Welfare Costs of Shifting Trend Inflation

General Case

Table 4 reports welfare costs of shifting trend inflation when central banks set the inflation target level to 2 annualized percent and 4 annualized percent, respectively. Trend inflation participates in the model as a shock and the presence of this shock creates welfare costs. This part discusses how this shock affects the economy in terms of welfare costs. First, we focus on the 2-percent-trend-inflation economy. The persistent trend inflation shock creates welfare costs, which is 0.6%. A reduction in welfare mainly comes from a decline of volatility component, while the deterministic steady-state component remains the same. A positive shock to trend inflation, therefore, drives the average levels of consumption and working hours down, while pushing their volatility up. In our exercise, the volatility component accounts for the largest proportion of welfare reduction, which shapes business cycle dynamics. Specifically, the standard deviation of working hours increases from 1.33 to 1.47, while an increase in those of consumption is from 2.52 to 2.62.

Table 4: Welfare Costs of Shifting Trend Inflation: Model with Staggered Price and Wage Contracts

	$\overline{\pi}^* = 1.02^{0.25}$		$\overline{\pi}^* = 1.04^{0.25}$	
	$\sigma_{\overline{\pi}} = 0$	$\sigma_{\overline{\pi}} > 0$	$\sigma_{\overline{\pi}} = 0$	$\sigma_{\overline{\pi}} > 0$
Welfare Cost		0.60%		4.27%
Welfare	-1242.4	-1246.7	-1243.9	-1281.4
U_d	-1219.6	-1219.6	-1219.6	-1219.6
U_l	-0.01	-0.03	-0.21	-0.23
U_v	-22.8	-27.8	-24.0	-61.5
E(C)(*)	-0.016	-0.023	-0.031	-0.041
E(H)(*)	-0.019	-0.028	-0.037	-0.050
$100\sigma_C$	1.33	1.47	1.35	2.17
$100\sigma_H$	2.52	2.62	2.51	3.22

Note: (*) expressed as percentage deviation from the deterministic steady-state. U_d, U_l and U_v are the deterministic steady-state, level and volatility component, respectively.

When trend inflation is 4 annualized percent, the costs of shock to trend inflation become more severe. This shock generates larger welfare costs (4.27%). The welfare differences still result from reduction of volatility component. However, a fall in volatility component is more considerable when trend inflation is higher. The economy also becomes more volatile, which is reflected by a substantial rise in the standard

deviation of consumption (1.35 to 2.17) and working hours (2.51 to 3.22). The changes in properties of economy suggest that the volatility component plays an increasingly important role in explaining a fall in welfare due to exogenous variations in trend inflation when trend inflation is high.

Two special cases: Staggered Prices and Staggered Wages

Subsequently, we discuss welfare costs of shifting trend inflation in two special cases: completely flexible price and staggered wage contract ($\eta_p = 0$ and $\eta_w > 0$), and staggered price contract and completely flexible wage ($\eta_p > 0$ and $\eta_w = 0$). Table 5 reports results of these two special cases. The most striking feature is that welfare costs of shifting trend inflation in the model with staggered wage contract (0.48%) are significantly greater than one with staggered price contract (0.04%). The modest costs of exogenous variation in trend inflation in the sticky price model is consistent with the results of Nakata (2014). Welfare differences in these two cases can be explained by changes in mean and variance of consumption and working hours, but through the staggered wage channel, any change is greater. The significant costs of shifting trend inflation in the model with sticky wage suggest that an existence of staggered wage contract is a more vital channel in transmitting adverse impacts of shifting trend inflation into the economy as compared to the staggered price.

Table 5: Welfare Costs of Shifting Trend Inflation: Two Special Cases

	Staggered Prices		Staggered Wages	
	$\sigma_{\bar{\pi}} = 0$	$\sigma_{\bar{\pi}} > 0$	$\sigma_{\bar{\pi}} = 0$	$\sigma_{\bar{\pi}} > 0$
Welfare Cost		0.04%		0.48%
Welfare	-1232.9	-1233.2	-1240.3	-1244.3
E(C)(*)	-0.0051	-0.0057	-0.0159	-0.0228
E(H)(*)	-0.0001	-0.0001	-0.0205	-0.0294
$100\sigma_C$	0.92	0.92	1.29	1.41
	2.17	2.17	2.41	2.52

Note: (*) expressed as percentage deviation from the deterministic steady-state. Staggered prices and wages correspond to $\eta_p > 0, \eta_w = 0$ and $\eta_p = 0, \eta_w > 0$, respectively.

In brief, shifting trend inflation produces large welfare costs especially in the high-trend-inflation economy. The welfare differences caused by shifting trend inflation can be mainly accounted by reduction in the volatility components. As trend inflation increases, the role of volatility component becomes increasingly important. Comparing two special cases, welfare costs created by shifting trend inflation through the staggered wage channel are more significant than those generated through the staggered price channel. The results suggest that the staggered wage is an important factor determining the welfare costs of shifting trend inflation[1].

6 CONCLUSIONS

The literature on shifting trend inflation has so far only considered the price rigidities. The present study, therefore, developed the model featuring a staggered price and wage contracts to fill the existing gap. Further, we assumed implicit inflation target to be positive and time-varying due to a lack of commitment in the policy implementations of central banks. Thus, trend inflation was modelled as a highly persistent

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[1] To support these two conclusions in this paper, we conduct additional analyses that use the asymmetric parameter values. The results of these exercises are reported in Appendix 9.

AR(1) process. We then compared welfare of an economy with zero and the other with positive variance of innovation to the trend inflation process. To analyse the role of each channel importantly determining welfare costs of shifting trend inflation, we discussed two special cases: the model with staggered price contract and completely flexible wage, and the model with completely flexible price and staggered wage contract.With these extensions, we showed that welfare consequences of constant positive trend inflation and shifting trend inflation are severe, especially when trend inflation is high. Furthermore, among the two channels, staggered wage contracts play a vital role in transmitting adverse impacts of constant and shifting trend inflation into economy.

APPENDIX

7 PARAMETERS

Table 6: Calibration

Parameter	Description	Calibrated Value	
β	Discount factor	0.9974	
γ	Consumption habit	0.91	
ω	Labor supply disutility	1.00	
υ	Inverse Frisch elasticity of labor supply	1.00	
$1 - \overline{g}^{-1}$	Steady state share of Government expenditure	0.26	
ρ_Z	AR(1) coefficient for technology shock	0.40	
ρ_g	AR(1) coefficient for government spending shock	0.98	
$100\sigma_Z$	Standard deviation of technology shock	1.10	
	Standard deviation of government spending shock	0.55	
Monetary Policy			
ϕ_π	Taylor coefficient on the inflation gap	1.92	
ϕ_y	Taylor coefficient on the output gap	0.08	
ρ_R	AR(1) coefficient for monetary shock	0.81	
$100\sigma_R$	Standard deviation of monetary shock	0.25	
Calvo Price Setting			
θ_p	Price elasticity	10.0	
η_p	Probability of not being able to optimize		[0.6,0.65,0.7,0.75]
χ_p	Degree of price indexation		[0.0,0.33,0.67,1.0]
μ_p	Weight on lagged inflation	1.00	
Calvo Wage Setting			
θ_w	Wage elasticity	10.0	
η_w	Probability of not being able to optimize		[0.6,0.65,0.7,0.75]
χ_w	Degree of wage indexation		[0.0,0.33,0.67,1.0]

μ_w	Weight on lagged inflation	1.00
Shifting Trend Inflation		
$\overline{\pi}^*$	Steady-state level of trend inflation	$[1.00^{0.25} \ldots 1.06^{0.25}]$
$\rho_{\overline{\pi}}$	Persistence level of shocks to trend inflation	$[0.99 \ldots 0.995 \ldots 0.9999]$
$100\sigma_{\overline{\pi}}$	Standard deviation of shocks to trend inflation	$[0.1, 0.075, 0.05, 0.025, 0]$

8 THE MODEL

8.1 A List of Nonlinear Equilibrium Conditions in Stationary Variables

$$\wp_t^* = \frac{\theta_p}{\theta_p - 1}\frac{f_{1,t}}{f_{2,t}} \tag{NL1}$$

$$f_{1,t} = \widetilde{w}_t + \beta\eta_p(\overline{\pi}_t^{-\chi_p\theta_p})^{1-\mu_p}(\pi_t^{-\chi_p\theta_p})^{\mu_p}E_t[\pi_{t+1}^{\theta_p}f_{1,t+1}] \tag{NL2}$$

$$f_{2,t} = 1 + \beta\eta_p(\overline{\pi}_t^{-\chi_p(1-\theta_p)})^{1-\mu_p}(\pi_t^{\chi_p(1-\theta_p)})^{\mu_p}E_t[\pi_{t+1}^{\theta_p-1}f_{2,t+1}] \tag{NL3}$$

$$1 = [(1-\eta_p)\wp_{i,t}^{*\,1-\theta_p} + \eta_p\pi_t^{\theta_p-1}(\overline{\pi}_t^{\chi_p(1-\mu_p)}\pi_{t-1}^{\chi_p\mu_p})^{1-\theta_p}]^{\frac{1}{1-\theta_p}} \tag{NL4}$$

$$s_{p,t} = (1-\eta_p)(\wp_{i,t}^*)^{-\theta_p} + \eta_p(\overline{\pi}_t^{-\chi_p\theta_p})^{1-\mu_p}(\pi_{t-1}^{-\chi_p\theta_p})^{\mu_p}\pi_t^{\theta_p}s_{p,t-1} \tag{NL5}$$

$$\tilde{\lambda}_t = \frac{1}{c_t - \gamma c_{t-1}} - \beta\gamma E_t\left(\frac{1}{c_{t+1}-\gamma c_t}\right) \tag{NL6}$$

$$\tilde{\lambda}_t = \beta R_t E_t\left(\tilde{\lambda}_{t+1}\frac{1}{\pi_{t+1}}\right) \tag{NL7}$$

$$(\widetilde{w}_t^*)^{1+\theta_w v} = \frac{\theta_w}{\theta_w - 1}\frac{f_{3,t}}{f_{4,t}} \tag{NL8}$$

$$f_{3,t} = \omega(\widetilde{w}_t)^{\theta_w(1+v)}H_t^{1+v} + \beta\eta_w[\overline{\pi}_t^{-\chi_w\theta_w(1-\mu_w)(1+v)}][\pi_t^{-\chi_w\theta_w\mu_w(1+v)}][\pi_{t+1}^{\theta_w(1+v)}]f_{3,t+1} \tag{NL9}$$

$$f_{4,t} = \lambda_t(\widetilde{w}_t)^{\theta_w}H_t + \beta\eta_w[\overline{\pi}_t^{\chi_w(1-\theta_w)(1-\mu_w)}][\pi_t^{\chi_w(1-\theta_w)\mu_w}][\pi_{t+1}^{\theta_w-1}]f_{4,t+1} \tag{NL10}$$

$$w_t = \{(1-\eta_w)(\widetilde{w}_t^*)^{1-\theta_w} + \eta_w(\frac{\widetilde{w}_{t-1}}{\pi_t})^{1-\theta_w}[\overline{\pi}_{t-1}^{\chi_w(1-\mu_w)}\pi_{t-1}^{\chi_w\mu_w}]^{(1-\theta_w)}\}^{\frac{1}{1-\theta_w}} \tag{NL11}$$

$$s_{w,t} = (1-\eta_w)(\frac{w_t^*}{w_t})^{-\theta_w(1+v)} + \eta_w(\frac{w_{t-1}}{w_t})^{-\theta_w(1+v)}(\overline{\pi}_t^{-\chi_w\theta_w(1+v)})^{1-\mu_w}(\pi_{t-1}^{-\chi_w\theta_w(1+v)})^{\mu_w}\pi_t^{\theta_w(1+v)}s_{w,t-1} \tag{NL12}$$

$$H_t Z_t = Y_t s_{p,t} \tag{NL13}$$

$$C_t = \frac{1}{g_t}Y_t \tag{NL14}$$

$$\ln(Z_t) = \rho_z\ln(Z_{t-1}) + \varepsilon_{Z_t} \tag{NL15}$$

$$\frac{R_t}{R} = \left(\frac{R_{t-1}}{R}\right)^{\rho_R}\left[\left(\frac{\pi_t}{\pi_*}\right)^{\phi_\pi}\left(\frac{y_t}{Y}\right)^{\phi_y}\right]^{1-\rho_R}e^{\varepsilon_{R_t}} \quad \text{(NL16)}$$

$$\ln\overline{\pi}_t = (1-\rho_{\overline{\pi}})\ln\overline{\pi}^* + \rho_{\overline{\pi}}\ln\overline{\pi}_{t-1} + \varepsilon_{\overline{\pi}_t} \quad \text{(NL17)}$$

$$\ln(g_{t+1}) = (1-\rho_g)\ln(\overline{g}) + \rho_g\ln(g_t) + \varepsilon_{g_t} \quad \text{(NL18)}$$

8.2 A List of Steady-State Variables

$$R(\overline{\pi}) = \frac{\overline{\pi}}{\underline{\quad}} \quad \text{(ss1)}$$

$$\wp_t^*(\overline{\pi}) = \left[\frac{1-\eta_p\overline{\pi}^{(1-\chi_p)(\theta_p-1)}}{1-\eta_p}\right]^{\frac{1}{1-\theta_p}} \quad \text{(ss2)}$$

$$s_p(\overline{\pi}) = \frac{1-\eta_p}{1-\eta_p\overline{\pi}^{(1-\chi_p)\theta_p}}\wp_t^*(\overline{\pi})^{-\theta_p} \quad \text{(ss3)}$$

$$w(\overline{\pi}) = \frac{\theta_p-1}{\theta_p}\frac{1-\eta_p\beta\overline{\pi}^{(1-\chi_p)(\theta_p)}}{1-\eta_p\beta(\overline{\pi})^{(1-\chi_p)(\theta_p-1)}} \quad \text{(ss5)}$$

$$f1(\overline{\pi}) = \frac{w(\overline{\pi})}{1-\eta_p\beta\ (\overline{\pi})^{(1-\chi_p)(\theta_p)}} \quad \text{(ss6)}$$

$$f2(\overline{\pi}) = \frac{1}{1-\eta_p\beta(\overline{\pi})^{(1-\chi_p)(\theta_p-1)}} \quad \text{(ss7)}$$

$$w^*(\overline{\pi}) = \left\{\frac{1-\eta_w\overline{\pi}^{\chi_w(1-\theta_w)}}{1-\eta_w}\right\}^{\frac{1}{1-\theta_w}} * w(\overline{\pi}) \quad \text{(ss8)}$$

$$c(\overline{\pi}) = \left\{\left(\frac{\theta_w-1}{\theta_w}\right)\left(\frac{1}{\omega}\right)\left(\frac{(w(\overline{\pi})^*)^{1+\theta_w v}w(\overline{\pi})^{-\theta_w v}}{(s(\overline{\pi})\overline{g})^v}\right)\left(\frac{1-\beta\gamma}{1-\gamma}\right)\left(\frac{1-\beta\eta_w\overline{\pi}^{\theta_w(1+v)(1-\chi_w)}}{1-\beta\eta_w\overline{\pi}^{(1-\chi_w)(\theta_w-1)}}\right)\right\}^{\frac{1}{1+v}} \quad \text{(ss9)}$$

$$y(\overline{\pi}) = \overline{g}c(\overline{\pi}) \quad \text{(ss10)}$$

$$H(\overline{\pi}) = s(\overline{\pi})y(\overline{\pi}) \quad \text{(ss11)}$$

$$\lambda(\overline{\pi}) = \frac{z-\beta\gamma}{c(\overline{\pi})(1-\gamma)} \quad \text{(ss12)}$$

$$f3(\overline{\pi}) = \frac{\omega(w(\overline{\pi}))^{\theta_w(1+v)}H(\overline{\pi})^{1+v}}{1-\beta\,\eta_w\overline{\pi}^{\theta_w(1+v)(1-\chi_w)}} \quad \text{(ss13)}$$

$$f4(\overline{\pi}) = \frac{\lambda(\overline{\pi})(w(\overline{\pi}))^{\theta_w}H(\overline{\pi})}{1-\beta\,\eta_w\overline{\pi}^{(1-\chi_w)(\theta_w-1)}} \quad \text{(ss14)}$$

$$s_w(\overline{\pi}) = \frac{1-\eta_w}{1-\eta_w\overline{\pi}^{(1-\chi_w)\theta_w(1+v)}}\left(\frac{w^*(\overline{\pi})}{w(\overline{\pi})}\right)^{-\theta_w(1+v)} \quad \text{(ss15)}$$

9 THE ADDITIONAL ANALYSES

To conduct a robust check of two conclusions, we consider another case that there are asymmetric parameter values for staggered prices and wages (the asymmetric case). We select Justiniano2008 for a comparison purpose since our model and theirs share many similar features. Details about parameter values are reported in 7.

Table 7: Calibration: An Asymmetric Case

Parameter	Description	Calibrated Value
β	Discount factor	0.9974
γ	Consumption habit	0.81
ω	Labor supply disutility	1.00
υ	Inverse Frisch elasticity of labor supply	1.59
$1 - \overline{g}^{-1}$	Steady state share of Government expenditure	0.26
ρ_Z	AR(1) coefficient for technology shock	0.28
ρ_g	AR(1) coefficient for government spending shock	0.98
$100\sigma_Z$	Standard deviation of technology shock	1.10
	Standard deviation of government spending shock	0.55
Monetary Policy		
ϕ_π	Taylor coefficient on the inflation gap	1.92
ϕ_y	Taylor coefficient on the output gap	0.1
ρ_R	AR(1) coefficient for monetary shock	0.81
$100\sigma_R$	Standard deviation of monetary shock	0.25
Calvo Price Setting		
θ_p	Price elasticity	10.0
η_p	Probability of not being able to optimize	0.9
χ_p	Degree of price indexation	0.84
μ_p	Weight on lagged inflation	1
Calvo Wage Setting		
θ_w	Wage elasticity	10.0
η_w	Probability of not being able to optimize	0.61
χ_w	Degree of wage indexation	0.09
μ_w	Weight on lagged inflation	1
Shifting Trend Inflation		
$\overline{\pi}^*$	Steady-state level of trend inflation	$1.02^{0.25}$
$\rho_{\overline{\pi}}$	Persistence of trend inflation	0.995
$100\sigma_{\overline{\pi}}$	Standard deviation of shocks to trend inflation	0.08

The results for welfare cost computations are presented in Table 8. The results confirm two conclusions this paper. First, the consequences of constant positive trend inflation and shifting trend inflation are severe. Second, staggered wages more importantly determine costs of both constant and shifting trend inflation.

Table 8: Welfare Cost Results: An Asymmetric Case

Welfare Costs(%)(%)	Constant Trend Inflation	Shifting Trend Inflation
General Case	4.91	0.56
Staggered Prices	0.22	0.05
Staggered Wages	4.13	0.49

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GAINING COMPETITIVE ADVANTAGE FROM CSR POLICY CHANGE – CASE OF VIETNAM

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ABSTRACT: *This article offers two interrelated strategies to be used facing corporate social responsibility challenges. As integrated strategies, they both recognize non-market and social forces while dealing with traditional business issues and taking into account the reality of the market. Avant-garde advocating for progressive social responsibility policy enables firms, the game-changers to actively or even proactively shape their own strategy by raising barriers to competitors striving to develop identical status. Systematically conforming to current and changing standards of social responsibility set forth by policy makers and supported by policy activists allows firms, the game-followers to adapt to the situation at their own pace. This article presents four Vietnamese case studies that highlight how some firms have successfully implemented these strategies while others have not.*

Keywords: *Competitive advantage; business strategy; policy change; government; CSR.*

1. INTRODUCTION

Corporate social responsibility (CSR) is, more or less, an integrated element in Western firms' structure and policy. On the contrary, CSR is quite a new but fast growing in importance issue for developing countries, such as Vietnam, and firms therein. Hence, CSR is a very popular management concept worldwide and it is now being imported into Vietnam. Vietnamese business is beginning to respect CSR policy and regulations, behavioral standards and norms due to growing pressure from multinational corporations originated from developed countries operating in Vietnamese market. However, in the context of globalization process, in developing countries, policy and regulations in this area are subjects of constant changes and adaptations, spreading from previous financial model to today' societal model of CSR (Nguyen Hoang Tien, 2015, pp. 36-44). Due to that, many firms may profit from adaptations to CSR policy and regulations change, building their own prior sustainable competitive advantage, while others are not so successful in this area. Hereafter, both of these typical cases are carefully analyzed to draw out interesting and informative conclusions. Until now, in Vietnam, businesses have been identified as practicing social responsibility in an inadequate extent. According to a CSR survey conducted by Social Responsibility Initiatives Vietnam, 90% of respondents misunderstood the concept and essence of CSR. This must be changed sooner or later. In addition, there are not many studies carried out on the issues of CSR in the context of Vietnam. This article's goal is striving to studying and identifying behaviors of firms under changing state policy and regulations on CSR, thereby contributing significantly to further research.

2.   CORPORATE SOCIAL RESPONSIBILITY REVIEW AND RESEARCH METHODOLOGY

Social Responsibility is a field of research which investigates the processes and solutions in order to guarantee a strategic balance between economic growth and social development at both macro level (international, regional, national, local) and micro level (level of enterprises). Corporate Social Responsibility

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(CSR) is a field of research aiming at defining what the essence of a socially responsible business is and what business has to do to become socially responsible. It relates with a whole range of practical issues, such as: corporate ethical program, corporate governance, social policy, fair trading practice, socially responsible investment and production, etc. (Nguyen Hoang Tien 2015, p.7).

In the literature of business and management there are many definitions of CSR. It can be argued that the sphere of influence of CSR is not confined within the enterprise itself. It has a mutual influence on many different parts of society, especially the role of government in the economy in terms of planning policy and setting regulations (Davis, 1973; Carroll, 1999; Matten and Moon, 2005). Both large corporations and small organizations have obligations also to the society which are above that of creating value for shareholders. Corporation should be managed in the benefit of all those who are interested in those organizations (managers, owners, suppliers, employees, local communities, environment) (Man and Macris, 2015). Consequently, the concept of CSR is constantly changing depending on the spatial and temporal sphere of scientific and practical debate and so do the policy and regulations set by government and local authorities. Today, the definition from the World Business Council for Sustainable Development on CSR is widely used, which is considered complete and clear: "Corporate Social Responsibility is the constant commitment of the business to business ethics and to contribute to economic growth, while improving the quality of life of workers and their families, as well as of the community and society" (WBC, 1998). Generally, CSR is a continuous commitment of the enterprise to contribute to the economic development while enhancing the quality of life of the workforce as well as of the community, the society and the environment. CSR is a growing organizational phenomenon with many broad implications for practitioners, scholars and society at large (Kot, 2014).

In contrary to developed countries, in developing countries, whether managers with different attitudes and approaches are opted to operate in a responsive or unresponsive manner toward CSR issues, they are exposed to uncertainty caused by policy and regulatory change (Marcus, 1981; Milliken, 1987; Wernefelt and Karnani, 1987). Developing countries' specificities change the circumstances in which companies face business and society concerns (Muthuri & Gilbert, 2011). The CSR topics there do not follow any specific theme or country pattern. The enactment of new policy and regulations always creates a large group of winners and losers in the marketplace. To be the winners, managers should know how to improve the odds, treating pending policy and regulatory change as an opportunity rather than as a challenge. Policy and regulatory change is a function of the bargaining that takes place among all stakeholders which include not only activist organizations, policy makers and strategic planners, but also concerned the firms themselves. Given the nature of policy making process, each stakeholder is likely to get some elements of their preferred outcome, but not all of them. The two following strategies proposed recognize that social forces alter the competitive map among firms (Baron 1995). One strategy that ***advocates for progressive policy and regulations*** on CSR is suitable for game-changers, allows managers to shape the future policy around their firms' existing CSR strengths. Second strategy that ***conforms to current and changing standards*** of CSR enables firms, game-followers, to satisfy activists who tend to place pressure on policymakers to implement higher CSR standards.

The CSR literature review reveals a lack of interest in understanding conceptual foundations, focusing, instead, on a description of CSR practices in developing countries (Ite, 2004; Chapple & Moon, 2005; Eweje, 2006; Arya & Bassi, 2009; Wiig & Kolstad, 2010). This tendency to understand what companies are doing is related to the type of methodology that most research papers used. Case studies and interviews are frequently used to find the answers to "why" and "how" questions as well as to offset the lack of previous findings in the literature (Rubin & Rubin, 2005; Yin, 2009). The vast preference for qualitative research

methods in developing countries may indicate the difficulty of conducting empirical research on a wide scale (Husted & Allen, 2006; Jamali & Mirshak, 2007). Without exception, case study is also a research methodology designated for the purpose this article that is to study and identify behaviors of firms under changing state policy and regulations on CSR.

3. CORPORATE SOCIAL RESPONSIBILITY'S POLICY AND REGULATORY CHANGE

How managers perceive their position in relation to policy and regulatory change in the field of CSR? Hereafter, in the figure 1, a four-step cognitive sequence is proposed to deal with this challenge (CSR policy and regulatory change) in order to improve management skills facing the rise in significance of this red-hot issue.
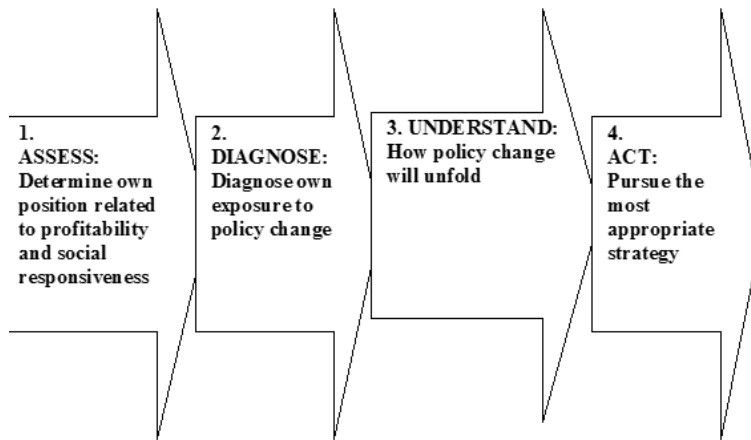

Figure 1. Steps to deal with policy and regulatory changes (Fremeth and Richter, 2011)

To fully understand the CSR issue and its impact on firms' business activity and its vulnerability, managers should follow the above mentioned sequential steps described below:

a) Assess own current position – Firms' business activities relating to public and private interest may fall into one of four zones proposed in the following figure 2. The vertical axis represents the profitability of a particular business activity, the higher an activity is placed the more profitable it is. The horizontal axis represents the social responsiveness of a given business activity, the further to the right, the more a firm is ready to engage their resources to comply and follow CSR standards.
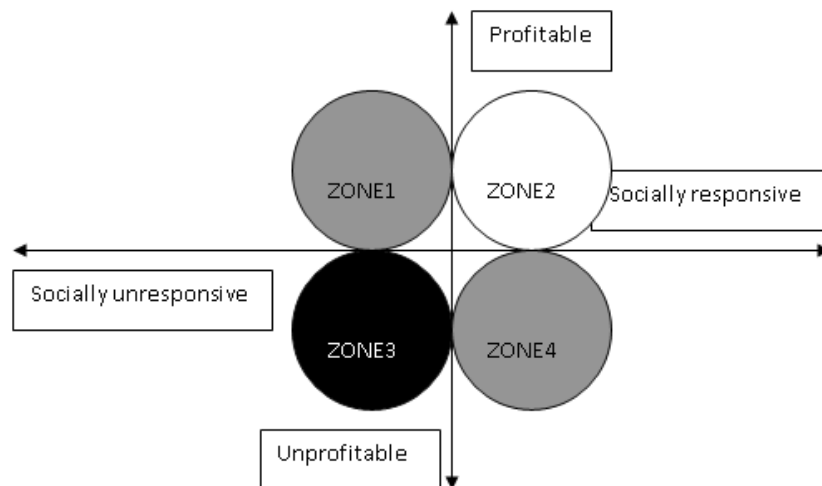

Figure 2. Map of public and private interest (Carroll, 1979; Freeman, 1984; Wood, 1991; Griffin and Mahon, 1997; Hillman and Keim, 2001)

Notes:

White zone (2) – to be carried out;

Black zone (3) – to be avoided;

Grey zones (1 and 4) – zones of dilemmas.

b) Diagnose CSR policy and regulatory change – uncertainty of policy change should include expected time left until it happens (now, in a short time, in a long time), direction of change (progressive, status quo, regressive), scale of change (small, medium, large). Depending on the level of uncertainty, managers should decide when to respond, how to respond, and which resources to engage in to carry out the response. Some firms are ready and welcome instant policy and regulatory change and large scale of change, while others rather prefer it to be postponed and/or to be done incrementally. Some firms wish policy change, once taken place, to be fostered, while other hopefully expects policy toward this issue to be slackened.

c) Understand the impact of CSR policy and regulatory change on firms – on one hand, some activities are socially unresponsive but profitable in zone 1, while unprofitable in zone 3, on the other hand, some activities are socially responsive and profitable in zone 2, while unprofitable in zone 4. Naturally, firms should strive to carry out their activities in zone 2 and avoid activities in zone 3. The dilemmas arise in zone 1 and zone 4. Zone 1 provides an attractive but socially risky position, as activities that are currently profitable but socially unresponsive are target for policy and regulatory change. Social activists will closely work to burden firms with costs to cut down their profit. The challenge for firms in this zone is to improve their social responsiveness without changing in profit. In zone 4, activities do not face social pressures, but their long-run viability is questioned due to the lack of profitability. Managers are facing pressures from shareholders with profit priority. The primary challenge in this zone is to seek profit upon current level of social responsiveness.

d) Act, that is to select and implement an appropriate strategy in front of CSR policy and regulatory change. Adopted strategy should make use of firms' existing strong points to leverage market positions while countering activist forces promoting policy and regulatory change in the CSR issues.

4. PROPOSED STRATEGIES FOR CHANGING POLICY AND REGULATIONS ON ISSUES OF CORPORATE SOCIAL RESPONSIBILITY

Advocating for change, strategy of game-changers

In zone 4 of the illustration 2 (socially responsive and unprofitable), direction of policy change, probability of change and time left to moment of policy and regulations change are critical elements of uncertainty to manage and justify the costs of socially responsive actions. The strategy of advocating for change, that is advocating for more progressive policy and strict regulations to be put in place, may be effective at improving the likelihood to make them happen sooner, rather than maintain status quo. Progressive policy and strict regulations may serve firms' private interests if it is used to raise entrance barriers to the industry, competitor's costs or to push them into second tier in the area related with the SCR issues. This strategy allows managers to maintain more stringent social responsiveness while becoming more profitable. This is due to some of current competitors, especially smaller and weaker ones will be out of business and the general competition in the industry will remain less intense. Despite the potential advantage of this strategy, contingencies, both internal and external to the firm, may limit its effectiveness. Developing expertise in lobbying for higher pressure on policy and regulations in this area is both costly and risky. First, it may raise overall costs for firm and its competitors, if there are too many strong and large enterprises in the sector. Secondly, there is a little chance for the given issue proposed by unknown and less influential company to be on top of the political agenda of legislators.

Conforming to change, strategy of game-followers

In zone 1 of the illustration 2 (socially unresponsive and profitable), time left until policy enactment and the magnitude of its change are critical elements of uncertainty that need to be managed. The profitability of these firms may be threatened with the enactment of new policy and regulations. The systematically embracing and conforming to change may help to postpone the enactment of progressive policy and mitigate their impact and scope of change. This strategy helps managers to maintain profitability while become more socially responsive. This is a play for time for managers to become more socially responsive in a costly efficient way before stringent social responsibility policy and regulations take place. Despite the potential benefits of this strategy, both internal and external contingencies may limit its effectiveness. First, it engages the costs to prove firm's social awareness and credibility. Second, in time of a likely economic slowdown, stringent policy might be delayed as far as needed or even endlessly, despite firm's preemptive social and credibility measures.

5. ILLUSTRATIVE CASES OF VIETNAM

CSR becomes increasingly environmental, social and ethical issues in Vietnam business panorama. Hitherto, three main legislations relative to CSR have been issued: Labor Law (code of conduct) (1994; 2002); Law on Environmental Protection (1996; 2005); Anti-corruption Law (2005) and three main public bodies are involved in CSR: Vietnam Chamber of Commerce and Industry (VCCI); Ministry of Labor, Invalids and Social Affairs (MOLISA); Vietnam General Confederation of Labor (VGCL). The Vietnamese government has created a strategy called Vietnam Agenda 21, which deals with diverse aspects of CSR including, in particular, sustainable development. Strong CSR commitment is developed by Western companies operating in Vietnam while low commitment is still popular among Vietnamese domestic companies. The main barrier of CSR implementation success in Vietnam is there is no feasible Vietnamese CSR model that is, on one hand, suitable to current business context and market condition, on other hand, adequate and conformed to internal norms and standards. The next barriers worth of consideration is the lack of financial and human resources, the lack of awareness and strong, full support from the government.

Success of strategy of game-changers – UNILEVER VIET NAM

During 15 years of operation in Vietnam, Unilever has created more than 7,500 jobs, contributing significantly to the country's economic development. Unilever's philosophy of CSR is to deploy its core competencies to address key concerns of community. It is about long-term positive impacts and sustainable development of society whose Unilever consider itself as a part of. Hitherto in Vietnam, Unilever has been pursuing three approaches towards social responsibility. First, in strategic partnership with government, Unilever has engaged in many programs to boost health and hygiene standards in community, to care about children education and development, gender equality and women empowerment. Secondly, Unilever Vietnam Foundation (UVF) has been established to retain annual grants for health and hygiene projects initiated and executed by local communities to improve general living conditions and to spread education among children and women in far-off provinces, especially in mountainous and rural areas. During 6-year period (2004-2009) grants totaled 10 million USD and benefited nearly half a million people living in Vietnam. Finally, many staff members of Unilever are encouraged to participate in diverse charitable activities across the country. In terms of social performance and communal activities, through UVF, together with market brands, Unilever has been striving to realize the goals of growth and sustainable development with 3 main highlights: improvement of living conditions and healthcare standards of Vietnamese people; elimination of negative im-

pacts of business on environment, using 100% input production materials originated from sustainable sources. Those contents have been deployed through long-term cooperative programs carried out together with ministries and lower-level organs of Vietnamese authority (ministry of health, ministry of education and training, association of Vietnamese women), with business partners engaged in other charitable programs and activities for community. It can be seen that Unilever Vietnam, as a branch of Unilever Global, should have to conform to global ethical and social responsibility standards. In Vietnam, from a very first moment, Unilever had been developing widely many social responsibility activities engaging all affordable resources. Unilever Vietnam often did and still does more for the benefits of society and community than government authorities required to do thanks to long-year experiences of Unilever in dealing with social responsibility issues widespread in more developed countries and more demanding markets.

All those mean that Unilever Vietnam has started its activities from zone 4 (socially responsive and unprofitable), being socially responsive while business is unprofitable and has tried to move successfully to the zone 2 *(socially responsive and profitable)* in figure 3. Unilever Vietnam has treated all SCR activities as long-term investments, and, for sure, it intends to stay much longer or forever in Vietnam's market.

Limitations of strategy of game-changers – *KFC VIET NAM*

The famous fast food chain KFC had opened its first restaurant in Vietnam in 1997. Since that time, KFC Vietnam has been coping with many difficulties, including the Asian economic crisis in 1997, the SARS epidemic in 2003, the bird flu in 2004, and global financial crisis in 2008. However, it still holds on and maintains its determination on the market together with CSR commitment. As of now, KFC Vietnam has set up foothold in 18 provinces nationwide with over 3,000 staff members. Being currently the leader of fast food industry in the local market, KFC Vietnam restaurants serve more than 20 million customers each year. The company is still expanding its business and has reached 200 restaurants in 2015. On the ceremony marking 100 restaurants in Vietnam, KFC Vietnam donated $100,000 to the Saigon Times Foundation under the Saigon Times Group to award scholarships to poor students nationwide. This is the most remarkable charitable activity of KFC in Vietnam, which, in this occasion also expressed commitment to social responsibility and pledged for a long-term attachment and development in Vietnam. Social responsibility of KFC Vietnam also has been expressed by implementation of all hygienic and safety standards both required and not yet required by authorities for the food industry in Vietnam. KFC Vietnam has its advantages in this area as it is a member of a global American fast food chain where all standards of hygiene, food safety and service competence are obligatorily imposed.

Normally, as a global corporation, KFC Vietnam started its operation in zone 4 (socially responsive and unprofitable), but unsuccessfully moved to zone 2 (socially responsive and profitable) in figure 3. It rather remained in zone 4 due to several objective reasons. Asian cuisine and foodstuffs are quite sophisticated, not excluding Vietnam. Many Vietnamese, especially the older ones, are quite conservative and still prefer traditional, healthier foods and are reluctant in trying new Western fast food styles. Moreover, fast foods, including those offered by KFC, are slightly pricy, despite they are serviced in a convenient place with air conditioned. Fast food business in Vietnam, including KFC, still remains unprofitable. KFC Vietnam and all fast food industry competitors in general are facing such tough market condition. They all should be more patient as changing culture, customs and lifestyle usually require a lengthy time. First, KFC still has to keep up and go further with CSR standards which are rising in demand as the country develops. Secondly, KFC and all the industry should target the customers of younger generation, as those are the group who are relatively easy to change their life style as well as eating habit switching to Western style of consumption.

Success of strategy of game-followers – VINAMILK in Vietnam

Vinamilk, established in 1976, is a leading dairy company and also one of the most renowned brands in Vietnam. Having the most diversified list of high quality milk products offered to the market and together with its largest distribution system Vinamilk is now striving to reach out to the world market, i.e. Australia, Cambodia, Iraq, Philippines, Poland and USA. Vinamilk is always aware that, beside right business strategies and plans, respecting business ethics and spreading social responsible activities that bring about sustainable value for society and community play an important part in contribution to the popularity of Vinamilk brands and products. CSR, for Vinamilk, is not an external pressure; it is embedded in business rules, in mission and in all business activities towards a balance of interests of stakeholders and the whole society. Vinamilk relates its development with the development, stability and prosperity of Vietnamese society. Vinamilk is committed to keep continuing as much as possible social and charitable programs and activities deployed so far concerning poverty reduction, especially for the people from mountainous and rural areas or regions impacted by natural disasters, boosting children's education, and other well-known charitable, environmental and humanitarian actions. Examples among of them are "6 million glasses of milk for the poor children" and "growing together 1 million trees for the sake of environment". Vinamilk first introduced complex quality management and control systems, such as HACCP, BRC, ISO 14001 and ISO 17025 throughout the production process, especially the input materials, and products life cycle. As seen above, all CSR activities of Vinamilk are within legal framework imposed by the government for the food industry, especially the dairy sector. As a leading company in the sector Vinamilk is ready to do more than domestic competitors did in this field. But it is not enough, partly due to the lack of resource or willingness, to call social activities of Vinamilk responsive, rather active or proactive, comparing it to many foreign dairy companies operating in the sector, such as Dutch Lady which has smaller market share but stronger growth in Vietnam. However, Vinamilk is a profitable dairy company as it has been present in the Vietnam market for over 40 years.

Vinamilk is an example of firms which successfully move from zone 1 (socially unresponsive and profitable) to zone 2 (socially responsive and profitable) in figure 3. Being socially responsive Vinamilk desires to increase market share in the home market, compete with foreign company, such as the giant Duch Lady mentioned. Vietnam dairy market is growing very fast, with the pace of 7-8% annually. Many Vietnamese rarely drink fresh milk due to the price is still a little bit high comparing to other beverages. But as country' GDP grows, the average income per capita rises as well as the awareness of the healthy living style, fierce market competition will make the price affordable, consumption certainly will spike up.

Limitations of strategy of game-followers – VEDAN in Vietnam

With the business concept of Vedan Vietnam (Taiwanese investor) "taking roots in Vietnam, developing long-term business", since its establishment, the company has constantly increased total investment capital for production, enlarged material areas all over the country, created employment and improved income for ten thousands of farmers, and promoted the development of agricultural industry in many provinces. Besides, since its establishment, annually, the company has been implemented CSR, awards scholarships, sponsors charity and supports people in flood-hit and disaster areas with the amount of ten million USD. As responding to calls from individuals, organizations to support the fund "For the poor", Vedan company has implemented and built shelters and houses for people facing the difficulties in accommodation of their life.

As operating in the fast expanding manufacturing industry being considered as a key driver for Vietnam's economic growth, Vedan as well as other same industry companies has missed out on caring about the state of the environment which is rapidly deteriorating. Vedan's emissions of untreated wastewater

into the Thi Vai River in Ba Ria-Vung Tau province, about 100 km southeast of Ho Chi Minh City, have remained unsettled due to all sorts of reasons. As a result, the livelihood of thousands affected farmers is seriously endangered. Immediate consequences are undeniable; the polluted water is making its way to the Saigon River, a main source of tap water for Ho Chi Minh City. In this case, Vedan has shown a short-lived vision and a lost sense of social responsibility, in contrary to its prior declaration concerning the sustainable and responsible economic development for the whole society: "one should think of giving back to the environment what one take from it".

Vedan, as many its social activities show, has been a responsible company. Due to operations in manufacturing sector which, in more or less extent, badly impact and cause damages to the natural environment, Verdan is not the only company used to pollute the environment both in the air and the water. Operations of all companies in this sector are burdened with high risk. This unfortunate event has certainly caused damage to Verdan's reputation and even forces it to close down. Verdan's activities are in zone 1 (socially unresponsive and profitable) and in case of special mischance, that is when the government intervenes and the society boycotts its products, it has to move to zone 3 (socially unresponsive and unprofitable) which possible means a bankruptcy and/or close-down (if unprofitable in a long term) in figure 3.

> *UNILEVER – successful move from zone 4 (socially res¬ponsive and unprofitable) to zone 2 (socially res¬ponsive and profitable)*
>
> *KFC – unsuccessful move from zone 4 (socially res¬ponsive and unprofitable) to zone 2 (socially res¬ponsive and profitable)*
>
> *VINAMILK – successful move from zone 1 (socially unre¬s¬pon¬sive and profitable) to zone 2 (socially responsive and profitable)*
>
> *VEDAN – move from zone 1 (socially unre¬s¬pon¬sive and profitable) to zone 3 (socially unresponsive and unprofitable)*
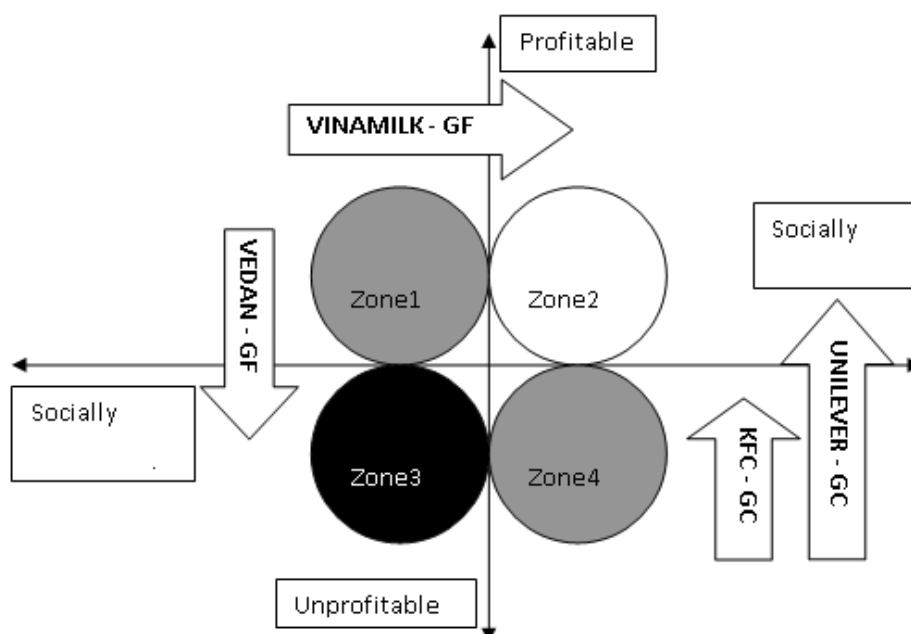

Figure 3. Strategic moves of analyzed Vietnamese enterprises

Notes:

White zone (2) – to be carried out;

Black zone (3) – to be avoided;

Grey zones (1 and 4) – zones of dilemmas.

GC – Game Changer

GF – Game Follower

6. DISCUSSION

This article seeks solutions for business managers to become winners in terms of gaining competitive advantages facing CSR policy and regulations change. In reality, not all companies, both game changers and game followers, are successful in gaining desired advantages. Game changers are usually socially responsive in business despite their profitability. For these game changers, social responsibility and responsiveness come first; profitability is on a second range of importance. This is a business orientation of most of Western corporations operating in the home market with very strict standards and regulations on CSR. In our cases study we have dealt with Unilever, a British-Dutch FMCG corporation and KFC, an American fast food corporation. They are socially responsive because they believe that the CSR standards in developing countries, such as Vietnam, are rising as CSR policy is changing quickly, so it is better to be ahead of the game that is to take a position as game - changers. The profitability of those corporations is different. But sooner (case of Unilever) or later (case of KFC) their business will gain a momentum and start to bring about profit as social responsibility instruments become effective. Game followers are usually socially unresponsive and operating at profit at the very first moment. But in developing countries, in a longer run, it is unsustainable due to social pressure and governmental intervention and policy change to implement higher and higher CSR standards to conform to the global market. This is a business orientation of most of the Asian corporations coming from developing market operating in home country and foreign market with different requirements and standard pertaining to CSR. In our cases study we have dealt with Vedan, a Vietnamese manufacturing alliance with Taiwanese investors and Vinamilk, a Vietnamese domestic dairy company. Game followers have two choices. They have to exert all their effort to become more socially responsive preserving at the same time their profitability as CSR standards and requirements are rising in developing countries, otherwise sooner or later they will be out of business. This is what Vinamilk strived to do over time to reach a higher level of CSR compared to its foreign competitors in a domestic market open for global competition. The second choice is less popular, that is to preserve status quo, to get the unchanged profitability with socially unresponsive manner over long time. This is very dangerous and unsustainable business approach as social pressure and governmental intervention and policy adjustment are in place to force on enterprises CSR standards characteristic for developed countries and global market.

7. CONCLUSION

The limitation of this research is not to conduct empirical study on a wide scale, referring to industries' specifics and country of origin of corporations operating in Vietnamese market and other criteria segmenting the enterprises due to the fact that the vast preference for qualitative research methods, especially the case study in developing countries may indicate the difficulty of gathering precise and detailed input data for quantitative researches and limited fund for researches. Further researches should combine both in-depth case study analyses with statistical analysis of a larger sample of enterprises. The research results of this article may serve as preliminary and precondition for such further researches.

The result of our study points out to the fact, that business managers in developing countries, in contrary to their Western counterparts, are most effective when they leverage their extant competencies and capabilities, rather than stretching to build new ones, i.e. social capabilities. Certainly, integrated approach in responding to policy change and regulatory uncertainty leads to more viable long-run positions. The limitation consists in that if managers start implementing strategic move when they are too far from the ideal or do not have enough resource or power to do so or the business context is not favorable then it may not work. Normally, in developing countries, managers' natural instinct is to fight against regulations, not to follow or precede them as their counterparts in developed world. Truthfully, they don't have or don't have to have long time horizon and vision but myopically focus on both profitability and sustainability as the business context they face is dramatically and unpredictably changing.

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THE IMPACT OF TRAVEL BLOG ATTRIBUTES ON INDONESIAN MILLENNIAL TRAVELERS

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Abstract: *As potential customers for tourism industry, millennial is also known as generation who immerses in social media. The function of social media is not only to express their opinion and thought, but also to collect information through online reviews. The online reviews are used to help them to decide in buying products, services and other related things to their trips. Therefore, the appearance of travel blogs which contain of personal experiences, reviews and suggestions attract millennial and influence their decision making. This study aims to develop and examine a research model that clarifies how various attributes of blog content can drive the behavioral intention of millennial to visit a destination. A total of 282 travel blog readers participated in this study. Structural Equation Modeling (SEM) was applied to analyze the research model. The result indicated that various attributes of blog content influence the intention to visit. Novelty, reliability and understandability of blog content play a positive role on the perceived enjoyment of blog usage. The perceived enjoyment provides millennial an intention to visit a tourist destination.*

Keywords: *Millennial, Travel Blog, Novelty, Reliability, Enjoyment, Intention to Visit*

1. INTRODUCTION

Tourism industry has developed in the recent decades due to the changing needs of travel activities among modern society. Millennial generation which tends to focus on personal experiences also consider travel as a necessity that should be met. Research conducted by Nielsen (2017) revealed that millennial has a high interest in travel activities. Mettler (2015) also informed that millennial like to travel and prefer to spend money on experiences rather than on materialistic items. This trend provides a great opportunity for tourism industry in assessing millennial as a potential market. The World Tourist Trend Report of 2014 conducted by IPK International stated that the contribution of millennial travelers were still small when it was viewed by the total of expenditure. However, Boston Consulting Group (2013) believed that the expenditure of millennial on traveling will increase due to their increasing income in the following years.

As a generation who immerse in technology, millennial tends to use technology as a tool to collect information such as utilizing reviews and experiences through social media. Nusair *et al.* (2013) explained that social media has important influence for millennial generation. Besides interesting on travel package and discount, this generation also consider about review, experience, comment, opinion and suggestion which are provided by people through social media (Nusair *et al.*, 2013). Boston Consulting Group (2014) reported that 95% people use digital information sources to plan their trip with the average usage about 19 websites and applications for one trip. Those websites and applications are also used to share their experience and process during their trip.

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Recently, social media, such as blog, is the main source to gain any information regarding traveling. Agarwal *et al*. (2014) underlined influence bloggers can drive public opinion, thus their review and opinion has important role. Chen *et al*. (2014) said that by using personal blog, many travelers can share their trips and the readers can get information about potential destination and also get to response to the blog post. Moreover, Chen *et al*. (2014) also revealed that blog can be seen as asynchronous and many-to-many channel for conveying travel-related electronic word-of-mouth (e-WOM).

The existence of travel blogger in Indonesia has already occurred since years ago. Tourism Ministry of Indonesia realized that travel bloggers can effectively promote travel destinations. Since the last few years, the Indonesian government has increasingly collaborated with travel bloggers to promote tourism. This collaboration indicates that the role of travel blogger is very important. However, Chen *et al*. (2014) revealed that not all travel blogs have significant influence to support the intention of visiting. The characteristics of travel bloggers (age, sex, credibility, identity, self expression, etc) have significant influence for readers' perception on their blog contents (Armstrong and McAdams, 2009; Lee and Gretzel, 2014). Thus, this study aims to examine the influence of blog attributes on the intention of visiting of millennial travelers in Indonesia.

2. Literature Review

2.1 Travel Blog and Electronic Word of Mouth (e-WOM)

Singh *et al*. (2008) stated that blog is one of the latest and most quickly expanding forms of media for internet communication and publication. Blog is designed to enable common people without much technical or programming skill to create web content (Wang, 2010). Free blog websites with the easy-to-use are numerous, thus it becomes a mainstream media to share, publish and exchange information. As one of attractive social networking sites (SNSs), blog becomes more common to be used as electronic word-of-mouth (e-WOM). E-WOM is defined as any positive or negative statement made by potential, actual, or former customers about a product or company which is made available to a multitude of people and institutions via the internet (Hennig-Thurau *et al*. in Park *et al*., 2017). Blog is also used to review some products. Recently, consumers often read online reviews before they buy a product. Consumers' purchase behaviors can be influenced by online product reviews (Floyd *et al*., 2014).

E-WOM is becoming an important marketing tool in the social media era (Park *et al*., 2017). The use of blog as e-WOM also impacts on tourism industry. A study conducted by Abubakar and Ilkan (2016) regarding medical tourism found that e-WOM influences destination trust and intention to travel. Wang (2012) addressed travel blogs is like internet travel journals that usually provide personal thoughts and reviews on a specific destination, personal travel stories and details of trip. As a business of selling experiences, tourism is intangible and uncertain (Chen *et al*., 2014). Abubakar and Ilkan (2016) highlighted tourism is associated with riskiness and uncertainty due to tourism product and service cannot be accessed until the moment of its consumption. Thus, this condition leads them to rely on online reviews (Jeong and Jang, 2011; Abubakar and Ilkan, 2016). Travel blogs can assists in the conceptualization of tourism experiences (Bosangit *et al*., 2015). Information shared on blog is believed to be able to describe the experience during traveling.

2.2 Millennial and online review

Millennial is generation who born between 1980 and 1999 (Gurau, 2012). This generation is characterized by higher rates of internet adoption (Lissitsa and Kol, 2016). Internet provides people with

easier way in obtaining information. As the first generation growing up with mobile technology, millennial is very savvy in using technology and more immersed in online behavior (Petra, 2016). Mangold and Smith (2012) said millennial as generation who drives social media becoming a source of product information. Stoddard *et al*. (2016) found online reviews help millennial in making purchasing decision.

Factors such as repeat concerns, website professionalism, number reviews, positive and negative reviews, and grammar reviews have influenced the trustworthiness of online reviews (Stoddard *et al*., 2016). Social media provides place to give online review which is basically part of electronic WOM. Survey conducted by eMarketer (2011) found that Social Networking Sites (SNSs) were the most popular online venue to product discussions. Due to the existence of internet, the influence of WOM has grown significantly in the form of online consumer reviews (Schindler and Bickart, 2012). Online review can be found every day through social media such as facebook, twitter, instagram, blog, etc. Mangold and Smith (2012) found that millennial and other consumers are able to influence literally thousands of purchase decisions with a few sentences posted to online review sites. Khan *et al*. (2017) mentioned that bloggers consult others count a number of social subjects such as buying a specific brand, selecting a movie or advice on current fashion trends.

2.3 Novelty, reliability and understandability on perceived enjoyment

Social media encourages faster information dissemination. Due to the necessary of travel information, travel blogs have become a significant resource for finding useful travel guides. To meet these needs, travelers naturally find information which is considered new for them. In this study, novelty refers to the degree to which information within a traveler's blog is perceived to be new (Chen *et al*., 2014). Bosangit, Hibbert and McCabe (2015) revealed that risk, challenge and novelty are the elements of experience as a memorable and common focus for storytelling within the blogs. The research also mentioned that travel blog provides novelty due to the experience which is shared by blogger. Although novelty and strangeness are essential elements in the tourist experience, but not every person is ready to immerse himself in unfamiliar environment (Cohen, 1972).

Tse and Crotts (2005) explained that the degree of novelty in the experiences encountered by international tourists varies greatly. Lee *et al*. (2014) explained that visual pictures and textual descriptions are frequently used to recommend theme parks' various facilities or novel events. The study also found that the perception of blogger is susceptible to influence of emotional contagion of the reader. However, travel blogs contain a common thing may not attract travelers. Xu and Chen (2006) mentioned that readers may not create cognitive change once they find the contents of travel blogs are familiar. It could lead them to stop reading that blog (Chen *et al*., 2014). Travel blogs should provide something new so that readers are enjoy while reading blogs. Ozturk *et al*. (2016) revealed that enjoyable experience is needed in online environment. Grant *et al*. (2007) explained that people may start to enjoy in virtual environment if they find a new thing and begin to combine this experience into their own. Therefore, the following hypothesis is offered:

H1: Novelty has a positive influence on perceived enjoyment of blog usage

Information offered through a blog is often considered reliable because it provides personal experiences. Prior research conducted by Wang (2012) demonstrated useful information provided by travel blogs could create readers' cognitive destination image. It encourages readers to visit the same destination. Trusov *et al*. (2009) revealed that e-WOM has 30 times more powerful than traditional channels due to potential visitors perceive e-WOM to be more update, enjoyable and more reliable than information provided by travel firms.

Basically, people who rely on blogs have already familiar with the bloggers. Borah (2015) mentioned that individuals who consider information provided by blogs are more credible because they are familiar with the style of blogging.

Furthermore, Johnson and Kaye (2004) also mentioned that blog readers find blogs more credible than mainstream media. A blog is different from a traditional website because of the changing commentary from the author, from a forum because control of conversation is held by the author, from review sites because of the expected personal voice (Cosenza *et al*., 2015). The credibility of blog could influence on the acceptance of readers to bloggers' recommendations. Although most blogs is published anonymously, Chesney and Su (2010) found that when the bloggers' identity is revealed, it does not give any effect on its credibility. This study also addressed that the evaluation of credibility is based on the readers' experiences and their personal preferences. Thus, the next hypothesis is proposed:

H2: Reliability has a positive influence on perceived enjoyment of blog usage

As a media of storytelling, blog provides an overview and understanding of certain issue for the readers. In tourism area, McGregor and Holmes (1999) underlined that storytelling is a critical point in understanding individuals' travel experiences because it captures memories and impressions. However, storytelling is not only sharing experiences through writing, but also pictures and graphics. Thurm (2014) found that pictures are not enough understandable, additional explanation with some facts and details is needed to make it clear. Thus, the combination of writing skill and graphic is needed to make travel blog understandable. Understandability of content is influenced by background knowledge (Xu and Chen, 2006). Thus, Xu and Chen (2006) refers understandability as to the extent to which readers perceives that provided information is easy to read and understand. The usage of multimedia material like photos and films can easier help readers to understand a travel experience (Chen *et al*., 2014)

Travel blogs can help readers to understand local or historical culture of certain place (Wang, 2012). The main points of blog are new knowledge and understanding of places, people and events (Bosangit *et al*., 2015). Chen *et al*. (2014) mentioned that a destination can only be imagined if bloggers' experiences are understandable. Having cognitive empathy also drives the ability of readers to understand the feelings of bloggers (Akgun *et al*., 2015). However, the uncertainty and ambiguity may happen if information provided is difficult to understand (Chen *et al*., 2014). The readers may also lose interest in reading a blog if it is hard to understand. Hence, Xu and Chen (2006) underlined that readers may reject the bloggers' opinion if the blog is hard to understand. The more understandable a blog is, the more likely the enjoyable image formation process will continue (Chen *et al*., 2014). Thus, the next hypothesis is proposed:

H3: Understandability has a positive influence on perceived enjoyment of blog usage

2.4 Perceived usage enjoyment on intention to visit

Travel blogs that share enjoyable personal experiences encourage readers to experience the same feeling. It motivates readers to visit the same destination. While examined the travel intention of theme park, Lee *et al*. (2014) explored impartial travel blogs are trusted because of its practical information and the usefulness of these blogs can improve readers' intention to visit a theme park. The research conducted by Huang *et al*. (2010) found travel blogs play important role in the processing of advertising messages, thus it demonstrated the positive impact of ad effect on purchase intention of travel products. Akgun, *et al*. (2015) conducted a research regarding the influence of storytelling in travel writings. The study found that perceived esthetics, narrative structure and self-reference will induce reader empathy that could provide a positive emotional response and behavioral intentions toward travel destination.

Blog usefulness, blog appeal and brand appeal of theme parks all cast an influence on the public's behavioral to visit theme parks (Lee *et al*., 2014). Readers can be inspired by travel blog because they feel enjoyable once read it. Wang (2012) revealed that travel blogs can drive readers to generate emotional or intellectual identification with blogs writers are more likely to help in building an affective destination image, which in turn encourages a high intention to visit an author-described location. Thus, the following hypothesis is proposed:

H4: Perceived enjoyment of blog usage has a positive influence on intention to visit

3.   Research goal, scope and method

The aim of this study is to examine the effect of blog attributes on the intention to visit of millennial travelers. According to the purpose, a self administered survey towards questionnaire was applied to gather data in this research. All variables used in this research are adopted from previous study. The characteristics of research subject are millennial with minimum age of 17 years old and have ever read travel blog at least once within the last 6 months. Table 1 provides construct and item with a 5-point scale measurement.

Table 1 Constructs and questionnaire item

Construct	Item
Novelty	- There was a substantial amount of new information in this blog - This blog has a substantial amount of unique information that I have not come cross before - Through this blog, I discovered a new destination - Through this blog, I learned about the destination's culture and way of life - Through this blog, I satisfied my curiosity regarding this destination
Reliability	- I think the content of this blog is accurate - I think the content of this blog is consistent with facts - I think the content of this blog is reliable
Understandability	- The information in this blog was easy for me to understand - I was able to follow this blog's content with little effort - Readers like me should find this blog easy to read
Perceived Usage Enjoyment	- Using this blog provides me with enjoyment - Using this blog makes me feel relaxed and pleasant - Using this blog makes me feel happy - Using this blog is fun
Behavioral Intention to Visit	- If I get the chance to travel, I intend to visit the destination mentioned in this blog - When I go on a trip, the probability that I visit the destination mentioned in this blog is high

Source: Chen *et al*. (2014)

Novelty is signed by word such as first time, new, surreal, weird, strange and interesting (Tse and Crotts, 2005). In the behavioral science literature, Jang and Feng (2007) mentioned that novelty seeking is also defined as a curiosity drive, sensation seeking and an exploratory drive something outside of routine. In this research, novelty is information in the blog about the destination that is new to the readers (Chen *et al*., 2014). Borah (2015) underlined that individuals consider a blog as a credible media because of the familiarity. This study defines reliability as the degree to which the blog's content about destination is perceived to be true,

accurate or believable (Chen *et al*., 2014). The readers will not consider travel blog as an important tool to gather information if they cannot understand the content of travel blog. Thus, understandability is defined as the degree to which the readers perceive the blog's content about the destination as easy to read and understand (Chen *et al*., 2014). The way of bloggers delivers the message through their writing or photographic skills can create the enjoyment for the readers. Bilgihan and Bujisic (2014) pointed that enjoyment of online experience can be provided through the visual appealing design. In this research, blog usage enjoyment is defined as the degree of perceived enjoyment while using a blog (Chen *et al*., 2014). Travel blogs also provide inspiration for travelers in determining their tourist destination. Therefore, behavioral intention to visit is defined as the willingness to visit the destination mentioned in the blog (Chen *et al*., 2014).

Data was collected through online questionnaire. There are 282 respondents who participate in this research. Structural Equation Modeling (SEM) was used in this research by using LISREL as the analysis tool. Hair *et al*. (2014) mentioned that SEM allows researchers to examine a series of dependence relationships simultaneously. In this study, the convergent validity was based on the value of Confirmatory Factor Analysis (CFA) and Average Variance Extracted (AVE). According to Hair *et al*. (2014), the main purpose of CFA is to assess the construct validity of a proposed measurement theory. Therefore, to know how well the considered variables represent the constructs, CFA was used in this research. Construct Reliability (CR) was used to measure the reliability of research.

4. RESULT

Table 2 Measurement model result

Construct	Indicators	Std. Loading	CR	AVE
Novelty	NOV1	0.75	0.84	0.51
	NOV2	0.75		
	NOV3	0.74		
	NOV4	0.69		
	NOV5	0.65		
Reliability	REL1	0.83	0.88	0.70
	REL2	0.84		
	REL3	0.84		
Understandability	UND1	0.82	0.89	0.73
	UND2	0.89		
	UND3	0.86		
Perceived Usage Enjoyment	USE1	0.78	0.91	0.72
	USE2	0.79		
	USE3	0.92		
	USE4	0.90		
Behavioral Intention to Visit	BEH1	0.88	0.85	0.73
	BEH2	0.91		

Hair *et al*. (2014) mentioned that the standardized loading estimates should be 0.5 and ideally 0.7 or higher. Moreover, to suggest adequate convergent validity, the value of AVE should be 0.5 or greater (Hair *et al*., 2014). The result as mentioned in Table 2 shows that the standardized loading estimates of all constructs spread from 0.65 to 0.92 and the value of AVE ranged from 0.53 to 0.73. Thus, the result indicates that the convergent validity has no problem.

The Goodness-of-Fit indicates how well the specified model reproducing the observed covariance matrix among the indicator items (Hair *et al.*, 2014). The result shows that the research model is qualified for better fit with chi-square/df of 2.58, RMSEA of 0.07, NFI of 0.97, TLI of 0.97, CFI of 0.98, GFI of 0.89, RFI of 0.96 and IFI of 0.98. This research also found that the variances are 57% for perceived usage of enjoyment and 39% for intention to visit.

5 DISCUSSION

The development of technology, especially the existence of social media has contributed to the easiness of sharing and searching information. Blog are already used to find any information, including tourist destination. Thus, travel blogs come to enliven the development of tourism industry. In addition, as a potential consumer for tourism industry, millennial shows that social media is crucial source information in designing their various travel needs, including the destination to visit. Moreover, travel blogs can also provide them an experience through reading the blogs. Chen *et al.* (2014) mentioned that blogs help people to exchange their travel experiences. Although they have not directly visit the destination yet, through travel blogs readers can also experience something.

From data collected, 70 (25%) respondents are male and 212 (75%) respondents are female. The research conducted by Nielsen (2017) found that women is more likely to immerse on social media than men. It indicates that female travelers read travel blogs more than male for collecting information or planning their trip. Travel blogs help female readers to find reliable information to make them secure. However, Lee, Hsiao and Lu (2015) suggested that travel blogs should focus on the efficiency of operation if the the majority of their readers are women and providing attractive visual design for men readers. The total of 126 (45%) respondents read blog 1-2 times within a month and only 51 (18%) respondents who read more than 6 times within a month.

Table 3 Path estimates

Hypotheses	Estimates	t-Value	YES/NO
H1: NOV à (+) USE	0.26	2.82	YES
H2: REL à (+) USE	0.37	3.61	YES
H3: UND à (+) USE	0.19	2.02	YES
H4: USE à (+) BEH	0.62	8.49	YES

This study as described in Table 3 has highlighted some findings that contribute to the knowledge of the behavioral intention to visit. The study found that novelty has a positive influence on perceived enjoyment of blog usage. The research conducted by Chen *et al*. (2014) also found the same result. The blog content that presents novelty provides the enjoyment of millennial to read it. Thus, it influences their intention to visit. Xu and Chen (2006) who examined the relevance of document found that novelty is one of the most factors that significantly influences on relevance information. The interaction between new information and the current cognitive state of reader provides the information need and also create future need (Xu and Chen, 2006). The readers may get bored once they find similar information from one to another travel blogs, thus they need something new to read. The result indicates that providing novelty could encourage the curiosity of readers. Lee *et al*. (2014) also addressed that the behavioral intention to visit a theme park is also influenced by blog appeal. In addition, Ozturk *et al*. (2016) underlined that innovative users tend to seek novelty and try new things in a specific domain.

This result of study also shows that reliability and understanding of blog content has influenced the perceived enjoyment of blog usage. Contradictory with the finding, Chen, *et al.* (2014) have found that reliability does not have any impact on the blog usage enjoyment. However, the study found that understanding of blog has a positive influence on the blog usage enjoyment (Chen *et al.*, 2014). Xu and Chen (2006) underlined that people tend to dismiss the document that is unreliable or impossible to understand. The reliable information could encourage millennial to read the blog. The readers expect to get reliable information so that when they have a chance to visit a destination as mentioned on blogs, they could find similarity and enjoy the destonation as their expectation. Thus, the usefulness of blog content is needed to influence the intention to visit (Lee, Wu and Lee, 2014). Application and website should be designed in consideration of users' utilitarian and hedonic values (Ozturk *et al.*, 2016). Utilitarian and hedonic values can influence the reasons why people keep reading a certain travel blog. They trust blogs due to reliable information and find an enjoyment while reading it. Different from this study result, Borah (2015) found that in the political issues, the blog post is more credible if the author is identified as a journalist. However, for the non-journalist bloggers, the blog post is considered as credible information based on blog traffic. Thus, influential travel bloggers could also influence the credibility of blogs. In addition, the way those bloggers present their experiences through writing style, pictures and other features could affect on the enjoyment of blog usage.

The result shows that the behavioral intention to visit is influenced by the perceived usage of enjoyment. This finding is supported by Chen *et al.* (2014) who highlighted the same result. When reading travel blogs, people actually care on how the stories, pictures and presentations of travel blogs can give them excitement, curiosity and persuasion (Wang, 2012). The combination of those features encourages them to keep reading the travel blog. Wang (2012) pointed that the perceived destination image which is described through the stories, pictures and presentations of travel blogs was found to be a strong predictor of the behavioral intention to travel.

As the result revealed by Lee *et al.* (2014), it was found that while reading blog, the emotion of readers was influenced. Thus, blog usefulness, blog appeal and brand appeal should be created in order to influence the public's behavioral intention to visit theme parks (Lee *et al.*, 2014). In addition, Huang (2010) also found that boring information produces low involvement, thus, interesting contents are needed to build the involvement and drives the intention of readers. Finally, the finding is consistent with the research conducted by Akgun *et al.* (2015) that found while reading, emotions may influences hedonist consumption emotions and thus it might have impact on visit intention to destination.
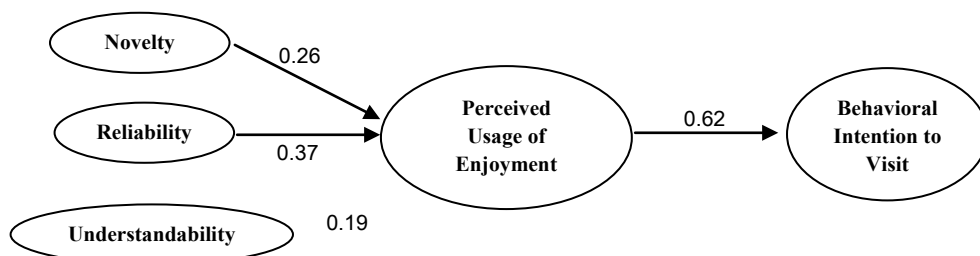

Figure 1 Final model

6. SUGGESTION AND CONCLUSION

It is generally agreed that understanding traveler behavior is critical point in tourism area. Traveler industries need to understand that the way how millennial collect information is way broader. Travel blogs

have an important role for millennial in gathering data that will be used for planning their trips. Thus, each company involved in travel and tourism industry should understand this issue in order to win the market. This study highlights some results. The novelty of content of travel provides significant influence on perceived usage of enjoyment for millennial travelers. The result also shows that reliability suggests perceived usage of enjoyment once the readers read travel blog. Understandability of travel blog has influence on perceived usage of enjoyment. However, comparing to the other variables, the result indicates that reliability has a more influence on enjoyment. This study also found that perceived usage of enjoyment has significant effect on behavioral intention to visit. Thus, based on the result it can be concluded that all the attributes of blog have a significant effect on perceived usage of enjoyment that drives millennial travelers' intention to visit a travel destination.

Therefore, all parties involved in travel and tourism industry could take this opportunity as their marketing tools. From the result, it can be suggested that travel bloggers, especially for those who write blog as their profession, should consider the novelty, reliability and understandability of blog contents so that the readers keep reading the blogs and help them to increase the blog traffic. Cooperating with influential travel bloggers could also encourage the intention of millennial travelers to visit certain destination. Companies like online travel agents, hotels and airlines can also maximize the utilization of their webs by providing blog feature that can be used to share customers' experiences or collect information. The result also indicates that the most respondent in this study is female. It describes that female millennial travelers are getting interested on travel blogs to plan their trips. Thus, travel bloggers who cooperate with certain company can also provide information that attracts female travelers such as shopping centers or discounts.

Although this research can contribute to travel and tourism literatures, there are still some limitations. This research examined general millennial generation which actually can be more specified into millennial student or millennial worker. The data collected through online questionnaire that cause the researcher could not ensure the feeling of respondents in fulfilling the questionnaire. The next study can also be more specified only on the influential travel blogs. The development of social media can also encourage the researchers to examine other social media such as instagram and travel vlogs. Further research can also add other hedonic and utilitarian features to enrich the study.

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AN ANALYSIS OF FACTORS AFFECTING PURCHASING DECISIONS FOR NATURAL FRESH FISH AND PROCESSED FISH IN THE UPPER NORTHEASTERN REGION OF THAILAND

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ABSTRACT: *This survey research aims to analyze the factors affecting purchasing decisions for fresh fish and processed fish from nature in the upper northeastern region of Thailand. A questionnaire was applied as the research tool, using a 7-point Likert scale. 420 samples were collected by employing a random sampling method. Eight variables from their answers are processed by Explanatory Factor Analysis. The eight variables are grouped as follows: 1) the factors affecting the consumption of natural fish (3 factors): physical environment factors, pricing factors, and quality factors; and 2) the factors affecting the consumption of processed fish from nature (3 factors): product factors, pricing factors, and seasonal factors. Entrepreneurs in the fresh and processed fish markets should focus on the application of the marketing mix to stimulate fish consumers and to enhance awareness about product quality and cleanliness in the distribution areas.*

Keywords: *Fresh fish, Natural fish, Processed fish, Purchasing Decisions*

1. INTRODUCTION

At present, "fresh water fish in natural water resources" is regarded as an economic resource for many Thai people due to its distribution around the country. It is an ingredient in many types of food and is a source of protein that people can easily access. Freshwater fish also brings income to people in the community. For this reason, in the upper northeastern region, which is far from the sea, freshwater fish is a major resource and the rate of consumption is higher compared to the other regions in Thailand.

In regard to the statistics report on Thailand's freshwater fisheries by the Department of Fisheries (2017) overall, the quantity of fish is not certain, and during drought, the quantity of fish falls. In years in which Thailand faces abnormally hot weather, a lot of natural fish deaths occur, and this may lead to the deprivation of some fish for consumers in several areas (Fig.1).
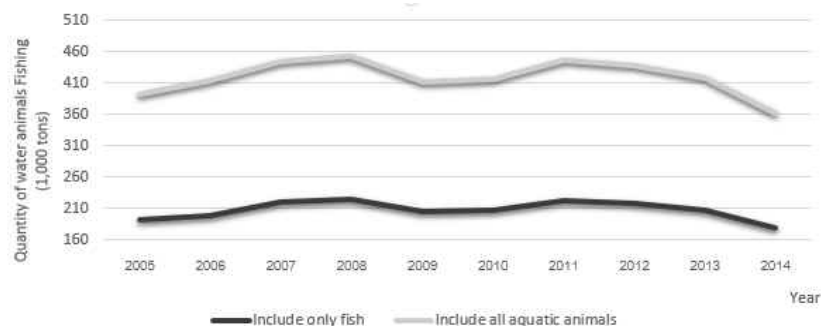
Source: Department of Fisheries (2017)

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Fig. 1. Quantity of Freshwater Fish Fishing in Thailand

Freshwater fisheries might be regarded as the treasure of gross domestic product (GDP) when compared to saltwater fisheries. However, freshwater fisheries are connected to the lifestyle of people in the community by providing careers and income, especially in the northeastern region, which is the origin of Chi River, the Pong River, the Songkram River, and the Huay Luang River. The region has a population of 12 million people; therefore, freshwater fisheries are a major component in national economic development.

The upper northeastern region is the source of natural fish from the Mekong River (Sompolkrang et al, 2015). Nonetheless, regarding the region's characteristics, there are a lot of brooks, reservoirs, and dams which are the natural habitats of several types of fish. Freshwater fish are directly distributed and are also processed into products at major water resources such as Ubolratana Dam, Lam Pao Dam, and the mouth of the Songkram River. In the upper northeastern region, freshwater fish are the main product. Moreover, there are products from processed natural fish available at water resources and tourist spots; therefore, the distribution is in the form of household business. On the other hand, the variety of freshwater fish and processed fish sales in the upper northeastern region of Thailand may affect consumers' purchasing behavior for fish but no study on the factors affecting purchasing decisions for fresh fish and processed fish from nature have been conducted in that area. However, it should be studied to assist in future government planning.

2. LITERATURE REVIEW

There are various water resources in the northeastern region supporting diverse natural fish; however, there has not been any study on the characteristics and patterns of processed fish production. Songsrirote (2010) studied only the demand and supply for seasonal fresh fish in a study of the value chain for fish in Yasothon province during the years 2009-2010 based on 12 fresh fish merchants. In reality, at every water resource, there are many fresh fish and fish product merchants, but there has been no study of the patterns of the supply chain in that area except for studies on fresh fish and fish product pricing and the fish market system. Similarly, coastal fisheries in Trang province depend on the knowledge and experience of the fisherman because a stable fishery system and product distribution over many seasons depends on the quantity and quality of labor, the market system, the season, and other related food production factors (Tarasook et al, 2014).

In addition, Daothong (2010) studied consumers' purchasing intention and behavior for freshwater fish in Chao Phrom Market in Phra Nakhon Si Ayutthaya District, Phra Nakhon Si Ayutthaya Province, focusing on Nile Tilapia. Product factors, price factors, and place factors were found to be the marketing mix factors affecting consumers' purchasing decisions at the highest level while promotion factors and physical evidence factors were found to affect their buying intention at a high level. Lastly, price factors influenced their decisions the least. Nauman et al, (1995) studied the factors influencing purchasing intention for fresh fish by surveying consumers in the northeastern region of the USA to collect marketing data about the purchasing decision for Bass, Trout, and Salmon. According to the study, the perceiving experience and preferences for products affected the consumers' buying decision for bass, trout, and salmon.

In the study of consumer attitudes in fish selection, Conte et al, (2014) demonstrated that product quality was the factor that positively influences the consumers' purchasing decision and it leads to a change in consumer attitudes towards fish products. Ahmed et al, (2011) surveyed households in Kuala Lumpur using a questionnaire with 700 respondents and interviews and found that personal attitudes affecting Malaysian consumers' buying decision for seawater fish comprised perceptions of seawater fish consumption, taste, and the nutrient value of fresh fish.

From the aforementioned findings about purchasing decisions for fish, it is evident that several behaviors and factors influence consumer buying intention, for example, experience and preferences for bass, trout, and salmon (Nauman et al, 1995), which are important factors in the fish market. These factors

are applied in the study of the factors influencing purchasing decision and consumption of fresh fish and processed fish from nature in the upper northeastern region of Thailand.

3. METHODOLOGY

3.1 Research methodology

3.1.1 Population and Sample Group

The population comprises buyers of fresh fish and processed fish in 6 main markets in 6 provinces which are 1. Pho-Chai Market in Nong Khai Province, 2. Thetsaban Fresh Market in Udon Thani Province 3. Thetsaban Fresh Market in Khon Khaen Province 4. Thetsaban Fresh Market in Sakon Nakhon Province 5. Thetsaban Fresh Market in Kalasin Province and 6. Thetsaban Fresh Market in Nakhon Phanom Province.

3.1.2 Sample group

The representatives of customers who buy fresh fish and processed fish from nature in the main 6 markets. The sample group has reliability at 95% and acceptable error at 0.05, using W.G. Cochran's method (1953) without realization of the total population. The setup for sampling is 0.4 which is equal to a sample size of 323. However, to enhance the credibility of the data, with variations in the study area, the sample group includes 420 customers.The representatives of customers who buy fresh fish and processed fish from nature were selected by employing the accidental sampling method. The quota areas were set up as shown in Table 1.

Table 1. *Number of the sample buyers who buy fresh fish and processed fish from nature*

Fresh Market in each Province	Fresh Fish Buyers	Processed Fish Buyers
Pho-Chai Market in Nong Khai	70 Samples	70 Samples
Thetsaban Fresh Market in Udon Thani	70 Samples	70 Samples
Thetsaban Fresh Market in Khon Khaen	70 Samples	70 Samples
Thetsaban Fresh Market in Sakon Nakhon	70 Samples	70 Samples
Thetsaban Fresh Market in Kalasin	70 Samples	70 Samples
Thetsaban Fresh Market in Nakhon Phanom	70 Samples	70 Samples
Total	420 Samples	420 Samples

Source: From calculation

3.2 Tools and Sampling

A Likert Scale questionnaire was used as the data collection tool to elicit opinions about buying decisions for fresh fish and processed fish as shown in Table 2.

Table 2. *Consumer opinions about buying decisions for fresh fish and processed fish*

Level of consumer opinion	Score
Highly influence	7
Influence	6
Small Influence	5
Neutral	4
Rarely influence	3
No influence	2
Definitely no influence	1

3.3 Statistics and Data Analysis

The statistics used in the research are 1) Mean and Percentage 2) one way ANOVA testing that there is no difference in means in each fresh market and 3) Exploratory Factor Analysis or EFA. Exploratory Factor Analysis is employed to group the factors affecting opinions. This requires cluster analysis and latent variable of the factors in the testing have to be constructed to search for the mean. The criteria are as follows:

Mean   1.00 – 2.00   = Definitely no influence
Mean   2.01 – 3.00   = No influence
Mean   3.01 – 4.00   = Rarely influence
Mean   4.01 – 5.00   = Small influence
Mean   5.01 – 6.00   = Influence
Mean   6.01 – 7.00   = Highly influence

The processes of the Exploratory Factor Analysis are as follows:

1. Consider the primary relationships of the 8 variables

2. Factor extraction is to set the number of the latent variables from Principle Component Analysis by considering the number of factors from the Eigen Values which is over 1.00

3. Orthogonal by Varimax Rotation for better cluster analysis

4. Loading selection is the consideration of a variable's loading which includes the highest value so that the latent variables can be grouped. Loading over 0.5 requires at least 150 samples (Stevens, 2002). If any factor is not relevant to the component, it would be excluded as a latent variable and the loading must be recalculated.

5. Give a title to the component in order to communicate the meaning of the factors.

4. RESULTS AND DISCUSSION

For data analysis, the author performed a reliability test with Cronbach's Alpha and found that the opinion level towards the factors influencing the buying decisions for natural fish has reliability at an acceptable level over 0.07 for every question. For the opinion level towards the factors influencing the buying decisions for natural fish, freshness/cleanliness has the highest influence with a mean of 6.769. Next is the cleanliness of the fish tray with a mean of 6.640, natural fish quality with a mean of 6.540, seller's human relations with a mean of 6.392, the price of natural fish with a mean of 5.550, season with a mean of 5.342, rare natural fish with a mean of 4.795, and the least influence is distance with a mean of 4.109

Furthermore, the opinion level towards the factors influencing the buying decisions for processed fish has reliability at an acceptable level of over 0.08 for every question. For the opinion level towards the factors influencing the buying decisions for processed fish products, cleanliness has the highest influence with a mean of 6.735. Next is cleanliness of the production shop with a mean of 6.721, product quality with a mean of 6.526, seller's human relations with a mean of 6.390, price with a mean of 4.990, rare fish with a mean of 4.828, season with a mean of 4.642, and the least influence is distance with a mean of 3.819 as shown in Table 3.

Table 3. *Opinion level towards the factors influencing the buying decisions for natural fish and processed fish products*

Aspect	Mean	SD	Levels of Opinion
Natural fresh fish			
Natural Fish Quality	6.540	0.857	Highly Influence
Rare Natural Fish	4.795	2.018	Small Influence
Freshness/Cleanliness	6.769	0.566	Highly Influence
Price	5.550	1.918	Influence

Distance	4.109	2.203	Small Influence
Human Relations	6.392	0.804	Highly Influence
Cleanliness of tray	6.640	0.698	Highly Influence
Season	5.342	2.009	Influence
Total Mean	**5.767**	**1.384**	**Influence**
Processed fish			
Product quality	6.526	0.794	Highly Influence
Rare Natural Fish	4.828	2.162	Small Influence
Cleanliness	6.735	0.502	Highly Influence
Price	4.990	2.162	Small Influence
Distance	3.819	2.242	Rarely Influence
Human Relations	6.369	1.026	Highly Influence
Shop's cleanliness	6.721	0.536	Highly Influence
Season	4.642	2.318	Small Influence
Total Mean	**5.579**	**1.468**	**Influence**

Source: From calculation

Furthermore, the opinion level towards the factors influencing the buying decisions for processed fish has reliability at an acceptable level of over 0.08 for every question. For the opinion level towards the factors influencing the buying decisions for processed fish products, cleanliness has the highest influence with a mean of 6.735. Next is cleanliness of the production shop with a mean of 6.721, product quality with a mean of 6.526, seller's human relations with a mean of 6.390, price with a mean of 4.990, rare fish with a mean of 4.828, season with a mean of 4.642, and the least influence is distance with a mean of 3.819 (Table 3.)

After the consideration of the loading for each variable towards the factors to demonstrate the priority levels of each factor. The next step, we employ the One-way ANOVA test to confirm the homogeneous data as whole 7 markets. From the F-statistics result, it found that there is no difference in means in each fresh market for natural fish and processed fish products. In addition, the research considered the variables with the highest loadings and factor extraction. Considering the number of factors from Eigen Values with Varimax Orthogonal Rotation, it was found that there are 3 eigenvalues over 1.00 as shown in table 3, which demonstrates the clusters of 3 factors (Table 4). Comparison of all factors with loadings over 0.500 to present the factor categories of variables are shown in Table 5

Table 4. *Results of Initial Eigenvalues*

Natural Fish				Processed Fish			
Component	**Total**	**% of Variance**	**Cumulative %**	**Component**	**Total**	**% of Variance**	**Cumulative %**
1	1.95	24.45	24.45	1	2.03	25.40	24.45
2	1.68	21.05	45.51	2	1.64	20.59	45.51
3	1.13	14.13	59.64	3	1.04	12.99	59.64
4	.83	10.43	70.08	4	.87	10.97	70.08
5	.74	9.25	79.34	5	.70	8.86	79.34
6	.68	8.56	87.91	6	.65	8.16	87.91
7	.53	6.67	94.58	7	.59	7.38	94.58
8	.43	5.41	100.00	8	.44	5.60	100.00

Source: From calculation

Table 5. *Results of Factor Analysis*

Natural Fish				Processed Fish Products			
Factor	**1**	**2**	**3**	**Factor**	**1**	**2**	**3**
C3Freshness/cleanliness	.678	-	-	C1 Product quality	.623	-	
C6 Human relations	.748	-	-	C3 Product's cleanliness	.718	-	-
C7 Tray's cleanliness	.827	-	-	C6 Human relations of seller	.549	-	-
C4 Price	-	.719	-	C7 Shop's cleanliness	.735	-	-
C5 Distance	-	.573	-	C2 Rare natural fish	-	.815	-
C8 Season	-	.680		C4 Price	-	.573	-
C1 Fish quality	-	-	.771	C5 Distance	-	.763	-
C2 Rare natural fish	-	-	.756	C8 Season	-		.857

Source: From calculation

Generally, the using of the EFA allows defining the constructs and their groupings. From Table 5 is shown the adjustment of the   groupings.

Regarding the factors influencing the buying decision for natural fish, it was found that factor 1 is composed of variables C3, C6, and C7; factor 2 is composed of variables C4, C5, and C6; and factor 3 is composed of variables C1 and C2. Considering each loading, every variable value is over 0.500 which demonstrates that all variables can be grouped in any factor and this leads to cluster analysis.

The title of the factor reflects the entire meaning of the variables in the same group and also reflects the consumer attitudes through the levels of their opinion in their buying decision for natural fish. As consequence, the new titles for the factors are as follows:

Factor 1 is composed of 3 variables which are Freshness/Cleanliness (C3), Human Relations (C6), and Tray's Cleanliness (C7). This indicates that the product must be clean and staff must be able to attract customers. Therefore, Factor 1 is called the Physical Evidence Factor.

Factor 2 is composed of 3 variables which are Cleanliness of Natural Fish (C4), Distance (C5), and Season (C5). The variables represent the product cost setting for the producer and the consumer. Therefore, Factor 2 is called the Pricing Factor

Factor 3 is composed of 2 variables which are Natural Fish Quality (C1) and Rare Natural Fish (C2). Therefore, Factor 3 is called the Product Quality Factor.

For the factors influencing the buying decision for processed fish products, it was found that factor 1 is composed of variables C1, C3, C6, and C7; factor 2 is composed of variables C2, C4, and C5; and factor 3 is composed of variable C8. Considering each loading, every variable value is over 0.400 which demonstrates that all variables can be grouped in any factor and entitled as follows.

Factor 1 is composed of 4 variables which are Product Quality (C1), Product Cleanliness (C3), Human Relations (C6), and Shop's cleanliness (C7). The variables indicate why the customers buy a product. Therefore, Factor 1 is called the Product Factor.

Factor 2 is composed of 3 variables which are Rare Natural Fish (C3), Product's Price (C6), and Distance (C7). The variables represent the product cost setting for the producer and the consumer. Therefore, Factor 2 is called the Pricing Factor whereas factor 3 is composed of 1 variable which is Season (C8). Therefore, Factor 3 is called the Season Factor.

From the results are similar to the results of Maciel et al., (2013) who studied the application of EFA to evaluate fish consumption at a college. It is found that in the grouping for fish quality evaluation from the Rotation Matrix result with a Quality Control Stamp (SIF) and Physical Evidence. In the same direction, due to the Product Factor is the main factor influencing the consumers' purchasing decision in the study of natural fish and processed fish products that is similar to Conte et al, (2014).

5. CONCLUSIONS

The opinion levels for the factors influencing the buying decisions for natural fish with EFA represents three factors which are 1) the Physical Evidence Factor, 2) the Pricing Factor; and 3) the Quality Factor, including 8 variables: Natural Fish Quality (C1), Rare Natural Fish (C2), Freshness/Cleanliness (C3), Price (C4), Distance (C5), Human Relations (C6), Tray's Cleanliness (C7), and Season (C8).

In addition, the opinion levels for the factors influencing the buying decisions for processed fish with EFA represents three factors which are 1) the Product Factor, 2) the Pricing Factor; and 3) the Season Factor, including 8 variables: Product Quality (C1), Rare Natural Fish (C2), Product Cleanliness (C3), Price (C4), Distance (C5), Human Relations (C6), Shop's Cleanliness (C7), and Season (C8).

Regarding the topic of this study, entrepreneurs in the natural fish and processed fish markets address that consumers have different views based on the marketing mix (McCarthy, 1960) in four dimensions: Product, Price, Place, and Promotion. Whatever the producers or distributors' views are, the consumers see it differently. When buying natural fish, customers regard product cleanliness, human relations, price, distance, and season, respectively. They are mainly interested in fish quality.

Regarding the factors affecting consumer purchasing decisions for processed fish, the first priority is the product and cleanliness. Pricing is next, and the season is last. As a consequence, processed fish market entrepreneurs should use the marketing mix to stimulate fish consumers who are mainly interested in the product and the cleanliness of the place. These are different from the 4Ps marketing mix as previously mentioned

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VIETNAM IN GLOBAL INVESTMENT COMPETITIVENESS

Le Thi Ngoc Bich*- Vu Thi Le Hoa**- Hoang Hai Ninh***

ABSTRACT: *Foreign direct investment (FDI) can benefit the host countries in many dimensions. However, those benefits cannot be guaranteed without right policies. The study aims to provide to practical evidences from investors' view to assist policy makers in Vietnam in designing proper regulations in order to attract, retain FDI as well as maximize its gains to economy. By employing the data from the Global Investment Competitiveness Survey with interviews of 754 executive of multinational corporations with investment in developing countries including Vietnam, the study gives insights into motivation and the factors impacting investors' decision in investing in and exiting from developing market. From the findings, various implications are suggested for Vietnam government to improve further investment environment of country.*

Keywords: *foreign direct investment, policy, investment environment*

1. INTRODUCTION AND LITERATURE REVIEW

The benefits of foreign direct investment (FDI) to host countries can extend beyond physical capital itself. To developing countries, FDI not only helps solving scarcity of physical capital, but it can potentially transform economies through innovation, enhancing productivity, and creating employment. Due to its advantages, countries all over the world, both developed and developing ones, are in the competition to attract FDI by different measurement.

In recent years, although global economy have to face with severe crisis and economic recession, Vietnam has still assessed as an attractive destination for investors. FDI rose steadily since 2009 and reached a staggering $15.8 billion in 2016, according to the Ministry of Planning and Investment (MPI). Manufacturing has remained the most popular industry for foreign investment. In next period, investors will continue to find traditional export-oriented sectors such as electronics, garments, and footwear to be attractive. In addition to the export-oriented sectors, the domestic market also provides an opportunity for investors. With growing urbanization and rising incomes, industries such as education, real estate, retail, food & beverages, e-commerce, and FMCG will continue to grow in 2018.

Vietnam's success can be largely attributed to country's geographical position near suppliers, the growing consumer market and the state's commitment to creating an attractive business environment for both domestic and international companies. Building on the country's solid foundations, the government has introduced a number of regulatory changes to help increase both foreign direct investment (FDI) and foreign portfolio investment. This pro-business attitude has also stimulated growth in the private sector, driving local business and improving competition. In the coming years, the government will continue to

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invest in supply industries, advanced technologies and environmentally friendly practices in order to attract foreign investment and strengthen the link with domestic enterprises further.

While many international investors have found Vietnam an attractive destination, there are still areas in need of improvement. Problems include corruption and a weak legal infrastructure, inadequate training and education systems combined with restrictive labor policies, conflicting limitations, and questions over future access to reliable and afford energy. Investors have called for immediate reforms and the development of sound economic policies in order for Vietnam to continue to attract high – quality, foreign investment.

Literature on FDI is numerous theoretically and empirically. Borensztein et al. (1998) employed the data on FDI flows from industrial countries to 69 developing countries over the period 1970-1989 and found that FDI is an important vehicle for the transfer of technology, contributing relatively more to growth than domestic investment. Nevertheless, the higher productivity of FDI holds only when the host country has a minimum threshold stock of human capital. Therefore, FDI contributes to economic growth only when a sufficient absorptive capability of the advanced technologies is available in the host economy. Louzi and Abadi (2011) study the FDI-led growth hypothesis in Jordan. Based on time series data from 1990 to 2009, the econometric framework of integration and error correction mechanism is employed to capture two way linkages between interested variables. The empirical results reveal that FDI inflows do not exert an independent influence on economic growth, while domestic investment and trade liberalization have positive impacts on GDP growth. Bahname (2012) studies the impact of FDI on economic growth in Southern Asia for the period 1977 - 2009. The results reveal that FDI, along with other variables such as human capital, economic infrastructure and capital formation have positive and significant effects on economic growth. Consistent with the work of Bahname, Abdullahi et al. (2012) conclude that FDI promotes economic growth among selected countries of Africa and Asia in the period 1990-2009 and thus, they recommend for more openness of the economies, more investment in infrastructure and more political commitment to the fight against corruption. The positive impacts of FDI on economic growth are also supported through many empirical studies (Ghatak and Halicioglu, 2007; Lean and Tan, 2011; Alshehry, 2015; Adhikary, 2015).

Furthermore, there are some studies about the determinants of FDI. Hsieh (2005) used a dynamic panel data model with fixed effect to analyze the locational determinants of FDI inflows in Southeast Asia transition economies including Cambodia, Laos, Myanmar and Vietnam, for the period of 1990 to 2003. Various variables are included in the model including lagged FDI, Asia financial crisis indicator, exchange rate, wages, GDP per capita, openness, government budget, and human capital investment. The most important determinants are the one period lagged FDI inflows, GDP per capita, and the degree of openness. The Asian financial crisis is found to have deterred FDI inflows in these countries. Nguyen Phuong Hoa (2002) estimated a cross – sectional regression model for the locational determinants of accumulated FDI to the year 2000 across provinces in Vietnam. She found that market size represented by provincial GDP, human capital, GDP per capita and the number of industrial zones are important determinants of FDI across provinces in Vietnam. Although her findings are quite consistent with the literature regarding market size, labor quality and infrastructure, by including both GDP and GDP per capita in the model may have caused the GDP per capita to have contradicting effect on the inflow of FDI.

About FDI policies in Vietnam, Nguyen Quynh Tho, Banking Academy of Vietnam, Vietnam (2016) used Global Opportunity Index, Inward FDI Performance Index, and Inward FDI Potential Index in order to evaluate the effectiveness of FDI policies. According to her, instead of focusing on policies towards attracting more FDI, it is necessary for Vietnam to pay more attention on advanced levels of policies towards FDI (i.e. upgrading FDI, enhancing linkages, and reducing FDI side effects).

Although existing studies have provided different points of views on FDI, no study has given insights from the perception of investors yet. Therefore, by using data set on the perception of high level managers of companies who are directly involved in investment decision of companies to developing countries, this study aims to provide a unique practical evidences on FDI in developing countries and Vietnam particularly. When having better understanding from investors' view, government will be able to design proper regulations for attracting and retaining FDI as well as maximize its gains to economy.

The following parts include methodology and data description of the study, statistical analysis and discussion and finally policy implication for Vietnam and conclusion.

2.   METHODOLOGY AND DATA DESCRIPTION

- *Methodology*

Various analytical methods are used throughout the study with the support of SPSS software to summarize and analyze the results of the survey. Descriptive analyses are used to determine the profile of companies in terms of the location of head quarter, sector and size. To analyze motivation of investors, factors influencing the investment decisions of investors and reasons for exiting from the market, descriptive analysis of frequency and analyses of variance (ANOVA) are employed to summarize and compare the perception of investors with affiliates in Vietnam and those in other countries and those in different sectors.

- *Data description*

The study employs the data of Global Investment Competitiveness (GIC) Survey 2017 which was initiated by International Finance Corporation and World Bank from February to June 2017. The GIC survey aims to collect the perception of key decision makers in companies across the world on the impact of the investment climate factors in their investment decision overseas, especially in emerging markets and developing countries. The survey interviewed business executives of multinational companies operating in developing markets and involved in the company's global expansion strategy and decision – making process. The respondents, being a combination of executives at the global headquarters and executives at a foreign affiliate, were interviewed by telephone.

The survey consists of four sections: (1) General information on the company and respondent; (2) Importance of factors in investing in a developing country; (3) Political risks and investment exit; (4) Investment in a specific developing country. The first section collects general information on company such as sector, number of employees and position of the respondent in the company. Section 2 asks respondents to rate the importance of investment climate factors on a scale from 1 to 4 which equivalent to "not at all important" to "critically important". Section 3 identifies the experience of political risks in developing countries and the reasons for shutting down any foreign affiliate in a developing country. In section 4, the interviewees were asked about the operation of a familiar affiliate in a specific developing country in difference perspectives.

The sample includes 754 respondents from companies operating in companies across the world. 30 out of 754 companies have affiliates in Vietnam, which could enable researchers to compare the opinions of investors in Vietnam with those in other countries. The details on respondents in terms of different aspects are presented in the Table 1. Accordingly, most of surveyed companies have the head quarter in developed countries, accounting for 73.2%. The proportion of firms operating in manufacturing sector is 46.8% while those in service sector are 44.6% and the primary sector is only 6.4%. Firms belong to different size groups. The firms with from 251 to 1000 employees and from 1000 to 10000 account for over 25% of the total firms. The remaining belong to the groups of less than 100 employees, from 100 to 250 and over 10000 employees.

Table 1.The profile of respondents

Characteristics	Value	Frequency	Percent	Cumulative percent
Income group of head quarter country	Developing	202	26.8	26.8
	Developed	552	73.2	100.0
Sector	Primary	48	6.4	6.4
	Manufacturing	353	46.8	53.2
	Services	336	44.6	97.7
	Other	17	2.3	100.0
Number of employees	Don't know/Refused	13	1.7	1.7
	Less than 100 employees	131	17.4	19.1
	100 to 250 employees	111	14.7	33.8
	251 to 1000 employees	194	25.7	59.5
	1001 to 10000 employees	203	26.9	86.5
	More than 10000 employees	102	13.5	100.0
Total		754	100.0	

3. STATISTICAL ANALYSIS AND DISCUSSION

3.1. Motivation of companies in investing in developing countries and application for Vietnam

Motivation of companies in investing in developing countries – analysis from survey

To attract and gain benefits from foreign direct investment, it is crucial for host countries to understand the motives of different types of FDI. The survey listed five main motivation and asked the respondents whether they are their company' motivation in investing in a specific developing country. The listed motivations include: access to new markets or new customers; lower production costs or establish a new base for exports; coordinate your company's value chain such as being closer to your suppliers; access to natural resources and raw materials such as oil, gas or agricultural products and acquire another firm that will provide your company new technologies or brands. Table 2 and figure 1 present the result of analysis in terms of frequency for each motivation.

Table 2. Motivations in investing in developing countries

Motivation	Value	Frequency	Percentage
Access new markets or new customers	Yes	656	87.0
	No	98	13.0
Lower production costs or establish a new base for exports	Yes	385	51.1
	No	369	48.9
Coordinate your company' value chain, such as being closer to your suppliers	Yes	296	39.3
	No	458	60.7
Acquire another firm that will provide your company new technology	Yes	110	14.6
	No	644	85.4
Access natural resources and raw materials, such as oil, gas or	Yes	94	12.5
	No	660	87.5

It is noticeable that investors are heterogeneous with various motivation of investment. It means different types of FDI have different motivation when seeking and investing in a specific country. If multinational companies (MNCs) look for access to natural resources such as firms in extractive industries, they will be motivated by availability of natural elements such as access to land and resources

than other factors. The domestic market size are the priority of market – seeking FDI. The efficiency – seeking FDI values the policies of the import – export goods and services and lower production costs. Meanwhile, foreign investors seeking strategic assets are motivated by technology and brands that can enhance their operation.

According to the survey, access to new markets or new customers is the most important motivation of investors, with 87% of surveyed firms valuing this factor. The second most important motivation of investment is to have lower production costs or establish a new base for exports, occurring for over the half of respondent. Meanwhile, 39.3% of investors are motivated in investing by the coordination their company' value chain such as being closer to the suppliers. Few investors identify with the motivation to acquire strategic assets (15 percent) or access natural resources and raw materials (12 percent). Importantly, multiple motivations are chosen by two – third of investors and when asked about which motivation prevails, most investors (71 percent) say they are market-seeking.

Figure 1: Motivation in investing in developing countries
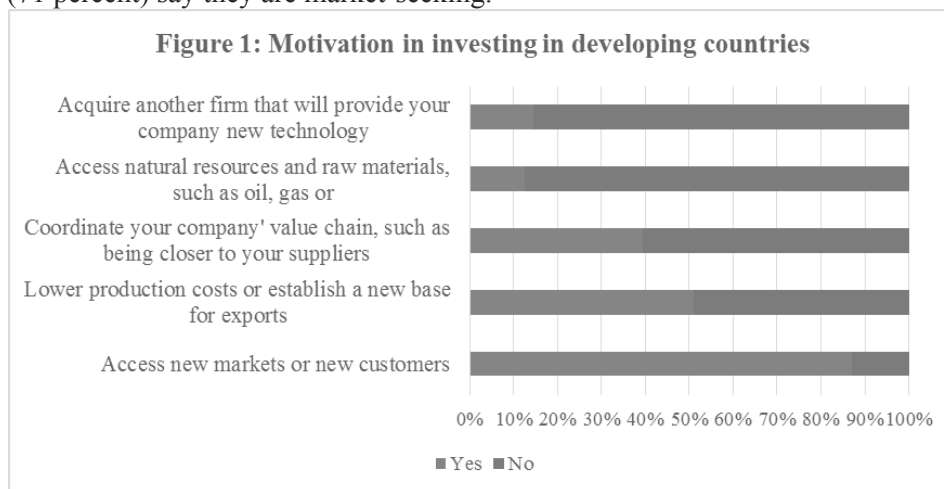
Motivation of investors in Vietnam

To check whether there is difference in motivation between investors in Vietnam and other developing countries, analysis of variances (ANOVA) is employed. The result in table 3 reveals that there is no difference in the trend of investors in Vietnam and other developing countries (Sig. value > 0.1). In other words, different types of investors in Vietnam are motivated by various factors.

Table 3. ANOVA on the difference between motivation of investors in Vietnam and other developing countries

		Sum of Squares	df	Mean Square	F	Sig.
Access new markets or new customers	Between Groups	.125	1	.125	1.106	.293
	Within Groups	85.137	752	.113		
	Total	85.263	753			
Lower production costs or establish a new base for your exports	Between Groups	.250	1	.250	.998	.318
	Within Groups	188.165	752	.250		
	Total	188.415	753			
Coordinate your company's value chain	Between Groups	.361	1	.361	1.511	.219
	Within Groups	179.438	752	.239		
	Total	179.798	753			
Natural resources and raw materials, such as oil, gas or	Between Groups	.055	1	.055	.504	.478
	Within Groups	82.226	752	.109		
	Total	82.281	753			

Acquire another firm that will provide your company new technology	Between Groups	.013	1	.013	.108	.743
	Within Groups	93.939	752	.125		
	Total	93.952	753			

Most of investors value the motivation of accessing to the market or new customers in Vietnam. With relatively large young population – over 90 million with increasing average income and about 60% of which is aged under 35, Vietnam' sizeable marketplace have attracted growing interest of investors from Japan, South Korea and so on. Moreover, Vietnam is an emerging market where domestic production and services are still at the beginning of growth, the demand and requirement for quality of customers are getting higher, which enables international investors to compete successfully in the market. However, it also implies that the motivation of accessing market of international investors are likely to be a threat for domestic firms in Vietnam. With the advantages in capital, management and technology, and less motivation of coordinating with local firms, international investors can easily compete in the local market, which forces local firms to shut down their business.

3.2.   The factors influencing the investment decision of companies in developing countries and application in Vietnam

Factors influencing the investment decision of companies in developing countries – analysis from survey

To attract investment flow, it is important to have an insight on the factors influencing the investment decision of firms based on investors' perception. When deciding to invest in a specific country, investors have to consider a broad range of elements. Survey mentions ten factors which are probably decisive to investors' decision and ask them to evaluate the importance of each element using likert scale from 1 to 4. The value of 1 is for not at all important and 4 for critically important. Table 4 analyzes the mean value to compare the importance of influencing elements. The bigger the mean values are, the more important of influencing factors are. Meanwhile, figure 2 shows in detail the distribution of values in likert scale for each influencing factor.

Accordingly, the mean values in table 4 show that factors related to business environment are evaluated highly in investors' perception. Political stability and security is the most influential factor in investment decision of firms in developing countries. Following that, business - friendly legal and regulatory environment are the second most important factor influencing the investment decision of firms. Around 86% of respondents see the legal and regulatory evirenement as an important of critically important factor for investment decision.

Table 4. Characteristics impacting investment decision in developing countries

Characteristics	Obs	Mean	Std. Dev.	Min	Max
Political stability and security	748	3.364973	0.752828	1	4
Business - friendly legal and regulatory environment	749	3.252336	0.7251299	1	4
Large domestic market size and potential	745	3.193289	0.8425563	1	4
Macro - economic stability and favourability of exchange rate	746	3.091153	0.8320764	1	4
Available talent and skill of labor	746	2.969169	0.8243695	1	4
Good physical infrastructure, such as transportation and telecom	749	2.903872	0.8314336	1	4
Low tax rates	744	2.685484	0.8883902	1	4
Low cost of labor and other production inputs	747	2.609103	0.9115421	1	4
Access to land and real estate	741	2.37247	0.9817238	1	4
Availability of financing in the domestic market	740	2.352703	1.021385	1	4

Meanwhile, market related factors are less influential to investment decision of companies in developing countries. Large domestic market size and macro – economic stability and favourability of exchange rate stand at the third and fourth positions out of ten elements surveyed, with the both value bigger than 3 in

likert scale, meaning being important in investors' evaluation, but not the most important factor according to investors' assessment. Factors related to inputs seems to not the priorities of investors when investing in developing countries. Labor, physical infrastructure, low cost of labor, land access and other financial incentives are rated lower in the investors' view.

Figure 2: Importance of characteristics to company' decision to invest in developing countries
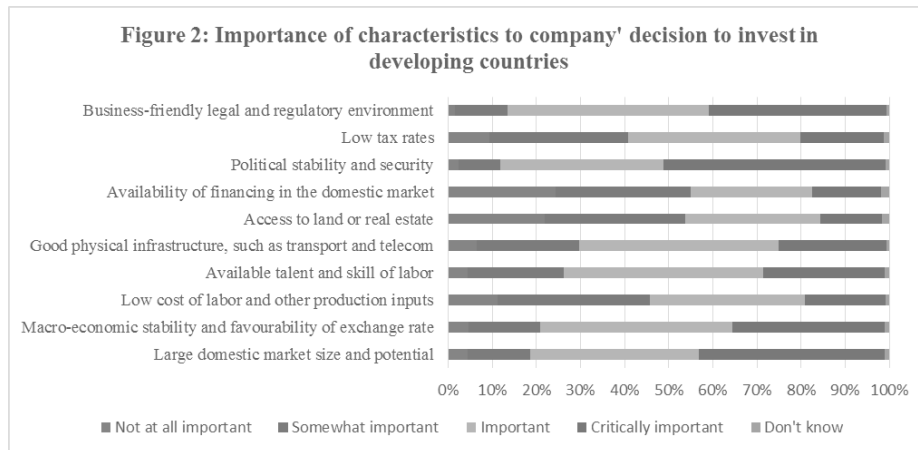
Factors influencing investment decision of investors in Vietnam

The ANOVA result in table 5 compares the difference in the perception of investors in Vietnam and other developing countries on the factor influencing investment decision. The Sig. values indicate that investors in Vietnam is indifferent in evaluating the importance of influential factors. In other words, for investors in Vietnam, political and legal environment also play the most important role in attracting foreign direct investment. Following that is the factors related to market and macro – economic conditions. This result can explain for the increase of FDI flow into Vietnam in recent years. The introduction of new regulatory frameworks has been key to attracting these high levels of foreign investment, and has helped control inflation, motivate economic growth and stabilize the interest rate domestically.

The availability of talent and skill labor, not the cheap labor, together with infrastructure also play an important role in attracting investment. Financial incentives and cheap cost production input, especially low tax rate and low labor cost are not the most important factors investors searching for in developing countries in Vietnam. It implies that the policy of cutting tax should not be seen as the most efficient tool to attract investment in Vietnam and should be consider carefully by government because it can cause deficit for state budget and encourage foreign investors to exploit this policy to avoid taxes. Regarding to human resource, cheap labor cost is not a strength for Vietnam in attracting investment anymore when investors are searching for the talent and skill.

Table 5. ANOVA on the difference between factors influencing investment decision of investors in Vietnam and other developing countries

		Sum of Squares	df	Mean Square	F	Sig.
Large domestic market size and potential	Between Groups	.724	1	.724	.294	.588
	Within Groups	1849.557	752	2.460		
	Total	1850.281	753			
Macro-economic stability and favourability of exchange rate	Between Groups	.908	1	.908	.408	.523
	Within Groups	1672.052	752	2.223		
	Total	1672.960	753			
Low cost of labor and other production inputs	Between Groups	1.682	1	1.682	.814	.367
	Within Groups	1552.817	752	2.065		
	Total	1554.499	753			
Available talent and skill of labor	Between Groups	.056	1	.056	.025	.873
	Within Groups	1640.163	752	2.181		
	Total	1640.219	753			
Good physical infrastructure, such as transport and telecom	Between Groups	.176	1	.176	.108	.742
	Within Groups	1220.715	752	1.623		
	Total	1220.891	753			
Access to land or real estate	Between Groups	1.131	1	1.131	.360	.549
	Within Groups	2364.409	752	3.144		
	Total	2365.540	753			
Availability of financing in the domestic market	Between Groups	.781	1	.781	.231	.631
	Within Groups	2541.035	752	3.379		
	Total	2541.816	753			
Political stability and security	Between Groups	.869	1	.869	.490	.484
	Within Groups	1332.549	752	1.772		
	Total	1333.418	753			
Low tax rates	Between Groups	5.070	1	5.070	1.977	.160
	Within Groups	1928.729	752	2.565		
	Total	1933.798	753			
Business-friendly legal and regulatory environment	Between Groups	.285	1	.285	.188	.664
	Within Groups	1138.644	752	1.514		
	Total	1138.930	753			

3.3. Reasons for investment exit in developing countries and application for Vietnam

This part analyzes and discusses about the final stage in investment life cycle - divestment. In the survey, 219 respondents, who are from firms having had investment exit, were asked to choose the main reasons for closing down their foreign affiliates amongst 11 listed reasons, both subjective and objective ones. Table 6 presents the analysis on the participants' responses. The largest percentage of choice belongs to the subjective reason – change in company's strategy and management priorities- which accounts for 13.1% of the total number of exiting firms. Besides the main reason coming from companies themselves,

other most important reasons of investment exit come from economic and regulatory conditions of host countries, namely "unstable macroeconomic conditions or unfavorable exchange rate" and "increased policy or regulatory uncertainty. Among mentioned reasons, it is noticeable that factors related to inputs and tax incentives have impact on the decision of investment exit of firms on smaller percentage of firms comparing with macro - economic and legal elements.

Table 6: Reasons for investment exit in developing countries

Reasons for exit	Total number	Frequency	Percentage
Withdrawal of tax incentives	219	10	1.3
Sudden restrictions on hiring expatriate staff	219	12	1.6
Expropriation or taking of your property or assets by the government	219	18	2.4
Increase in cost of local labor and raw materials	219	22	2.9
Sudden restrictions on transfer and convertibility of currency	219	36	4.8
Breach of contract by the government	219	38	5.0
Non-transparent or arbitrary government conduct	219	50	6.6
Global economic downturn	219	64	8.5
Increased policy or regulatory uncertainty	219	70	9.3
Unstable macroeconomic conditions or unfavourable exchange rate	219	90	11.9
Change in your company's strategy and management priorities	219	99	13.1

4. POLICY IMPLICATION FOR VIETNAM AND CONCLUSION

Firstly, the finding of study suggested that different types of FDI have heterogeneous motivations in investing in developing countries and Vietnam particularly, some types are likely to bring advantages to host country while others can be threat to local firms as well as environment. To gain benefits from FDI flow and minimize threat for local firms, government should design proper regulatory framework for each type of FDI to encourage foreign capital pour into high – tech sectors in order to boost domestic technology and improve weakness of economy without harming existing domestic production. These results reinforce the need for targeted policy approaches by government, keeping in mind the specific types of FDI they wish to attract, retain, and harness for development. FDI should not be attracted at any cost. One of the most important aims host countries should notice when encouraging FDI is to enhance capacity of local firms by spillover effects. Therefore, there should be policies to supporting local firms in improving production capacity to be able to corporate with international firms and be part of global value chain.

Secondly, it is found that investors are influenced by different factors in deciding investment in Vietnam. Amongst various factors mentioned, factors related to political stability and security as well as business – friendly legal and regulatory environment are ranked the first and second orders in importance. These elements are also the main reason for investment exit of investors besides strategy – related factors of firms themselves and market downturn. Although Vietnam government has achieved remarkable outcomes in improving investment environment to make Vietnam become an attractive destination for international investors recently, there are still many points should be improved further. Moreover, government should be careful when implementing tax incentives for international investors because it seems not to be a decisive factor comparing with other elements, but it can be a factor for investors to exploit for price transfer among

countries. With the rapid development of technology, it is obvious that elements such as natural resources or cheap labor are not the strength of Vietnam anymore. Improvement of human capital should be paid attention, focus on talent and skill of labor.

The analysis on investment exit suggested that addressing policy reforms to attract FDI and offering aftercare services are equally important. Policy makers tend to focus on attracting FDI through investment incentives, facilitation, and proactive investment promotion. While these are important, investors say that investment protection is even more critical to them, suggesting that government efforts should also aim to encourage investors to stay in the country and expand their operations. Policy initiatives should include strengthening investor protection guarantees, providing proactive investor aftercare, managing grievances, and promoting linkages.

The study provided insights into FDI in Vietnam from perception of investors which is a new point comparing with previous studies and gave some suggestions for Vietnam government to boost country benefits from outside investment flow. However, many shortcomings still remain which are need to be solved in future studies.

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THE FORTH INDUSTRIAL REVOLUTION AND THE IMPACT OF INNOVATION ON FIRM PERFORMANCE, A CASE STUDY OF APPOTA

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ABSTRACT: *Innovation in the mobile phone industry is by far the most important factor to ensure the business success since it steers the firm into improvement and triggers customers' curiosity. The aim of this research is to discover the relationships between innovation i.e. function, design and customer satisfaction in this company. To have a quantitative observation, questionnaires were designed and sent to customer of Appota. The data attained from the surveys is analyzed by SPSS statistical package program. Analysis results showed that the customer's satisfaction regarding design and function does not depend on the gender, it is affected by the age. Therefore, company should look for targeted customers' group and focusing on their demand when it comes to innovation changes.*

Keywords: Innovation, Appota, function, design, age, gender, customer satisfaction, 4ᵗʰ industrial revolution

1. INTRODUCTION

According to a market research conducted by Appota, which is a gaming company, in 2017 (APPOTA, 2017), smartphone penetration in urban areas has risen from 20% in 2013 to 72% in 2016, which means a 350% increase in three years. This may be considered a booming in smartphone usage. In addition, the number of smartphone brands is added every year, including several big companies, such as Apple, Samsung, and Google. In 2017, there are approximately 20 brands, if not included unnamed phones from unknown manufacturers. The abundance of smartphone brand leads to the need to investigate the purchase behavior of customers, in order for a brand to gain advantages over others. As stated in a book (Kemp et al., 2003), firm performance is largely linked with innovation, this performance also includes the terms customer satisfaction, which will be the main focus of this research. Customers are being seen as the source of a company's profitability (Hogan et al., 2002). This leads to an emphasis on the customer in the development strategy of all operating companies. Along with brand loyalty, customer satisfaction is of great importance to estimate a company's success. Hence, enhancing customer satisfaction is a great challenge for the smartphone industry in the recent decade. This factor, which is used to estimate how much a product or service pleases its customers, is a crucial part of repurchase intent (Nemati, Khan and Iftikhar, 2010). In another research by Anderson, Fornell, and Lehmann (1994), the results also showed that customer satisfaction has a positive effect on market share and profitability. Creativity means making new product while innovation means that creative product results in financial benefits. Innovation means to create a new product or make and implement a new process; the main purpose of innovation is to gain the sustainable competitive edge or improve the efficiency of the organization and to get customer satisfaction (Leonard-Barton, 1992). Its main objective is to raise the efficiency and competitiveness of the company. This factor

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leads to the level of satisfaction in the buyers (Han et al., 1998), especially in the smartphone market, where each new product should be distinctive from other rivals in order to gain attraction from customers. Customer satisfaction may be defined as the degree to which the product buyers are satisfied with the product performance and their expectations are met. According to Oliver, Rust and Varki (1997), "satisfaction of the customer in general words means customer response to the condition of fulfillment, and customer decision of the statement of fulfillment". The customer satisfaction is the source of customer loyalty, as Mittal et al. (1998) described that the customer satisfaction accounts for customer loyalty. Therefore, any organizations paying less attention to customer satisfaction will be out of the market. Since Vietnam is experiencing a rapid growth in the number of smartphone owners, the smartphone industry is in need of research indicating the factors affecting customers' purchasing power, especially for the young generations. However, the number of works related to this interest is limited or undisclosed because they are mainly under the ownership of smartphone companies. Thus, this research provides an insight into the impact of smartphone innovation to customer satisfaction in Vietnam, using data collected through a survey. It establishes a relationship between product innovation and customer satisfaction in terms of smartphone manufacturing, pointing out to which extent a buyer is willing to pay for new smartphones thanks to the innovations in their design and function. In addition, the relationship is compared between male and female customers, as well as among different age groups. The information presented in this research is expected to help to reaffirm the strategy being used by global smartphone manufacturers, proving the accuracy and potential of the innovationsatisfaction relationship, as well as apply that strategy appropriately to Vietnam's condition.

2. LITERATURE REVIEW

2.1 Innovation

Despite going through a long period of study, there is an absence of a unified global common explanation for the term of Innovation (Lesakova et al., 2017). In general, innovation is considered the core of an organization (Akram et al., 2017) determining its success and achievements. Whenever companies fail or refuse innovating, they will soon disappear from the market. Moreover, innovation also brings and maintain several more benefits to firms over their rivals (Atalay et al., 2013). According to De Meyer and Garg (2005), innovation is characterized as a monetarily and socially effective presentation of another way or another fusion of existing methods in transforming materials to an outcome that result in changes in the value and price relationship offered to the clients. Another statement from Therrien et al. (2011) claimed that innovation represents a procedure identified with changes in capacities and forms whereby business is attempting to secure and expand upon their unique mechanical capability. In company level, innovation is the ability to adapt creativity to create a product evolution and generate novel goods and services (Rubera and Kirca, 2012). Innovation could be illustrated as products development, process advancements, development in business strategy, management structure, brand, marketing tactic, administration frameworks, client administration, and experience (Davila et al., 2013). In the Oslo Manual (OECD, 2005), innovation is classified into four categories which are product innovation, process innovation, marketing innovation and organizational innovation. This study will take into account only the product innovation which includes the presentation of products which is recently developed or remarkably enhanced (OECD, 2005) regarding to their functions and designs.

2.2 Firm performance

Firm performance is specified as a multidimensional notion (Atalay et al., 2013) which is a measure of the success of a company (Yeung et al., 2003). Additionally, it contains three success indicators: financial

performance, operational performance and the quality of products (Lakhal et al., 2006). The performance of an organization could be evaluated by two main methods which are objective and subjective measurements (Atalay et al., 2013). In this study, the subjective method was employed to survey the customers' satisfaction of recent smartphones' innovations and subsequently determine the innovation–satisfaction relationship.

3. METHODOLOGY AND FINDING

The objective of this research is to establish a reliable relationship between 2 types of product innovation of smartphones (design and function) and satisfaction of customers. In doing so, a questionnaire was developed consisting 2 questions and 19 statements. The 2 questions were about the gender and age of the respondents. Regarding the statements, the first one asks whether the respondent agree or disagree that he/she satisfies with the recent innovation in design and function of smartphones, which acts as the dependent variable in the regression model. The rest were 9 statements each about Design innovations and Function innovations, all of which represent the independent variables. It is also of note that for each type of innovation, 2 to 3 negative and positive statements were proposed for each specific innovation items (the screen for Design, GPS for Function, etc.). The reason for that was to eliminate acquiescence bias, which is the tendency of respondents to agree with the statements of a questionnaire regardless of their content (Hinz et al., 2007). For the aforementioned statements, a 5-point Likert scale from Strongly Disagree to Strongly Agree was utilized to scale the responses to the questionnaire. The questionnaire was used for surveying by generating a google form and distributing it through social media to collect responses from netizens. The collected data was used for statistical analysis, which consisted of 4 main stages. The first stage was the reliability test and the factor analysis of the questionnaire. Then, the relationship between product innovation and customer's satisfaction was derived using multiple regression analysis. In the last 2 stages, the satisfaction of innovation was compared between genders and different age groups.

4.RESULT AND DISCUSSION

4.1 Reliability test and factor analysis

Cronbach's Alpha is the test for internal consistency of a set of items, which are the statements in this research, and it is also regarded as a test for scale's reliability (Bruin, 2006). For all items, a value higher than 0.6 is considered acceptable, while for each individual item, their Corrected Item-Total Correlation must be higher than 0.3 to be retained. The full result of the reliability test is listed in APPENDIX A and key features are summarized in Table 1. From the table, it is obvious that all items of Design and the variable itself satisfied the above conditions and were hence kept for further analysis. On the other hand, even though the Cronbach's alpha of Function variable was higher than 0.6, the Corrected Item-Total Correlation values of statement 2 and 6 (denoted as FQ2 and FQ6) were lower than 0.3 and therefore must be deleted. The reliability test was then rerun for modified Function's items and summarized in Function (new) column of Table 1. The revised items all had Corrected ItemTotal Correlation higher than 0.3 and the Cronbach's alpha for Function increased to 0.864.

Table 1: *Result of reliability test for Design and Function variables.*

Design			Function (old)			Function (new)		
Item	Cronbach's Alpha if Item Deleted	Corrected Item-Total Correlation	Item	Cronbach's Alpha if Item Deleted	Corrected Item-Total Correlation	Item	Cronbach's Alpha if Item Deleted	Corrected Item-Total Correlation
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*
DQ1	0.873	0.78	FQ1	0.794	0.69	FQ1	0.823	0.78
DQ2	0.894	0.49	FQ2	0.839	**0.28**	FQ3	0.862	0.50
DQ3	0.900	0.44	FQ3	0.815	0.53	FQ4	0.853	0.58
DQ4	0.883	0.64	FQ4	0.802	0.65	FQ5	0.834	0.71
DQ5	0.880	0.69	FQ5	0.795	0.68	FQ7	0.825	0.77
DQ6	0.888	0.58	FQ6	0.844	**0.216**	FQ8	0.837	0.69
DQ7	0.871	0.79	FQ7	0.793	0.70	FQ9	0.861	0.43
DQ8	0.878	0.70	FQ8	0.805	0.61			
DQ9	0.870	0.80	FQ9	0.822	0.46			
Cronbach's Alpha = 0.894			Cronbach's Alpha = 0.831			Cronbach's Alpha = 0.864		

After the reliability test and the revision of Function's items, factor analysis (Exploratory Factor Analysis or EFA) was carried out on each variable to regroup the items. The result is given in detail in APPENDIX B and summarized in Table 2. From the table, the Design variable was divided into 2 groups named DS1 and DS2 and for Function they were FC1 and FC2. In the end, from the initial 2 variables, the items were regrouped into 4 news variables that could affect the satisfaction. The new variables with their corresponding items are included in Table 3.

Table 2: *Result of EFA*

Rotated Component Matrixᵃ Component						
	1	2		3	4	
DQ2	0.814		FQ4	0.867		
DQ5	0.778		FQ8	0.864		
DQ6	0.771		FQ1	0.845		
DQ1	0.731		FQ6	0.752		
DQ9	0.727		FQ9		0.85	
DQ7	0.579		FQ5		0.773	
DQ3		0.808	FQ3		0.726	
DQ8		0.76				
DQ4		0.582				
	DS1	DS2		FC1	FC2	

Table 3: *New variables after regrouping*.

Group	Item	Description
DS1	DQ2	1.The super large touch screen introduced in the first Samsung Galaxy Note would be very satisfying to type and read on.
	DQ5	2. The large screen of new generation smartphones makes them hard to hold or keep in your pocket, and making it prone to robbery
	DQ6	5. A stylus pen like the S-pen of Galaxy Note 5 provide a satisfying writing and drawing experience.
	DQ1	6. Full aluminium body gives a luxury feeling when holding a smartphone
	DQ9	7. 2-sided glass body makes a phone more charming than an aluminium body
	DQ7	9. The thinner and lighter body of new generation smartphones are more convenient to hold and use.
DS2	DQ3	3. When large screen smartphone appears on advertisements, it made you immediately want to own one
	DQ8	4. iPhone 8 makes a high impression a truly wireless device, free from charging cables and headphone cords, freeing you from tangled cables
	DQ4	8. Replacing most physical buttons with digital button on smartphones makes them more comfortable and easier to use
FC1	FQ4	1. Water resistance, which was first introduced in Xperia (Sony), was one of the most important features ever appeared in a smartphone. You will never have to worry if you dropped your phone into water
	FQ8	6. You were super amazed when Apple introduced multi-point touchscreen smartphone. Once you had a smartphone with touchscreen, you were very satisfied and never switch back to physical keyboard phones
	FQ1	4. Touch ID allow users of the phone to unlock their iPhone quickly and confirm purchases from the iTunes and Appstore with ease. Super convenient!
	FQ6	8. Thank to free Global Positioning System (GPS) on smartphones, you can travel without getting lost and use helpful applications like Grabtaxi, Uber, etc...
FC2	FQ9	3. Since water resisting appeared on smartphones, you would not buy one without that feature
	FQ5	5. Fingerprints can be lifted from anywhere and that makes it easier for hackers to get into someone's phone. Plus, you cannot change them once they are stolen.
	FQ3	9. GPS drained your battery too fast you rarely use it

4.2. The correlation between product innovation and customer's satisfaction.

4.2.1 Pearson correlation coefficient

Pearson correlation coefficient is the measure of the correlation between two variables X and Y. It has a value between +1 and −1, where 1 is total positive correlation, 0 is no correlation, and −1 is total negative correlation. The Pearson correlation result is summarized in Table 4.

Table 4: *Pearson Coefficient of variables*

Correlations		S	DS1	DS2	FC1	FC2
S	Pearson Correlation	1	.813**	.664**	.767**	.636**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	85	85	85	85	85
DS1	Pearson Correlation	.813**	1	.651**	.818**	.571**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	85	85	85	85	85
DS2	Pearson Correlation	.664**	.651**	1	.587**	.495**
	Sig. (2-tailed)	.000	.000		.000	.000
FC1	Pearson Correlation	.767**	.818**	.587**	1	.562**
	Sig. (2-tailed)	.000	.000	.000		.000
FC2	Pearson Correlation	.636**	.571**	.495**	.562**	1
	Sig. (2-tailed)	.000	.000	.000	.000	

The Pearson correlation coefficients range from 0.495 to 0.813 in the data sample with a note that all of the correlations are positive. In addition, 100% of significant tests prove the existence of relationships between the factors in overall. As such, the data are totally fit with linear models.

4.2.2 Multiple regression analysis.

Multiple regression model determines the relationship between a dependent variable, which is the satisfaction of customers (S), and independent variables (DS1, DS2, FC1, and FC3). Adjusted R Square equals 0.727 indicates that 72.7% of the variances in term of the customer's satisfaction. The F value is 57.071 at 95 % confidence level with sig value equal 0,000. The Durbin Watson Test is a measure of autocorrelation, also called serial correlation, in residuals from regression analysis. In this test, Durbin Watson statistic is 1.959. it means that models are not violated when using multiple linear regression. The maximum value of VIF (Variance Inflation Factor), 3.58, explains no multicollinearity between the independent variables, hence, the model is acceptable.

Table 5: *Result of multiple linear regression model*

Model B	Unstandardized Coefficients		Standardized Coefficients	t	Sig. Tolerance	Collinearity Statistics	
	Std. Error	Beta				VIF	
1 (Constant)	.645	.195		3.314	.001		
DS1	.341	.090	.408	3.788	.000	.279	3.580
DS2	.151	.067	.172	2.239	.028	.549	1.820
FC1	.162	.074	.224	2.205	.030	.316	3.170
FC2	.195	.073	.192	2.673	.009	.626	1.597

R Square = 0.740; Adjusted R Square = 0.727; Sig = 0,000 Finally, the research found out the Linear multiple regression of the relationship between customer's satisfaction and four factors of innovation of Design and Function of Smartphone as followed:

S=0.645 + 0.341*DS1 + 0.151*DS1 + 0.162*FC1 + 0.195*FC2.

Where:

- S: customer's satisfaction.
- DS1: group1 of phone design innovations.
- DS2: group2 of phone design innovations.
- FC1: group1 of phone function innovations.
- FC2: group 2 of phone function innovations.

4.3 Comparison of the relationship between satisfaction and product innovation between genders and age groups.

4.3.1 The difference between genders

The ANOVA and Levene test's result comparing the satisfaction to smartphone's innovations between male and female respondents is presented in Table 6. The sig. value of Levene test was 0.801 (>0.05) at 95% confidence level indicating that the variances of males and females' satisfaction were not significantly different. Moreover, the sig. value of ANOVA test was higher than 0.05 at 0.737, which could be understood that the mean satisfaction of two sexes were not significantly different either. Nevertheless, the mean satisfactions were around 3.33.4, i.e. the satisfaction of customer only was merely the neutral and the customers do not really satisfy with these innovations of smartphones.

Table 6: *The difference between genders*

	N	Mean	Sig	
			Levene	**ANOVA**
Male	42	3.3095	.801	.737
Female	43	3.3721		
Total	85	3.3412		

4.3.2 The difference between age groups.

Unlike genders, the means and variances of different age groups showed a clear difference, as evidenced by the sig. values of both Levene and ANOVA test (see Table 7). Therefore, Duncan analysis was carried out to determine which age groups had similar responses. The result shows that the groups who are younger than 30 shared a similar neutral satisfaction (around 3.4), whereas those who are older than 30 expressed slightly negative satisfaction toward smartphones' innovations. However, since the sample populations of different age groups were not comparable (64 responses from the 18-23 age group compared to only 3 from over 30 respondent), hence, more responses from each age groups should be collected in the future.

Table 7: *The difference between age groups.*

Age	*N*	*Mean*	*Sig*		*Duncan*	*Subset for alpha = 0.05*	
			Levene	*ANOVA*		*1*	*2*
<18	5	3.4000	0.100	0.050			3.400
18-23	64	3.3906					3.391
23-30	13	3.3846					3.385
30-40	3	2.0000				2.000	
Total	85	3.3412				1.000	.975

4.4. Proposal to smartphone companies

The research result shows that most customers are neutral with the innovations of smartphones and there is no difference in satisfaction between the sexes. The age groups, on the other hand, showed a significant difference among them and should be the main focus of companies' innovation plan. For the purpose of proposing solutions, the satisfaction scores of the groups according to four product innovation variables are summarized in Table 8.

Table 8: *The satisfaction of age groups to 4 innovative variable*

Age	satisfaction	DS1	DS2	FC1	FC2
<18	3.40	3.20	**2.93**	3.40	<u>3.53</u>
18-23	3.39	3.41	**2.89**	3.40	**2.89**
23-30	3.38	3.36	3.10	<u>3.63</u>	3.00
30-40	**2.00**	**2.17**	**2.00**	**2.08**	**2.11**

From this, there are two proposals to the companies:

• The 30 - 40 age group: this group of customers is critical, all of these new and improved innovations are not satisfy them. Therefore, the company needs time to improve their own lines, or can introduce new products specifically for this group.

• Younger than 30 age groups: people in this group like these innovations about the function than that of design. The highest mean level of satisfaction only reached 3.63 that means the acceptable level. Therefore, the company should have the new innovations to satisfy the market.

5. CONCLUSION

This study gave a description of the relationship between customer's satisfaction and the innovations of Smartphone under a linear multiple regression of four factors about Design and Function. The data are collected through a number of questionnaires answering by various of people in different age groups. After analyzing the data, it can be noted that the customer's satisfaction does not depend on the gender, it is affected by the age. To be more specific, the younger people, less than 30 years old, prefer these innovations of Smartphone than the older people. However, the customers' satisfaction level is only in neutral level, not really high. Therefore, the company should conduct the new strategies to respond the demand of customers, especially suitable for different age groups to achieve the increase in sales.

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RELATIONSHIP BETWEEN THE PRODUCT DIFFERENTIATION AND FIRM PERFORMANCE OF JAPANESE INVESTED ENTERPRISES (JIES) IN VIETNAM

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ABSTRACT: *The amazing proliferation of product choices as well as remarkable improvements in innovation activities during recent decades have become key driving forces of product differentiation, which is deemed as a sustainable competitive advantage of firms in technological-driven economy. The concept of product differentiation in this paper will be approached from innovation perspective, referring to capabilities of firms to enhance product quality, design, and unique features. In addition, firm performance is measured comprehensively through Balanced Scorecard (BSC). The article provides an overview of the business activities of Japanese companies in Vietnam as well as analysis of their innovation performance and product differentiation in recent couple of years. Utilizing survey data from 158 JIEs operating in Vietnam, this study finds out the positive association between product differentiation and firm performance of JIEs in both manufacturing and service industry. Unique product feature is examined to be the most important determinant of product differentiation affecting firm performance of JIEs, which should be prioritized in sustainable development of JIEs.*

Keywords: *Product differentiation, firm performance, product quality, product design, unique product features, Japanese Invested Enterprises (JIEs)*

1. INTRODUCTION

Stepping into the 21th century, put under tremendous pressure in fast – changing technology through innovation activities and the accelerating increase of competitors in business, almost all organizations face the challenge how to have a sustainable competitive advantage (Kedera and et al., 2015). According to Rahman (2011), product differentiation is a competitive business strategy whereby a firm attempts to gain a competitive advantage by increasing the perceived value of its products and services relative to that of other firm's products and services. Besides the driving force of development such as the increase in competitors in market, customer demands and fast – changing technology through innovation activities, the main factor leading almost all of corporations in global market to differentiate their own products is the undeniable proliferation of product choices in brand and product categories. "Buying a car in the 1950s meant a choice between a model from GM, Ford, Chrysler, or American Motors. Today, you have your pick of cars, still from GM, Ford, and Chrysler, but also from Acura, Aston Martin, Audi, Bentley, BMW, Honda, Hyundai, Toyota, and so forth" (Jack Trout & Steve Rivkin, 2008). The choice becomes more complicated when each company has many brands, and each brand has the product line, including different categories. Take Toyota Motor Corporation as a telling example, with five main brands, namely Toyota brand, Hino, Lexus, Ranz, and Scion. If only Toyota Brand is mentioned, there are hundreds of models belonging to family cars,

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economy cars, sport cars, pickup tracks to name but a few, with the variety of color, size, design and other specification details. This acceleration of this trend is forecast to keep rising because "the choices inspire technology; the technologies create complication" (James Glieck, 2000). Thereby, firms have to seek competitive advantage by producing products with more valued features, such as product quality, product flexibility, attractive design and other unique features.

For recent decades, the relationship between the product differentiation and firm performance is one of the central interests in strategic management and international business field, marketing as well as Intellectual Property. However, there is no consistency in the definition of product differentiation (Haarla, A., 2003; Bain, 1956; Scheuing, 1974; Forsman, 2011; Vuong, 2014) in both of innovational and managerial perspectives. In addition, there is a great divergence in the way that definitions of firm performance and performance measurement systems are approached (Kaplan &Norton, 1996; Atkinson, Waterhouse &Well, 1997; Bititci, Carrie &Mcdevitt, 1997; Neely, 1998; Ittner., Larcker& Randall, 2003). Only a few number of researches have investigated direct association between product differentiation and organizational performance, i.e. Kedera et al. (2015), Joy and Khaled Mohammad (2012). Thereby, the results obtained from the different studies are unclear and inconclusive, which have prevented these authors from obtaining widely accepted conclusions. This paper is to tackle these mentioned drawbacks of literature by redefining product differentiation and firm performance, deploying balanced scorecard approach in measuring firm performance, developing a framework for the relationship between product differentiation and firm performance of JIEs in Vietnam via subjective data from 158 firms in Vietnam, in order to answer two research questions as below:

i. What is the most important dimension of product differentiation affecting firm performance of JIEs in Vietnam?

ii. How does product differentiation influence firm performance of JIEs in Vietnam?

2. LITERATURE REVIEW

2.1. Product

Product conception has been mentioned in numerous theories, especially in marketing fields, since the first decades of the 20th century. **Back to the history,** a product is identified as a kind of physical commodity. In 1923, Copeland viewed products as merchandise sold in retail stores, divided into three classes: convenience goods, shopping goods, and specialty goods. Copeland's original conceptualization clearly explains that, firstly, convenience goods are those customarily purchased at easily accessible stores. Secondly, shopping goods are those for which the consumer desires to compare prices, quality, and style at the time of purchase. Finally, specialty goods are those which have some particular attraction for the consumer, other than price, which induces him to put forth special effort to visit the store in which they are sold and to make the purchase without shopping. This definition is receipt and developed by many researches such as Holton (1958), Luck (1959), Bucklin (1963), Kaish (1967) Mayer, Mason, and Gee (1971), Bucklin (1976) to name but a few. Coming to late 1970s, Holbrook & Howard (1977), Enis & Roering (1980) expanded this concept with a new category called "preference goods" which are in the consumer package goods industry. iced tea or even beer if the monetary or time effort is too large"(Patric& Ben, 1986). Besides that, according to Gordon (1965), a product is defined "as the sum of the physical and psychological satisfactions the buyer receives when he makes a purchase". Although Gordon considered products associated with customer service, in this period, the service was still not regarded as an independent commodity.

However, modern concept of 'product' can be defined as "anything that a firm offers to satisfy the needs or wants of customers" Doyle (1998), in other words, being "anything which can be offered to a market for attention, acquisition, use, or consumption, that might satisfy a want or need." Kotler (1998). Thereby, in this study, products are deemed as both tangible goods and services, which a firm offers in order to satisfy the demands or desires of customers.

2.2. Product differentiation

Take a look back at the past, no one definition exists of what exactly constitutes product differentiation (Haarla, A., 2003). "In fact, it is difficult to define differentiation," said Jernström (2000). In strategic approaches, Bain (1956) stated that definition of product differentiation was multi-faceted and decidedly qualitative. In case studies of several manufacturing industries, Bain showed numerous product differentiation characteristics including product reputation, established dealer systems, brand allegiances, customer service, and advertising. Scheuing (1974) defined differentiation as "adding variations of one product which will compete with it within the same market." In addition to defining, it is important to consider two other issues, firstly, differentiation with respect to what and secondly, differentiation in whose eyes. Regarding the first question, Scheuing (1974) and Foote (1972) agreed that products are differentiated from those of competitors. Regarding the latter question, several writers imply that differentiation is based on customer perceptions. On the other hand, in innovational perspectives, product differentiation is also known as a capacity of innovation capacities, called Development capabilities, the ability to improve existing products, innovate and introduce the new products that are differentiated with those of competitors (Forsman, 2011). In addition, in 10 dimensions of i2Metrix paradigm by Vuong (2014), product differentiation, a criterion of differentiation, is defined as a capacity to differentiate firms' products and services through innovation.

Product differentiation is believed to be a useful approach helping a firm gain a sustainable competitive advantage as against its rivals due to many benefits for not only owners, but also customers and economy as a whole. Firstly, for organizations themselves, because product differentiation is an innovation activity, this helps production process more productive and lower the cost of production. Thereby, the expense undertaken to lower production costs will make the product less expensive for consumers while providing greater profit to the producer. Consequently, in years to come, a few changes in products create major improvements, and old product characteristics fall by the wayside, replaced by new and improved products, generating economic progress (Randall, 2009). In addition, Evans and Berman (1997) viewed product differentiation as the non-price-based strategy, which helps a firm be able to sell more products than its competitors at the same price, not to mention that consumers will be more willing to pay for the differentiated product more than to compensate the firm for its expenses to differentiate the product" (Randall, 2009). According to Chamberlin (1965), by differentiating its product offer, a firm may establish a quasi-monopoly, which will, to a certain extent, give a firm more freedom of pricing instead of being a mere 'price taker'. Last but not least, if a company carries out the product differentiation, it will get the trust of customers, position its brand in the market when facing with the substitute commodities and a keen competition. In keen competition, through product differentiation, huge effort of a firm to add more value into its products tends to lead others to conduct certain innovation so that they can compete and maintain market shares. This means that product differentiation becomes a driving force of development of products, technology and economy as a whole.

Product quality, product design, and unique product features are used as main dimensions measuring product differentiation in this research, briefly discussed as below:

Product quality: For tangible goods, based on Kotler et al's idea (2005), product quality is investigated as a firms' capability to enhance the performance of products including utility, operability, durability or life expectancy, reliability, and reparability, which "fits patterns of consumer preferences." (Kuehn and Day, 1962). For services, product quality is deemed the ability of a service company to enhance speed, serving performance of staffs and reliability of service products, which meet customers' expectation, such as faster delivery, faster payment duration, experience, and etiquettes of staffs.

Product design: Product design of tangible goods is deemed as a firms' capability to improve appearance of products, including colors, texture and frames design. Particularly for service products, product design is the appearance of visual factors such as communication products, costume, or dress code of staffs, and office decoration.

Unique product features: A feature is usually defined as "a logical unit of behavior specified by a set of functional and non-functional requirements" (Bosch, 2000) or "a distinguishable characteristic of a concept (system, component, etc.) that is relevant to some stakeholder of the concept" (Czarnecki and Eisenecker,2000). In this research, unique product features is a firms' capability to create and innovate a set of unique functional and non-functional characteristics of products, which it is difficult for others to emulate (Kedera et al., 2015).

2.3. Firm performance

Firm performance can be described as an umbrella term for all concepts that consider the success of a firm and its activities (Tangen, 2005). Performance can refer to actual results/outputs of certain activities, how an activity is carried out, or an ability to achieve results (Lönnqvist, 2006). Atkinson (2012) defined performance as the achievement of results ensuring the delivery of desirable outcomes for a firm's stakeholders.

Literature on Firm performance, management researchers in fields such as strategy management, operations management, human resources, organizational behavior, information systems and marketing have contributed to the topic of firm performance and performance measurement (Neely, 2002; Marr and Schiuma, 2003; Franco-Santos and Bourne, 2005). These different approaches towards performance measurement have led to numerous definitions of firm performance and business performance measurement system, and there is little consensus regarding its main components and characteristics of firm performance (Dumond, 1994). Although each author suggests a different definition of business performance measurement, researchers base on concept of firm performance closely to decide whether financial performance or non-financial performance prioritized. However, measuring performance using the accounting profit rate is unstable, as the profit rate may vary in different industries significantly over the business cycle (Globerman, 1979). Using financial measures may fail adequately to reflect the extent to which a firm achieves its short-term and long-term objectives (Geringer & Hebert, 1991). A firm may have a variety of objectives, ranging from profitability, market share and technology transfer to material assets. Traditional accounting measures thus are unable statistically to detect the excellence of the firm (Chakravarthy, 1986). Besides that, financial efficiency-based performance measures are less relevant, while non-financial measures are more relevant for strategies of differentiation (Porter, 1980; Govindarajan, 1988; Abernethy and Lillis, 1995; Perera et al., 1997; Bisbe & Otley, 2004). With a focus on developing products with unique features, researchers argue that financial performance measures are incompatible with the creativity and innovation necessary for a differentiation strategy (Perera et al., 1997; Chenhall & Langfield-Smith, 1998; Hoque, 2004). Based on the work of Abernethy and Lillis (1995) in the absence of process standardization and the need to encourage cross-functional co-operation and innovation, performance measurement systems require a shift from narrowly focused financial measures to measures that capture the critical success factors of product differentiation. These measures are likely to be non-financial and include such measures as customer service satisfaction, delivery performance, and product innovation measures.

To tackle the abovementioned weakness, **in this study, balanced scorecard (BSC) approach is employed as a more advanced way to measure firm performance.** The BSC system not only incorporates financial and non-financial measures but also translates a company's mission and strategy into tangible objectives and measurements. Firm performance refers to results associating to the Financial Perspective, the customer perspective, the internal business processes perspective and the learning and growth perspective, briefly explained as below:

The financial perspective retains the short-term approach of measuring profitability, sales growth, or generation of cash flow, mainly because these measurements indicate the company's financial success from a shareholder's point of view. Enterprise revenue growth, enterprise profit growth, ROA index and ROE index are used to measure financial performance of JIEs.

The customer perspective includes not only market share and new customer acquisition but also measures relating to the value propositions that the company will deliver to its customers, such as customer intimacy, operational excellence or product leadership (Arroyo, 2010). In this research, customer perspective mentioned includes improvement in customers' satisfaction, increase in number of new customers, reasonability of the price of product/service, assessment of customers to product/service, and access of customers to product/service.

The internal business processes perspective identifies critical internal processes in which the company must excel in order to deliver the value propositions that will attract and retain customers (Arroyo, 2010). The purpose of the internal business perspective is to determine the key business processes that create and deliver the goods and services of the company to the customers whilst developing measures to ensure that these processes are working well. Measures in the internal business perspective could be innovation rates, service measures, lead-time, quality measures, efficiency measures, costs reductions.

The learning and growth perspective identifies the capabilities required to deal with the competitive environment to create long-term growth and continuous improvement (Arroyo, 2010). The purpose of the innovation and learning perspective is to determine the ability of the company to continually improve and innovate. Theoretically, through increased improvement, businesses are able to improve their internal processes, leading to greater customer satisfaction, corporate growth, and increased profits (Scott et al. 2012). The possible measures used in this perspective are illness rates, employee turnover, education, and development.

2.4. Relationship between product differentiation and firm performance

There is a consensus that there is a positive relationship between product differentiation and firm performance among a sizable number of previous findings. Allen and Helms (2002) as well as Mosakowski (1993) study's results generally supported the hypotheses that positive and significant direct relationship between product differentiation and firm performance, when the focus and product differentiation are established, performance is higher than for other firms. Other similar conclusion is confirmed in the finding of Arasa, Robert (2014), Sara et al (2009), and Forsman (2011). The research of Mosakowski (1993), in a resource – based perspective, show that both Customer Service and R&D Differentiation have positive effects enhancing firm performance. Customer Service Differentiation is only positive and statistically significant for Net Income Performance while R&D Differentiation associates positively with and is statistically significant for both Net Income Performance and Revenue. On the other hand, according to Sara et al (2009), she stated that it is necessary to use appropriate performance measurement systems as a mediated model due to indirect effects of differentiation on firm performance. In other words, the positive association between product differentiation and firm performance must been examined through the mediating role of non-financial and financial performance measures.

However, by contrast, the result of multiple regression analysis indicated that **the differentiation strategy has not significant effect on organizational performance of companies in the study of Khaled Mohammad A.A. (2012),** which was designed to examine the impact of differentiation strategy on the organizational performance of Jordanian industrial companies with High quality products, Fast deliveries, Design & new products, and Unique product features as 4 main dimension of product differentiation; while firm performance is measured by financial and non-financial factors. **In spite of that**, the research of Joy I. Dirisuet et al (2013) is cited as an affirmation of previous researches, which indicated that product differentiation as a tool of competitive advantage has a positive and significant influence organizational performance of manufacturing companies in Nigeria. In detail, Joy's study shows an existence of positive significant relationship between higher product quality and the sales growth of an organization; between nice product design and sales growth of an organization, as well as a significant positive association between unique product features and customer satisfaction of an organization.

3. RESEARCH METHODOLOGY

3.1. Theoretical framework

Based on the fundamental knowledge of preceding literature review, the theoretical model in the research uses three independent variables including the product quality, product design, and unique product features. On the other hand, the dependent variable is firm performance including the financial perspective, the customer perspective, the internal business perspective, and the innovation and learning perspective under BSC approach. Both of the independent variables and the dependent variable are influenced by the control variables (size of firms, industries that firms are working in). In this way, the effects of product differentiation on firm performance are measured accurately and comprehensively, in line with the business environment in Vietnam. The firm size (Logarithmic form) in this research is decided by the number of employees working for organizations annually according Clause No.1, Article 3 of Decree No. 56/2009 / ND-CP dated 30/6/2009 issued by Vietnamese Government.

The diagram presents an overview of the relationship between the variables together as below:

Figure 1: The theoretical framework
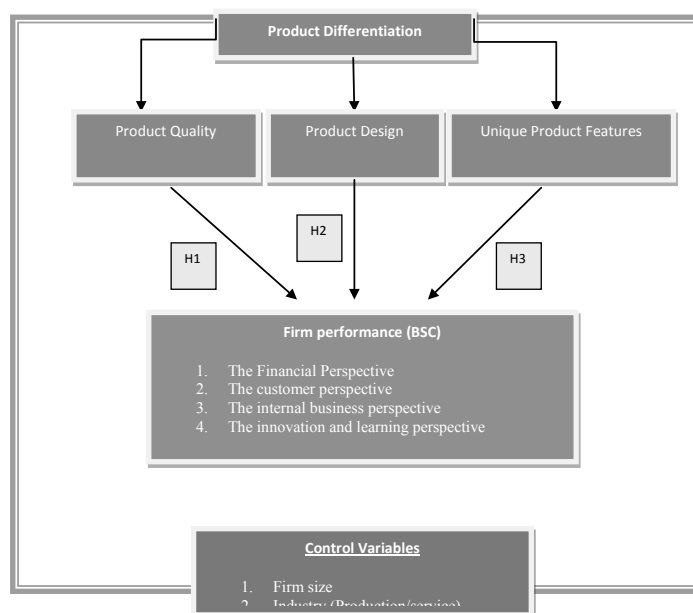
Source: Designed by the author, 2016.

The functions of linear regression are show as below:

1) Firm performance = β0+ β1* Product quality + β2*Firm size + β3*Industry + e

2) Firm performance = β0+ β1* Product design + β2*Firm size + β3*Industry + e

3) Firm performance = β0+ β1*Unique features + β2*Firm size + β3*Industry + e

4) Firm performance = β0 + β1*Product quality + β2*Product design + β3*Unique features + β4*Firm size + β5*Industry + e

The research is going to test the following hypotheses:

H1: Product quality positively associates with firm performance

H2: Product design positively associates with firm performance

H3: Unique product features positively associates with firm performance

H0: Product differentiation positively associates with firm performance

3.2. Data

A massive survey was conducted from June 20, 2015 to July 31, 2015. The list of companies surveyed (including 670 companies) was collected from various sources, mainly the website of the Vietnamese Chamber of Commerce, and Directory of Japanese enterprises in Vietnam. The questionnaire is written in both Vietnamese and English, was measured by a five-point Likert scale ranging from 1 to 5 to identify JIEs' capability in creating product differentiation as against rivals. We conducted three pilot tests before the questionnaires were sent to 670 JIEs representatives via emails, postal letters, social groups in social networks and face-to-face interview. Consequently, there are 158 usable responses used in this study, and coded before being processed by SPSS Statistic Program. Data for independent variables (product quality, product design, and unique product features) belong to the Part 2: "Innovation capabilities" with questions No.13.1, 13.2 and 13.3 respectively from the questionnaire. While the numbers for dependent variables are from the Part 3: "Firm performance" with question groups No. 16 (16.1, 16.2, 16.3, 16.4) , No.17 (17.1, 17.2, 17.3, 17.4, 17.5), No. 18 (18.1, 18.2), and 19 (19.1, 19.2, 19.3, 19.4, 19.5, 19.6) (Appendix A).

3.3. Sample

Sample based on area sampling method is Japanese invested enterprises in various geographical areas in Vietnam, especially in the Red River Delta, North Central and South Central Coast, the Southeast areas. Among 158 firms, 92 firms are in service sector (banking, finance, consulting, trading, insurance, exporting and so forth), and the remaining 66 firms are in manufacturing sector (mechanical engineering, auto-spare part, and so forth). Besides that, 81 firms from the North, 32 firms from the Centre, and 45 firms from the South. Speaking of firm size, there are 42 small firms, 57 medium firms and 59 large firms. Thereby, it is deemed that the survey sample is representative for an entire population.

3.4. Methodology

Both the qualitative and quantitative methods are used to examine the relationship between product differentiation and firm performance of Japanese invested enterprises. Firstly, the author reviewed the previous researches, and investigated the situation of Japanese in Vietnam, their innovation capabilities and product differentiation in recent couple of years. By the quantitative method, the author conducted the official survey in wide scope after doing three pilot tests. The data collected from the questionnaires have been processed by SPSS to find out how product quality, product design, and unique product features affect firm performance, then concluding the relationship between product differentiation and firm performance of JIEs in Vietnam. The author conducted, step – by – step, three steps as below:

- Step 1: Checking the reliability of the responses from survey.
- Step 2: Conducting Exploratory Factor Analysis (EFA).
- Step 3: Conducting OLS Regression.

4. RESEARCH FINDING AND DISCUSSION

4.1. Situation of JIEs in Vietnam

Vietnam has been a trusted destination for Japanese enterprises. The relationship between Vietnam and Japan has developed in various fields. In December 2008, the two countries signed a comprehensive bilateral agreement called Japan -Vietnam Economic Partnership Agreement (JVEPA), that officially took effect on 1 October 2009, which has promoted trade liberalization of goods and services, economic cooperation, and investment (VIETRADE, 2015). According to the Annually Report of Foreign Investment Agency, belonging to Ministry of Planning and Investment, from 2010 to the first 10 – month period of 2015, there was a steadily upward trend in the FDI inflow invested by Japanese enterprises into Vietnam. Table 1 illustrates a significant increase in the number of valid projects of JIEs by 90.5% during the 5-year period from 2010. Similarly, the total new registered and addition capital soared considerable by 65% from 2010 to 2013, before rising at lower pace to approximately USD 38 billion in 10/2015.

Table 1: Japanese investment situation in Vietnam

Year	No. Valid projects	Total registered capital
12/2010	1,397	USD 20.8 billion
5/2011	1,532	USD 21.2 billion
12/2012	1,758	USD 28.6 billion
10/2013	2,136	USD 34.3 billion
12/2014	2,477	USD 36.9 billion
10/2015	2,661	USD 38.3 billion

Source: Annually Report of Foreign Investment Agency

http://fia.mpi.gov.vn/

As announced by the Ministry of Foreign Affairs in 10/2014**, the number of Japanese enterprises in Vietnam** increased gradually throughout six years from 2010. In 2014, there were about 1450 JIEs operating in Vietnam, rising by 10.9% as opposed to the figure in 2013, and nearly 1.5 times higher than that in 2010 (Table 2).

Table 2: The statistic in the number of JIEs in Vietnam 2010-2014

Year	The number of JIEs	Grow rate
2010	981	3.5%
2011	1,081	10.2%
2012	1,211	12%
2013	1,309	8.1%
2014	1,452	10.9%

Source: Ministry of Foreign Affairs in 10/2014

*http://thongtin-nhatban.com/news/detail.php?nid=150626054557*

In early 2016, Vietnam has approximately 2000 JIEs (including representative office). According to Atsusuke Kawada, Chief Representative of JETRO Vietnam, Japanese companies tend to express concern about investment environment in Vietnam and consider as an attractive market where is appropriate for long-term investment, thereby promoting the business expansion in Vietnam.

Major Japanese enterprises tend to carry out FDI projects with 100% direct foreign capital, with 213 new projects and total capital of newly registered and additional capital of $ 1.05 billion in 10/2015 (representing 71% total investment flow). The other projects were distributed in forms like BOT, BT, BTO, joint ventures, and business cooperation contracts (Report 2015 of Foreign Investment Agency). On the other hand, Japanese firms try to penetrate the Vietnamese market through different ways as Greenfield Investments, merger and acquisition (M&A). However, JIEs in Vietnam prefer doing M&A projects to investing directly in various fields. For example, in Foods & Drinks and consumer goods industry, in fact, Fund DIAIF bought 25% stock of Nutifood while Unicharm accounted for 95% shares of Diana. In securities field, SBI securities acquired 20% shares of FPT Securities Co., Nikko Cordial acquired 15% shares of the Petroleum Securities Company. In banks, Mizuho Bank acquired 15% shares of Foreign Trade Bank of Vietnam (Vietcombank). Last but not least, Sumitomo is also a shareholder of Bao Viet Insurance in Vietnam (Statistics of Vietnam Business Registration and the Ministry of Planning and Investment).

The main investment fields of JIEs in Vietnam are the manufacturing and processing industry, consumer goods production, real estate, construction, and other sectors as Information and communications technology (ICT), retailing, banking, insurance, consultant and so forth. The difference among JIEs and other investors, i.e. China and the USA, is that almost all of JIEs are technological companies, which focus on the long-term projects with huge investment in R&D, technology and machines, human resources. They accept net loss in the beginning of business operation in Vietnam for sustainable developments in years to come. By contrast, Chinese and the USA investors prefer the field of retailing or franchising/ licensing when entering a new market, due to the far lower expenditure for fix cost and shorter duration of capital turnover. Under the Annually Report of Foreign Investment Agency Vietnam from 2010 to 2015, the manufacturing and processing industries were the most preferred sector by Japanese firms throughout the period, accounting for well over 80%, followed by the construction sector, business of real estate, ICT with the figures of hovering 4% and other (Fig. 2).

Figure 2: Percentage of total registered investment capital in various fields accounting for total FDI inflow from Japan to Vietnam 2010-2015.
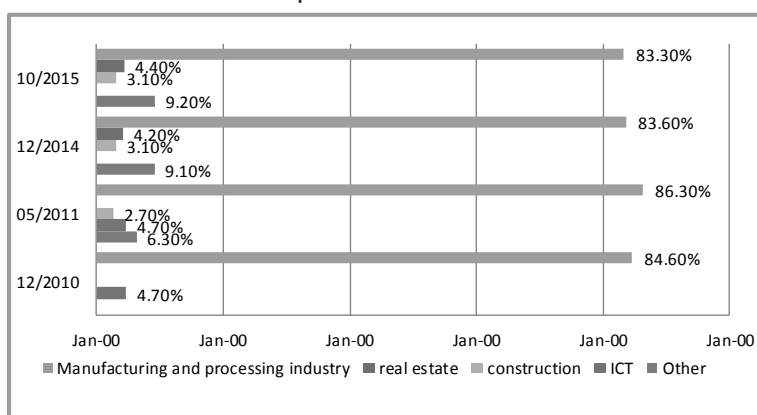

Source: Annually Report of Foreign Investment Agency

The culture and values possessed by Japanese enterprises are considerably influenced by Confucianism, in which collectivism and hierarchy are key factors, which impact directly and indirectly on management and innovative approaches of JIEs in Vietnam. Firstly, the Japanese people are driven by collectivism. The key difference among the culture of American organizations and Japanese firms is that American firms focus on individuality and competition, whereas Japanese firms concentrate on relationships in a group. In all of these cases, cooperation is driven by the need to improve the performance of the group" (Hill, 2011). The second characteristic of Confucianism is hierarchy. In essence, the collective relationship-oriented culture is the root of hierarchy, in which people are ordered in vertical and have hierarchical relationships. In business, the relationship between customer and vendor is one of the many hierarchical relationships in Japanese business culture. Others are parent company and subsidiary, head office and branch office, manager and subordinate, senior (a person who joined the company earlier) and junior (JETRO, 1999). In addition, the enterprises also value long-term oriented factors. Their values encourage themselves to adopt long-term effective strategies and policies.

However, in recent couple of years, **innovation performance of Japanese enterprises**, to some extents, tend to decline as against other competitors in all innovation aspects in global market. There are some Japanese corporations and SMEs becoming one of failures in M&A race of others in global market. For example, Sharp Corporation was bought by Foxconn (2016). Some possible causes of this problem are the risk-averse culture when hesitating of a radical innovation, conservative strategies when only focusing on product quality. While the faster customers' taste is changing, they tends to prefer products with fashionable design, multifunction and unique features. According to OECD, SMEs, Entrepreneurship and Innovation, 2010, the problem was not lack of policy options to stimulate innovation at SMEs, Japan's innovative programs "suffer from a lack of applications and have been found to be administratively difficult to implement. In particular, the methods of application are too complex." Consequently, their innovation performance lagged in comparison with other nations in all aspects of innovation (Fig. 3).

Figure 3: Innovation performance of SMEs in nations
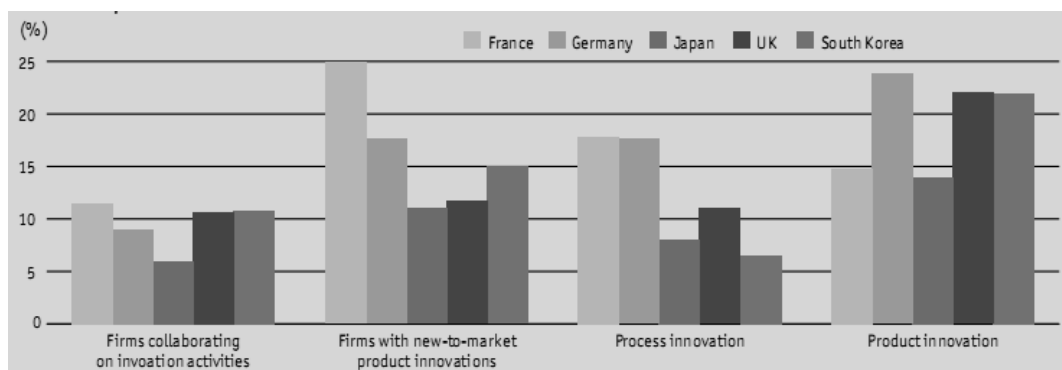
Note: Data are percentages of respondents in national SME survey: France 2005-06;Germany 2004-2006; Japan 2002-2005; South Korea 2002-04; UK 2007

Source: Derived from OECD. SMEs, Entrepreneurship and Innovation, 2010

When it comes to product differentiation, a merely number of radical changes is carried out in the global subsidiaries network of Japanese multinational companies, including in Vietnam. JIEs in Vietnam are often representative offices or branches of the parent companies in home country, where supporting for the main goals and strategies designed at the Head office in Japan by joint venture agreements and outsourcing contracts, and controlled by downstream management. "The implications of the apparent

decline in Japanese innovative capacity are quite serious for Japan's long-run economic prospects. If Japan's innovative capacities grow at a slower rate than in past decades, this could limit Japan's future prospects" (Lee Branstetter and Yoshiaki Nakamura, 2003). However, in order to compete and survive in global market, JIEs, recently, have paid more attention to product differentiation, and have tried to take advantages of this differentiation for financial and non-financial achievements.

4.2. Results from the regression model.

- **Reliability**

In accordance with the suggestion of Werts, Linn and Jöreskog (1974), the reliability of the responses from the survey was checked by using Cronbach alpha. Nunnally and Bernstein (1994) also showed that composite reliability, in other words is Cronbach alpha, should be at least 0.50 for any dimension of the conceptual model and in this research, the level at 0.70 is applied as the minimum acceptance criterion. Research team has checked convergent validity of the indicators by examining the 'average variance extracted (AVE)'. Götz, Liehr-Gobbers and Krafft (2009) reported that an AVE value of at least 0.5 indicates sufficient convergent validity, which means that a latent variable is able to explain more than half of the variance of its indicators on an average, and this figure is maintained in this research.

The result from reliability statistics (table 3) shows that Cronbach's Alpha for the independent variable – Product differentiation is 0.982>0.5, and that for all the dimensions of firm performance range from 0.861 to 0.888, showing the reliability of the questionnaire. This means that the responses in the questionnaire are correlated with each other tightly.

Table 3: Reliability statistics for dependent variable

Dependent variable (Firm performance)	Question number	N	Cronbach's alpha
Product differentiation	13.1 – 13.3	3	.982
Financial performance of firm	16.1 – 16.4	4	0.864
Customer performance of firm	17.1 – 17.5	5	0.888
Internal business processes of firm	18.1 – 18.2	2	0.861
Learning and growth of firm	19.1 – 19.6	6	0.883

Source: Designed by the author, 2016.

- **Exploratory Factor Analysis (EFA)**

The sample is adequate if the value of KMO is greater than 0.5 and less than or equal one ($0.5 \leq$ KMO ≤ 1). Furthermore, SPSS can calculate an anti-image matrix of covariance and correlations. All elements on the diagonal of this matrix should be greater than 0.5 if the sample is adequate (Field, 2000). In SPSS the inter-correlation can be checked by using Bartlett's test which "tests the null hypothesis that the original correlation matrix is an identity matrix" (Field, 2000), with significance <0.05. Multicollinearity, then, can be detected via the determinant of the correlation matrix: if the determinant is greater than 0.00001, then there is no multicollinearity (Field, 2000).

First and foremost, table 4 presents the factor analysis for both of the dependent variable (Firm performance), with KMO (0.863>0.7), and the independent variable (Product differentiation), with KMO of 0.783>0.7. Significant Barlett's test at 1 percent level. In other words, data from the survey results used to conduct EFA are entirely appropriate for inclusion in the regression model and criteria observed are correlated with each other in general.

Table 4: KMO and Bartlett's Test for dependent variable and independent variable

		Dependent variable	Independent variable
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.863	.783
Bartlett's Test of Sphericity	Approx. Chi-Square	1833.272	764.243
	df	136	3
	Sig.	.000	.000

Source: Designed by the author, 2016.

In extraction process, this research used Principal Components analysis and fixed number of factor at one factor only for the dependent variable, called **FAC1_1** - Firm performance, before moving to regression, with the cumulative variance values of 45.050% (45.050% of the change in the representative factor is explained by the criteria measured independent variable) and only one factor for the independent variable, called **FAC1_2 -** Product differentiation, with the cumulative variance values of 96.528%.

- **Correlation analysis**

Before conducting OLS regression, the author investigated the correlation between independent variables: product quality (13.1), product design (13.2), unique product features (13.3), product differentiation (FAC1_2) and the dependent variable (FAC1_1) through the standard deviation, the reliability, bivariate correlations, and Pearson correlation coefficient. The results is summarized at the table 5 and table 6:

Table 5: Correlations for hypothesis H1, H2, H3.

		Q13.1	Q13.2	Q13.3	FAC1_1
Q13.1	Pearson Correlation	1			
	Sig. (2-tailed)				
Q13.2	Pearson Correlation	.940**	1		
	Sig. (2-tailed)	.000			
Q13.3	Pearson Correlation	.942**	.962**	1	
	Sig. (2-tailed)	.000	.000		
FAC1_1	Pearson Correlation	.694**	.698**	.693**	1
	Sig. (2-tailed)	.000	.000	.000	
**. Correlation is significant at the 0.01 level (2-tailed).					

Source: Designed by the author, 2016.

Table 6: Correlations for hypothesis H0

		FAC1_1	FAC1_2
FAC1_1	Pearson Correlation	1	
	Sig. (2-tailed)		
FAC1_2	Pearson Correlation	.707**	1
	Sig. (2-tailed)	.000	
**. Correlation is significant at the 0.01 level (2-tailed).			

Source: Designed by the author, 2016.

Results from correlation matrix show that there are considerable relationships between the independent variables and dependent variable, as well as among each dimension of product differentiation with each other. Pearson correlation coefficients showing the correlation among them are at a high level, ranging from + 0.69 to +0.94. Specifically, correlations are significant at the 0.01 level (2-tailed).

Comparison among the impacts of product quality, product design, and unique product features on firm performance.

Results of the ordinary least square (OLS) regression analyses of the primary data with the participation of the control variables show that product quality, product design, and unique product features have a significant positive relationship with firm performance of JIEs in Vietnam (Table 7). For hypothesis 1 (H1), when firms enhance capability to improve product quality 1 point, firm performance increases 0.840 point. For hypothesis 2 (H2), when product design is upgraded 1 point, firm performance of JIEs firm improves 0.878 point. Finally, for hypothesis 3 (H3), when firms boost capability to create unique product features 1 point, firm performance rise 0.892 point. All regression models are statistically significant at 1 per cent level, and have no multicollinearity with VIF < 2.

Besides that, Table 7 reveals relatively small differences in the impacts of product quality, product design, and unique product features on firm performance. These results answer the first research question, in detail, unique product features is the most important determinant of product differentiation affecting firm performance of JIEs, which suggest for firms to capitalize on existed outstanding features and create new unique characteristics or functions for the remarkable development. However, this does not mean that firms ignore the similarly important role of product design and product quality.

Table 7: Effects of of product quality, product design and unique product features on firm performance

Hypothesis	Coefficients (Std. Error)	Sig.	R Square	VIF
H1	0.840***	.000	.502	1.011
Product quality → firm performance	(0.068)			
H2	0.878***	.000	.502	1.010
Product design → firm performance	(0.071)			
H3	0.892***	.000	.503	1.020
Unique product features → firm performance	(0.072)			

Source: Designed by the author, 2016.

The impact of product differentiation on firm performance.

Table 8 shows the results of the entire regression model for Hypothesis 0 (H0), which investigates whether Product differentiation positively associates with firm performance or not, as the answer for the second research question: How does product differentiation influence firm performance? The positive relationship between the independent variable and the dependent variable with the influence of control variables is confirmed with coefficients of +0.719, which means that if firms enhance product differentiation 1 point, firm performance will be improve 0.719 points, The model also has considerably statistical significance with p-value of 0.00 <0.05. R2 is 0.52, in other words, 52% of the response variables variation is explained by the linear model. In addition, there is no autocorrelation in the sample with Durbin-Watson value of 2.089 and no multicollinearity phenomenon with the tolerance and variable inflation factor (VIF) values in the acceptable range.

Table 8: Impacts of of product differentiation on firm performance

Hypothesis	Coefficients (Std. Error)	Sig.	R Square	VIF
H0	.719***	.000	.52	1.014
Product differentiation → firm performance	(.056)			

4.3. Discussion

- **For Hypothesis H1, H2, H3**

Generally, these results about effects of product quality, product design, and unique product features on firm performance support the finding obtained from the study of Joy et al (2013), as the preceding mention, and other researchers namely Dhar, R., & Sherman, S. J. (1996), and Kevin Zheng Zhou & Kent Nakamoto (2007). According to Tholke, Hultink, & Robben (2001), companies often introduce or reintroduce their products with improved performance along existing attributers and appearance of products (called enhanced features, including the product quality and product design in this thesis) or new, unique features (called unique features in this thesis) to compete with dominant brands in the market. Although both the enhanced and unique features are able to help firms differentiate their products in various ways, additional unique features seem to be key factors (Carpenter, Glazer, & Nakamoto, 1994). In other words, unique features are more differentiated in various ways (Kevin Zheng Zhou & Kent Nakamoto, 2007).

On the grounds that new and unexpected features help a new product arouse attention, especially in today's information-overload market (Kardes & Kalyanaram, 1992). It is obvious that unique features are unexpected and are likely to attract more attention and elicit arousal (Meyers-Levy & Tybout, 1989). In addition, new information is interesting and consumers tend to elaborate on it, it is likely to be more salient for interbrand comparison and be coded into long-term memory (Dhar & Sherman, 1996). The uniqueness of these novel features also makes them receive greater weight in preference judgments (Carpenter et al., 1994). Therefore, a product with unique features is likely to receive a more favorable evaluation in a decision-making process. And Kevin Zheng Zhou & Kent Nakamoto (2007) refined this view by showing that a product with unique features is perceived more favorably for experienced consumers, who got certain experiences and knowledge of products' utility.

- **For Hypothesis H0**

For hypothesis H0, this research conclusion is in line with the finding of Joy et al (2013). In addition, Erik and Smith (2008) have also demonstrated that the ability to differentiate product/service of a firm is an independent variable that is statistically significant and has positive impact on the business efficiency, and other studies support for this a positive relationship, namely Damanpour & Evan (1984), Mosakowski (1993), Allen and Helms (2002), Bayus, Erickson and Jacobson (2003), Mzoughi et al.,(2008). As mentioned above, it was investigated that product differentiation is an indispensable part of innovation capabilities, which positively impacts on firm performance of JIEs in Vietnam. Since the ability to innovate and introduce the new products, which are differentiated with those of competitors, is an advantage of the firm when entering a new market, their sales and profit would be higher than their competitors (Hurley and Hult, 1998; Song and Parry, 1997).

On the other hand, according to Joy et al (2013), in response to the dynamic nature of business environment and the fast-changing needs of customers, executive management needs to make sure that they provide adequate satisfaction to their customers. In addition, executive management should put additional emphasis, pay more attention, and invest on product differentiation, as it is an important instrument against competitors in the industry to achieve competitive advantage, which leads to greater firm performance

and guarantee the long-term survival of the organization. In addition, Kim B. Clark & Takahiro Fujimoto (1991) mentioned the conception of "Product development," which implies the development of new products (having any improvement and innovation) in industrial competition. "Product development makes a difference in the long-term competitiveness of a firm and its products. The promises associated with the developing a successful new product – increased market share, new customers, lower cost, a higher quality – are exciting, but the reality of managing product development is sobering.

5. CONCLUSION

Two research questions are examined through quantitative approach. To investigate the relationship between product differentiation and firm performance of JIEs in Vietnam, the massive survey was conducted and received 158 usable responses from JIEs in various geographical areas in Vietnam, especially in the Northern and Southeast regions of Vietnam, operating in both manufacturing and service sectors. Products quality, product design, unique product features, and product differentiation are used as independent variables, while firm performance (measured by Balanced Scorecard) is employed as only dependent variable in the theoretical framework with four hypotheses. This research finds out and discusses the positive association between product differentiation and firm performance of JIEs operating in Vietnam, as a tool of competitive advantage exploited in both manufacturing industry and services. Besides that, the comparison among their impacts of products quality, product design, and unique product features on firm performance, which dimensions are examined as statistically significant results, illustrates that unique product feature is the most important determinant of product differentiation affecting firm performance of JIEs.

This study also provides an overview of situation and product differentiation in JIEs operating in Vietnam. There is a steady increase in FDI inflow invested into Vietnam and the number of JIEs in Vietnam annually, which enters into the domestic market through different ways in the fields of manufacturing and processing industry, real estate, construction, ITC, and services. JIEs tend to maintain Confucianism in business culture with collectivism and hierarchy as key characteristics, which affect directly and indirectly the management, investment, innovation approaches. For JIEs in Vietnam, product differentiation has raised escalating public concern in international market, when there are many large corporations that have faced financial problems such as Sharp, Suzuki (Vietnam) and Hitachi. Therefore, besides the advantage of foreign elements, product differentiation is deemed as an efficient approach help JIEs to create a big gap as against the competitors and gain the outstanding competitive advantages in domestic market. This will get the trust of customers, lead to less volatility in prices, as well as the increase in profit, thus avoiding planning the low price strategy (Nguyen Van Tam, 2013).

It is believed that this study will be a scientific contribution for the topic about the association between product differentiation and firm performance of JIEs in Vietnam and a source of reference for JIEs in Vietnam about vital roles of product differentiation to business performance, specifically for financial and non-financial performance. From there, it is expected to bring valuable recommendations for domestic companies.

APPENDIX A: CODED DATA FOR THE INDEPENDENT VARIABLES AND THE DEPENDENT VARIABLE

Question No.	Content	Coded No.
13	**Product differentiation**	
	Capability to enhance product quality (performance and durability of products)	13.1
	Capability to improve product design	13.2
	Capability to innovate unique product features (unique function and other non-functional factors)	13.3
16	**Finance**	
	Enterprise revenue growth	16.1
	Enterprise profit growth	16.2
	ROA index increase	16.3
	ROE index increase	16.4
17	**Customer**	
	Improvement in customers' satisfaction	17.1
	Increase in number of new customers	17.2
	Reasonability of the price of product/service	17.3
	Assessment of customers to product/service	17.4
	Access of customers to product/service	17.5
18	**Internal processes**	
	Product development process is visible, transparent and clear?	18.1
	Enterprise has reward and punishment regime	18.2
19	**Learning and growth**	
	The recognition and compensation for employee's contribution.	19.1
	Enterprise encourages out-of-job training	19.2
	Enterprise invites guest speaker to training	19.3
	Enterprise actively build innovative culture	19.4
	Leader encourage innovation	19.5
	Leader encourage working in team	19.6

Source: Designed by the author, 2016.

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ANTECEDENT OF REPUTATION OF SUSTAINABLE COMPANY: A CASE FROM HOSPITALITY BUSINESS IN INDONESIA

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Abstract: *Hospitality industry should manage its reputation as a valuable asset for the business continuity. The hotel's reputation is built up by the employee's perceptions of treatment and sense of belonging and engagement of the hotel. The purpose of this study is to analyze employee's perceptions of corporate social responsibility (CSR) activities, employee engagement, and corporate reputation that have been undertaken by the hotel industry in Jakarta and how demographic factors influence these perceptions. The structure equation model (SEM) was implemented to find each variable influence. Samples were taken from hotel employees who work in five-star hotels in Jakarta with 221 respondents (response rate 78.9%). The results indicate that CSR activities significantly influence employee engagement and corporate reputation, and at the same time, employee engagement significantly influences corporate reputation.*

Keywords: *antecedent, sustainability activities, employee engagement, corporate reputation*

INTRODUCTION

Data of Jakarta's culture and tourism division in 2011 have shown that there were 108 hotels of the hospitality industry in Jakarta. So, it is not surprising that the hotel industry has been ranked as the second largest contributor to economic growth in Jakarta under the manufacturing industry (Jakarta Central Bureau of Statistics, 2011). Hotel has become an important role in the business world as it provides social and economic benefits due to its activities and jobs it creates. Nevertheless, a hotel also has an unfavorable impact on the natural, social, and economic environment as contributing to climate change, air, and water pollution, as well as other socio-economic issues (Grasbois, 2012).

Therefore, the hospitality industry should be able to cope with such problems as a part of its business ethics. One way to reduce the negative impact of the hospitality business activity is to conduct activities related to CSR. In the development of the hospitality industry, they are required to conduct their activities in an ethical manner to boost their reputations (Jung, Namkung, & Yoon, 2010). Research conducted by Jung et al. (2010) revealed that the hotel manager, who works ethically, would make more proactive decisions. As a consequence, the interactions of managers and employees in particular, are generally very influential on the hotel's reputation. Karani (2011) stated that in addition to enhancing the reputation, CSR activities can also affect patterns of work and a sense of ownership to the employees of the hotel where they work, so they become more productive. Sense of belonging, ownership, and building the company's reputation, is not separated from the perception of the workers themselves. Thus, perception that arises is influenced by demographic factors.

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RESEARCH QUESTION

This study aims to answer the following questions:

(1) How demographic factors significantly influence Sustainability Activities, corporate reputation, and employee engagement, in terms of age, sex, income, education, generation?

(2) Does Sustainability Activities significantly influence corporate reputation?

(3) Does Sustainability Activities significantly influence employee engagement?

(4) Does employee engagement significantly influence corporate reputation?

Literature Review

Sustainability Activities

Sustainability is the continuing commitment by business to act ethically and contribute to economic development of the local community or society at large, along with an increase in the living standards of workers and their entire family (Kotler & Lee, 2005). The international finance corporation has defined sustainability as: the commitment of business to contribute in sustainable development, their representatives in the local community, and largely improving stakeholders' quality of life, in that are good for the business and development as well.

Stakeholder Theory

The beginning of CSR concept has been known since the early 1970s, which is commonly known as stakeholder theory—that means as a collection of policies and practices relating to the stakeholders, values, compliance with legal requirements, respect for the community and the environment, as well as commitment to the corporate world to contribute to sustainable development (Freeman, 2002). The survival of the company depends on the support of stakeholders and the support should be sought so that the activity of the company is to seek the support; social disclosure is considered as part of the dialogue between the company and stakeholders (Gray, Kouhy, & Lavers, 1995). The company is not only an operating entity for its own sake, but for the support of stakeholders; companies must provide benefits to the stakeholders (Gray et al., 1995).

Corporate Reputation

According to Fombrun (1996), the theory initiates the reputation of corporate identity as the first point that is reflected through the company's name and other views, for example, from annual reports, brochures, product packaging, office interiors, employee uniforms, advertising, media, written materials, and audio-visual. He defined corporate reputation as a perceptual representation company's past action and future prospects that describe the firm's overall appeal to all of its key constituents when comparing with other leading rivals. According to him, there are four sides of a reputable company that need to be addressed: credibility (in the view of investors), trustworthiness (in the eyes of employees), reliability (in the view of consumers), and responsibility (in the view of community). A strong reputation has strategic implications for a company.

Employee Engagement

Employee engagement has been used extensively and has become a popular term (Saks, 2006). Further, He also stated that there is still a bit of academic and empirical research on the topic which has become so

popular. He revealed that employee engagement is the emotional connection and high intellectual owned by the employee towards his job, organization, manager, or co-worker who affects increasing discretionary effort on the job. Employee defined as a unique and distinct construct containing components of cognitive, emotional, and behavior related to individual performance. Furthermore, engagement can be distinguished from several related constructs, such as organizational commitment, organizational citizenship behavior, and job involvement (Saks, 2006).

Demographic Factors With CSR, Corporate Reputation, and Employee Engagement

Age, sex, income, education, and generation have significant impacts on organizational commitment (Akintayo & Abu, 2006). Research conducted by Rehman, Yousaf, and Zia (2010) showed that there is a significant relationship between the organizational commitment and job satisfaction with CSR. Dan (2010) reported that job satisfaction has a positive effect on CSR and employee engagement.

- **Age.** Research conducted by Akintayo (2003) reported that the turnover intention has a negative correlation with age. Ali et al. (2010) revealed that there is a significant correlation between organizational commitment to CSR and the desire of turnover.

- **Sex.** Based on the results of the study conducted by Akintayo and Abu (2006), the perception of employees on job satisfaction is influenced by the sex. Sex also affects on the way company's treats the employee (Alfermann, 2011).

- **Income**. In the hospitality business, income plays important role in conducting the quality of ethical standards. It will affect the rising and declining occupancy rates and the reputation, in addition to the direct impact on the customers' perception (Jung et al., 2010).

- **Education**. The level of education has a significant impact on organizational commitment (Akintayo & Abu, 2006). Akintayo and Abu (2006) stated that graduated workers have a higher commitment to the organization than the non-graduated ones.

- **Generation.** Research conducted by Akintayo (2003) reported that generation X, Y and Z has different proximity to the employees' turnover and organizational commitment. Potential causes of this situation are age, length of work, career satisfaction, and desire to turnover.

Sustainability Activities and Corporate Reputation

Hoffman (2011) assumed that the company requires recognition and social acceptance for the long-term viability (business) with emphasis on the emotional aspects of reputation building. A simple scheme tends to intensify the perception of higher emotional reactions. On the other hand, according to Hoffman, secondary positive affective reaction is a response to events which may be unexpected.

Sustainability Activities and Employee Engagement

Ma (2011) concluded, if companies execute CSR initiatives based on the values of the company, the company has the power to improve the employee recruitment, satisfaction, and retention. The Massachusetts business roundtable (MBR) supports this idea by saying that the values of CSR activity of the company can become a part of the employee value proposition.
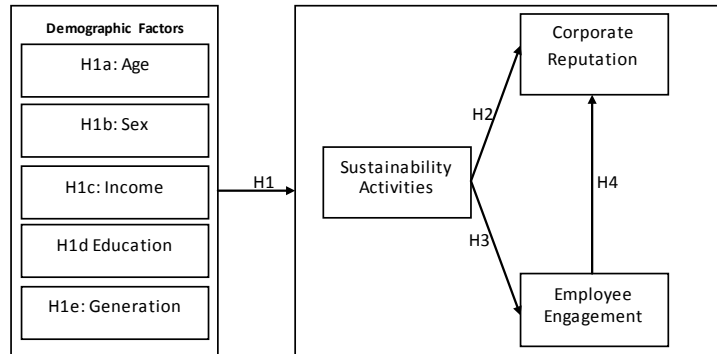
Employee Engagement and Corporate Reputation

The role of employees is essential in the creation and maintenance of the company's reputation (Cravens & Oliver, 2006). Cravens and Oliver (2006) through the model, indicated that the identity of the company is a starting point in the creation of two things: the company's image and reputation of the company. Corporate

identity consists of goals, values, strategy, and organizational culture (Cravens & Oliver, 2006). Through communications to both internal and external stakeholders, the company can create a reputation.

Research Framework

Perspective of hospitality business in Indonesia as a basis to this study is presented as follow:

Research Hypothesis

H1: Demographic factors significantly influence SA, corporate reputation, and employee engagement.
H1a: Age significantly influences SA, corporate reputation, and employee engagement;

H1b: Sex significantly influences SA, corporate reputation, and employee engagement;

H1c: Occupation significantly influences SA, corporate reputation, and employee engagement;

H1d: Education significantly influences SA, corporate reputation, and employee engagement;

H1e: Income significantly influences SA, corporate reputation, and employee engagement.

H2: SA significantly influences corporate reputation.

H3: SA significantly influences employee engagement.

H4: Employee engagement significantly influences corporate reputation.

RESEARCH METHODOLOGY

This research uses exploratory quantitative method, using surveys and hypotheses test. The development of questionnaire refers to the various studies that have been conducted previously. The CSR variables of Maignan and Ferrell (2001) were adopted with the item statements consisting of four dimensions of CSR (economic, legal, ethics, and philanthropy). Corporate reputation questionnaire was adopted from Helm (2007), and the questions for employee engagement were adopted from Alfermann (2011). This study uses primary data by purposive random sampling and the samples are five-star hotels located in Jakarta, Bandung and Surabaya. In total, there are 105 hotels in Jakarta. By using Slovin formulation (E-value of 20%), at least 21 five-stars hotels can be used as samples. The Population of employee are 12,676 people, the number of samples can be determined by using the Slovin formulation, can be decided 127 people as the sample in this study

Based on the number of respondents who have been determined with the non-probability random sampling techniques, the sampling techniques allotment (quoted sampling) had been used. 15 questionnaires mailed to sample hotel of 280 questionnaires. A total of 131 out of 280 questionnaires were returned and were able to be used in this study, so that response rate of the study was 78.9%.

THE ANOVA TEST RESULT

Procedure of data processing is performed to test differences in the mean values between two or more groups. The value of average difference being tested can be caused by the independent variable. The data analysis method used in this research is the SEM using LISREL software version 8.8. Result and Discussion ANOVA Test Result ANOVA test results for each of the demographic variables are as follows (Table 1).

Table 1 ANOVA Test Results for Demographic Factor

Demographic Factor	Variable	p-value standard	p-value result
	SA		0.852
Age	CR	< 0.05	0.103
	EE		0.029
	SA		0.019
Sex	CR	< 0.05	0.003
	EE		0.27
	SA		0.201
Income	CR	< 0.05	0.03
	EE		0.075
	SA		0.012
Education	CR	< 0.05	0.492
	EE		0.09
	SA		0.537
Generation	CR	< 0.05	0.49
	EE		0.01

Structural Equation Modelling

Based on the output of the SEM analysis (LISREL series 8.8), here are the overall values obtained by testing the model in Table 2.

Table 2. Goodness of Fit Model

Kinds of measurement	Measurement	Result	Standard value	Conclusions
	Chi-square	148.62		Goodness of fit
	p-value	0.14	*p*-value > 0.05 close to 0.1	
Absolute fit measures	GFI	0.93	> 0.9 close to 1	Goodness of fit
	RMR	0.020	< 0.05	Goodness of fit
	RMSEA	0.025	< 0.08 close to 0.1	Goodness of fit
	AGFI	0.9	> 0.9 close to 1	Goodness of fit
	NNFI/TLI	1.00	> 0.9 close to 1	Goodness of fit
	NFI	0.98	> 0.9 close to 1	Goodness of fit
Incremental fit measures	CFI	1.00	> 0.9 close to 1	Goodness of fit
	RFI	0.97	> 0.9 close to 1	Goodness of fit
	IFI	1.00	> 0.9 close to 1	Goodness of fit
Parsimonious fit measures	CMIN/DF	3.866	Lower level: 3 Upper level: 5	Goodness of fit

Hypothesis Testing After using the ANOVA for demographic factors, the results of p-value for each demographic factor can be seen in the Table 3.

Table 3. Hypothesis

Demographic Factor	Variable	p-value standard	p-value result	Recommendation
	SA		0.852	Not significant
Age	CR	< 0.05	0.103	Not significant
	EE		0.029	significant
	SA		0.019	significant
Sex	CR	< 0.05	0.003	significant
	EE		0.27	Not significant
	SA		0.201	Not significant
Income	CR	< 0.05	0.03	significant
	EE		0.075	Not significant
	SA		0.012	significant
Education	CR	< 0.05	0.492	Not significant
	EE		0.09	Not significant
	SA		0.537	Not significant
Generation	CR	< 0.05	0.49	Not significant
	EE		0.01	significant

2. TEST RESULTS

According the results, thus, it can be stated that:

Hypothesis 1, H1a: Age only significantly influences employee engagement;

      H1b: Sex significantly influences sustainability activities and corporate reputation;

      H1c: Income significantly influences corporate reputation;

      H1d: Education significant influences sustainability activities;

      H1e: Generation significantly influences employee engagement.

While to test Hypothesis 2, Table 4 can be seen.

Independent	Dependent	t-result	t-table	Loading	Recommendation
SA	CR	4.40	1.96	0.59	Significant

Thus, H2—CSR significantly influences corporate reputation, can be confirmed

Independent	Dependent	t-result	t-table	Loading	Recommendation
SA	EE	6.40	1.96	0.43	Significant

In Table 5, H3—CSR significantly influences employee engagement, can be confirmed.

Independent	Dependent	t-hitung	t-tabel	Loading	Recommendation
EE	CR	4.14	1.96	0.46	Significant

In Table 6, H4—employee engagement significantly influences corporate reputation, can be confirmed.

Discussion

Demographic factors with CSR, corporate reputation and employee engagement (H1).

Age (H1a).

The demographic results indicate that employees who are tied to their job are over 40 years old. It is associated with cognitive and emotional components of own employees perception who have been working in the hospitality industry for a long time. Some respondents said that for those who are older than 40 years no longer desire to get out of the hotel in which they work and they just want to stay put until retirement. Different results are shown for those between the ages of 18-28. The younger ones are less committed due to the long working period at the hotel. So they don't sense the cognitive and emotional commitment to the hotel. Less committed can also come from job enrichment and task accuracy (role fit) that have a positive predictor for meaningfulness that is not perceived by young who have less experience.

Sex (H1b).

The results of research of Jung et al. (2010) say that the ethical manager will make more proactive decisions and enhance the reputation of the hotel. This corresponds to a position of a manager as the mediator between the company with the employees and the community. Thus, it can be explicitly seen that the manager has an important role in the implementation of the hotel's CSR. The manager is the one who knows and understands the needs of the day-to-day operations, especially for employees.

For the concept of CSR, it is inevitable that the senior manager must be able to define the long-term strategies, while the managers are the executors of the concept. As for the reputation, to compete in hospitality industry, a senior manager should be maintained the reputation of the hotel.

Income (H1c).

The results of research conducted by Karani (2011) showed that CSR influences the desire of employees to work in a hotel which has a good reputation. A good reputation comes from good employees who have gone through a good recruitment system. Each division has a function with different goals in the hotel. The results showed that the divisions which have a significant effect on the reputation of the company are human resources and general affairs. It is based on the function of HR itself as part of the employee recruitment process. So usually the appearances of recruiters (HR) will be the initial reflection of the impression which is owned by the hotel itself. Good HR personnel appears to be neat, polite, friendly, and qualified, the same will also be reflected on the employees of the hotel.

Education (H1d).

The level of education has a significant impact on organizational commitment (Akintayo & Abu, 2006). The results of these studies indicate that workers who have a bachelor's degree have higher commitment to the organization compared to their peers who don't have it. For the category of education, it is almost the same as the category of office/position; a manager has usually a minimum education level equivalent to a bachelor's degree. This is because the manager is not only required to just run the operations of the hotel, but it's also required to teach ethics for its employees. Business ethics stresses that managers and corporations are responsible for implementing ethical principles in their organization and they use moral bases in making decisions, policies and strategies, and dealing with other general issues of the company. In the context of CSR, managers act as moral actors and are responsible for the conduct of responsibility (discretion) on their existing management in all aspects of social responsibility to produce results that are socially responsible.

Generation (H1e).

Similar to the demographic factors of age, it has been noticed that employee engagement is affected by how long the employee worked at the hotel. Long work affects employee's perceptions of the hotel where they work. How they treat their employees can determine the employees' sustainability commitment to the

hotel where they work. Akintayo (2003) reported that the desire of the employee's turnover has a negative correlation with organizational commitment. So it can be said that the larger the organization's commitment to the welfare of employees, the lower the desire to turnover becomes. The potential causes are age, length of work, and career satisfaction.

Sustainability Activity and Corporate Reputation (H2).

For hotels, reputation is very important and crucial for their survival in the competitive business world. The results of the study conducted by Inoue and Lee (2012) showed that CSR can help build and strengthen the company's reputation when consumers perceive the company as an ethical company. Maintaining a good reputation is very important for any hotel, because bad reputation is likely to have an impact on undesirable matters such as the decline of occupancy rates or the lack of customer wanting to come back to the hotels (Inoue & Lee, 2012). Besides consumers, the good reputation of the company can also affect the perception of workers. A key feature in this connection is how organizational culture affects employees' perceptions of corporate image. Once the identity and image of the company are formed, the second thing is to deal with matters that can affect a company's reputation.

Employees are important stakeholders for the company. Therefore, whether or not the company's reputation depends on the employees' perception of the organization/company as mentioned, CSR can be considered as a medium for the cause or can form the corporate culture.

Sustainability Activities and Employee Engagement (H3).

Employee engagement with the company is one of the factors that can increase employee's loyalty and productivity. In improving employee engagement, CSR could be one of the tools to achieve this goal. CSR activity based on the company's values aimed to improve employee commitment. CSR initiatives can be derived from the value of the company's vision, mission, and culture, as well as all employees who are a part of it. Therefore, CSR can have an impact on employee engagement (employee engagement) to a certain extent and instill pride in the company's employees. Increased CSR initiatives progressively raise the amount of investment from the company in the form of business and money, and they also pay attention to current employees of the company's reputation with regard to CSR activities in the corporate workplace. If hotels conduct CSR initiatives based on the values of the company, the company has the power to improve the employee recruitment, satisfaction, and retention. The results of the study showed that the company's CSR programs are connceted with values of the company itself, and they further relate to employees. The benefits of this relationship are to help the company achieving its goals.

Employee Engagement with Corporate Reputation (H4).

The role of employees is essential in the creation and maintenance of a company's reputation. Corporate identity is a starting point of corporate image and reputation. Corporate identity consists of goal, value, strategy, and organizational culture. The employee, which is the core of the company, is a "tool" in terms of creating a company's reputation. They must support the values, goals, and strategies of companies that are creating a culture to maintain a positive corporate reputation. The good reputation of the company can increase its profits over time. The company's reputation can have an impact on financial performance, so it must be actively managed within the organization.

Employees are the first ones meeting the customers, suppliers, and other key partners in person, and their actions may affect the company whether they are positive or negative. An important part of the process of maintaining the company's reputation is the training and education of employees. Managers at

various levels in the organization have an important role in communicating with employees to inform the importance of enhancing the company's reputation.

Managers monitor, direct, and evaluate the workers who are empowered to build a reputation and who are beneficial for the organization. An important component in the control system of management of any organization is a system of incentives used to encourage managers and employees to achieve company goals. Without a good incentive system, employees may not have the motivation or knowledge required to contribute to this goal. This, in turn, leads to the achievement of company performance and can generate sustainable competitive advantage for the company.

CONCLUSIONS

Based on the ANOVA test, the results show that the demographic factors that have a significant relationship with CSR are job title/position and education. The issues having significant relationships with corporate reputation are job title/position related to the division. Meanwhile, the issues that have a significant relationship with employee engagement are age and years of work. Based on SEM, the results show that CSR has a significant relationship with the corporate reputation and employee engagement.

Meanwhile employee engagement has a significant relationship with corporate reputation. Limitation of this study was that it had been conducted only 13 five-star hotels in Jakarta with the data collection period of one month (June 1 to 30, 2012) so that the results of the study can't be generalized. The study had also only been based on employee perceptions, which could be different from other's perception. Some suggestions for the next study are the need to perform an initial screening associated with employees' perceptions and understanding of CSR by conducting pre-test or applying the method of focus group discussion. In-depth study can be conducted by specifying particular respondents, such as manager or director.

However, further research may also include variables, such as job satisfaction, organizational level of commitment, or may expand the respondents, for example, consumers, suppliers, and shareholders.

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CHALLENGES FOR VIETNAM'S HUMAN RESOURCES ON THE THRESHOLD OF THE INDUSTRY 4.0

Le Thi Mai Anh[*]

ABSTRACT: *Industry 4.0 which started off as Germany's brainchild is expected to minimize the labor cost advantages of traditional low-cost locations, making it attractive for manufacturers to bring previously offshored jobs back home. The revolution will require more 'talented' workers who can adapt to technology rather than traditional 'skilled' workers. Manual workers will face many disadvantages. Although Vietnam has been recognized as a country with abundant labor resources, backed by the young population. However, many big international organizations in the country still find themselves in difficult situation to recruit a sufficient amount of skillful staffs. Therefore, the shortage of quality employees is one of the biggest disadvantages of Vietnam's human resources market. By using secondary data, the paper sheds light on the challenges of Vietnamese human resources in the context of Industry 4.0. From the results of this research, the author also offers some suggestions to improve the quality of human resources in Vietnam in the industrial revolution.*

Keywords: *Industry 4.0, human resources, workers.*

1. INTRODUCTION

The fourth Industrial Revolution (Industry 4.0) is an opportunity to fulfill the aspirations for a prosperous country. Like other nations, Vietnam is a late comer so with lessons learned from other nations we can take a short cut. We will be able to utilise opportunities presented to us while bypassing certain stages of development. However, disruptive changes to business models will have a profound impact on the employment landscape over the coming years. Many of the major drivers of transformation currently affecting global industries expected to have a significant impact on jobs, ranging from significant job creation to job displacement, and from heightened labour productivity to widening skills gaps. In many industries and countries, the most in-demand occupations or specialties did not exist 10 or even five years ago, and the pace of change is set to accelerate. In such a rapidly evolving employment landscape, the ability to anticipate and prepare for future skills requirements, job content and the aggregate effect on employment is increasingly critical for governments, businesses, and individuals in order to fully seize the opportunities presented by these trends—and to mitigate undesirable outcomes. Given high dependence on low - skilled workers in Vietnam, re-skilling or up-skilling will be required by the country to make ready for the new requirements. The development of science and technology can lead to mass unemployment, as a large number of Vietnamese labourers will not be able to adapt to new technologies, resulting in a bigger gap between the rich and the poor, and ultimately in potential social conflicts.

In the first part, the paper will discuss the human resources in Industry 4.0, and the situations of Vietnam's human resources in the period of 2012 – 2017. After that, the paper will provide some suggestions to deal with the challenges for Vietnamese labors.

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2. METHODS

The paper uses secondary data from the General Statistical Office, World Economic Forum, in which, human resources data are collected from 2012 to 2017. The purpose of this article is to determine what has been researched so far about the effects of Industry 4.0 on Vietnamese human resources. To achieve this objective, a comprehensive review of journal articles, edited volumes, books, conference papers, and other materials were reviewed.

3. RESULTS

3.1. The human resources in Industry 4.0

Industry 4.0 is believed as the integration of the Internet of Things (IoT), cloud computing, advanced data processing and other technological advances into the heart of production and manufacturing systems. It allows the merging of the virtual and embedded production process physical worlds through cyber-physical systems, enabling intelligent objects to communicate and interact with one another.

Industry 4.0 brought a new era of technology automation, remotely control robotics connected with machine learning workstation, artificial and augmented reality, self-control robotics which requires minimal input from operators, etc.

One common terminology is "smart factory" – the concept of establishing a connection between humans, machines and objects via the internet, thus merging the cyber systems with the physical, industrial world, enabling people to make decentralised decisions in real time. To simply put, a smart factory has the capability to take into account all the data and pinpoint the exact uncertainties within the entire supply chain, from the suppliers to the customers. Smart factory responds to requests and adapts itself in real time, provides a fluid and constant communication from the market to the production line, thus offers a competitive edge for any clientele.

Industry 4.0's primary appeal lies in its ability to act as an economic game-changer which would open up a myriad of opportunities for companies to revamp or create entirely new offerings and business models. Technologies such as mass customization and 3D printing offer greater flexibility to companies to meet varied demand from their customers, who are increasingly favoring more flexible and customizable outputs over standard product offerings.

Adoption of Industry 4.0 will result in elimination of lower skilled jobs through automation and the increase in productivity could result in an overall reduction in the number of jobs available. With the increased automation levels, Industry 4.0 will result in shifting of key value adding activities back to the developed economies which will result in further reduction of jobs in the low cost manufacturing countries.

The Fourth Industrial Revolution is interacting with other socio-economic and demographic factors to create a perfect storm of business model change in all industries, resulting in major disruptions to labour markets. New categories of jobs will emerge, partly or wholly displacing others. The skill sets required in both old and new occupations will change in most industries and transform how and where people work. It may also affect female and male workers differently and transform the dynamics of the industry gender gap.

As per Future of Jobs survey conducted by World Economic Forum, it is expected that a number of skills that are not considered to be significant in today's context will form one-third of the desired core skill sets of most occupation in 2020. Such a shift in the skill requirement is expected with increased digitalization. The ability to work with data and make data-based decisions will play a pivotal role in the jobs of future.

Table 1. Scale of skills demand in 2020

Cognitive Abilities	15%
Systems Skills	17%
Complex Problem Solving	36%
Content Skills	10%
Process Skills	18%
Social Skills	19%
Resource Management Skills	13%
Technical Skills	12%
Physical Abilities	4%

Source: Future of Jobs Survey, World Economic Forum

With regard to the overall scale of demand for various skills in 2020, more than one third (36%) of all jobs across all industries are expected by the respondents to require complex problem-solving as one of their core skills, compared to less than 1 in 20 jobs (4%) that will have a core requirement for physical abilities such as physical strength or dexterity. However, along with the impact of disruptive changes on these sectors, it is anticipated that complex problem solving skills will become somewhat less important in industries that are heavily technical today—such as Basic and Infrastructure and Energy—in which technology may automate and take on a bigger part of these complex tasks going forward, and will ascend in those industries, such as Professional Services and Information and Communication Technology, that are expected to become more complex and analytical due to these trends.

With such a shift in skill requirements, the basic educations level and teaching models are bound to change. Only countries which are able to improve the overall enrolment levels and stay updated with the evolution of the industry technology will continue to stay competitive as manufacturing hubs.

3.2. The current status of human resources in Vietnam

Vietnam is considered as a country with demographic bonus in 2017, with a population of about 95.145 thousand people and the estimated population of working age of 55.162 thousand people.

Table 2 shows that the number of working-age people of Vietnam in the period from 2012 to 2017 increased from 53.698 thousand people to 55.162 thousand people (an increase of 1.464 thousand people), the average increasing of 1.1 million people per year. This can be seen as a period of "golden population" of Vietnam. Golden population structure is enormous strength contributing to promoting economy-society development. This opportunity appears only once during the history of the development of a country and lasts a maximum of 40 years. According to calculations by population experts, Vietnam finished "young population structure" period in 2017, entered the "golden population structure" period and will reach peak around 2025.

Table 2. Vietnamese population in the period of 2012-2017

Unit: 1000 people

Year	2012	2013	2014	2015	2016	2017
Population	88.776	89.716	90.400	91.400	92.650	95.145
The number of working age people	53.698	54.370	54.426	54.644	54.745	55.162

Sources: General Statistics Office, Vietnam

Taking advantage golden population structure will contribute to create the volume of enormous social wealth, create great value for the future accumulation of the country. In other words, if taking advantage of this opportunity, it will create tremendous growth of social economy, promote the comprehensive development for Vietnam. This can be seen in the phenomenal growth period of Japan, Korea, Singapore and fast development

period of the new industrial countries associated with the period of "golden population structure". This is young labor source having advantages such as good health, activeness, reception to new things, grasp the echnology quickly, easily moving. If they are methodically trained, equipped with the necessary knowledge and skills, they will promote and encourage the ability of the process of international economic integration. This is a very favorable factor for economy-society development and contributes to increase labor productivity of Vietnam.

However, according to the report on Global Competitiveness 2017 (WEF,2016), Vietnam university – level education and training was assessed at the intermediate level, ranking 83 out of 138 countries, extremely lower than other regional coutries like the first position of Singapore or the 41st, 62nd, 63rd of Malaysia, Thailand, and Indonesia respectively.

Based on the work force classified by qualification in Vietnam, untrained labors accounted for 80% of employees, less than 10% of them completed universities and higher education. The situation of human resource is a huge challenge to Vietnam companies to transfer from resource – intensive to technology – intensive with renovation.
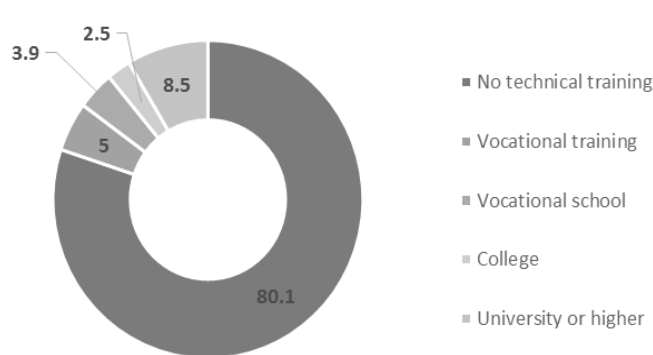

Fig.1. Vietnam's employment structure by professional level (%)

Source: Geneneral Statistics Office

Moreover, about 38% of hired-employees were unskilled, nearly 40% were working in primary sectors such as personal services, security, and sales (16.6%); trained labors in agricultural and forestry and aquatic sector (10.3%); craft and other related jobs (12.8%). On the contrary, the rate of skilled and high-qualified labor was only 10%. The ratio implies that it will be difficult for Vietnam to take advantage of Indutry 4.0's achievements if there are no significant changes in human resources (table 3).

Table 3. The number of labours and occupational structure of employed people in Vietnam, 2017

Occupation	Number of people employed (thousand people)	Percentage (%)
Total	53.302,8	100
Leaders	555	1,0
Advanced technical expertise	1.639	3,1
Staff	991,9	1,9
Personal services, security guard, sales staff	8.861,4	16,6
Skilled workers in agriculture, forestry and fishery	5.470,9	10,3
Craftsman	6.827	12,8
Mechanizer and machine operator	4.921,6	9,2
Simple labor	20.247,8	38
Others	129,2	0,2

Source: Geneneral Statistics Office (GSO,2017)

3.3. The challenges of Vietnamese human resources

Vietnam has realized the importance of skill development in achieving economic growth in the future and have taken various measures to bridge the skill gap. From increasing education expenditure to increasing network of vocational trainers by launching nation-wide programs, initiatives have been launched to make the labor force industry-ready.

- Vocational education and skill development in Vietnam is primarily supply driven i.e. the skills imparted by training institutes may not be in line with the industry requirement.

- Lack of access to vocational education has also contributed to the skill gap that exist today because a number of students are unable to pursue vocational education as sufficient number of vocational schools and training institutes across the country does not exist.

- Lack of industrial training is another important challenge. Vocational education in Vietnam is primarily introduced in upper secondary level. At present, the vocational education comprises of courses in vocational schools while apprenticeships are not included as mandatory part of education programs.

- Vietnam also faces challenges in terms of having inflexible and outdated curriculum, shortage of qualified teachers and trainers and unavailability of proper, up-to-date infrastructure (building and equipment).

3.4. Some suggestions for Vietnamsese government to improve the quality of human resources

Vietnam needs drastic measures to reform the basic, comprehensive education system and training to meet the requirements of industrialization and modernization of the country in the international integration. Renewal of education and training systems in terms of:

- Reorganize education and training network, rearrange the national education system both in the scale of training, career structure, training facilities and plan the network of vocational education, university education associated with the planning of economic development — regional society, local and national.

- Conduct training follow the need of society, increase practice time, focus on content, skills learners, businesses and society need. Diversify training methods. The training institutions should collaborate with businesses, link theory with practice, encourage employers to participate in formulating, adjust and implement training programs and competency assessment learners.

- Develop specific measures aimed at economic restructuring in Vietnam in the direction of industrialization and modernization, such as increasing the percentage of the GDP value of the industry, constructing and trade — service breast; declining relative rate of value in GDP of agriculture, forestry and fisheries; and deleting the distance in urban and rural areas, the plains and the mountains, in order to improve the living standards of the rural population.

- Enhance labor productivity. Vietnam should focus on scientific and technological innovation, especially invest, develop auxiliary industries. Increasing investment for scientific research, manufacturing, improving machinery and equipment to enhance labor productivity, reducing manual labor, promote international cooperation, technology transfer and the developed country; Catch up with the technological level of the countries in the region and around the world, requiring speed technology innovation for ourcountry right now at about 20%/year.

CONCLUSION

In a nutshell, the biggest challenges faced by Vietnam in participating and benefiting from the fourth industrial revolution are the low skill levels of its labor force and poor investment in science and technology. It's

time for Vietnam to confront and overcome these challenges to avoid being left behind. This means increasing investment in science and technology and renovating education to develop a qualified workforce capable of receiving and applying advanced scientific and technological achievements in order to increase labor productivity.

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TRAINING HUMAN RESOURCE TO GENERATE INNOVATION: SOLUTION FOR DEVELOPING ORGANIZATION'S PERFORMANCE

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ABSTRACT: *In the globalized world with highly interconnected processes, organizations now have to cope with an increasing number of challenges. Facing competition from all over the globe, innovation capacity has become more and more essential in each firm, ensuring the sustainable development in a long run. In this paper, the authors will focus on presenting several concepts including human resource management, training human resource, and innovation; discussing the value of training in generating innovation and the relationship between employee training and organizations' innovation performance. This paper serves as a theoretical foundation by pointing out the relevance of training human resource and innovation capacity for organizations and giving some suggestions on innovation training programs for organizations as well as the ways to measure the effectiveness of training.*

Keywords: *human resource management; training; innovation; organization's performance*

1. INTRODUCTION

In today's economy, there is an increasing conviction that the investment of an organization in innovation is an important factor that can strongly affect an organization's competitive advantage through overall improvements in performance. Marsh (1996) states 'Companies that introduced new technologies at least once a year were three times as likely to forecast an increase, or rapid increase in turnover, than those that never introduced new technology'. In other words, innovation helps with the bottom line. How to generate innovation is a hard question for all managers. To address this issue, Rosli and Mahmood (2013) and Nicholson et al. (1990) indicate that human resources management (HRM) with an incomparable source of competitive advantage is key to innovation. Rosli and Mahmood (2013) also conclude the significant relationships between training as one aspect of HRM, innovation and firms' performance.

The main objective of this paper is to identify the relationship between training human resource management and generating innovation in organization in order to improve organization's performance. This paper also aims to present how enterprises organize training programs. The following research questions will be answered: What is human resource management, what is training human resource and what is innovation? What are the roles of training human resource in generating innovation for organization? How do enterprises organize innovation training programs?

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2. DISCUSSION

2.1. Human resource management, training human resource and innovation

2.1.1. Human resource management

Human resource management is a part of management dealing directly with people whereas management includes marketing, management information systems, production, research and development, and accounting and finance. The focus of human resource management is on managing people within the employer – employee relationship. Specially, it involves the productive use of people in achieving the organization's strategic business objectives and the satisfaction of individual employee needs. Because the purpose of human resource management is to improve the productive contribution of people, it is intimately related to all other aspects of management. Delaney and Huselid (1996) find a positive association between HRM practices and organizational performance. Their research showed that staff selection, employee skills, employee motivation, structure of jobs and training are positively related to organizational performance. Islam and Siengthai (2010) further confirm the positive relationship between human resource management practices and organizational performance when they examined the impact of human resource management practices have on the performance of enterprises in the Dhaka Export Processing Zone.

After reviewing the research literature, Pfeffer (1998) identify seven dimensions of effective people management that produce substantially enhanced economic performance, including: employment security, rigorous selection, self-managed teams and decentralized decision making, comparatively high compensation linked to individual and organizational performance, extensive training, reduce status distinctions and extensive sharing of financial and performance information throughout the organizations. Harel and Tzafrir (1999) after drawing on empirical and theoretical studies on human resource management practices, identify that recruitment, selection, compensation, employee participation, internal labor market and training as the six of human resource management practices, have a positive relationship with organizational and market performance.

2.1.2. Training human resource

According to Hackett (2004), training is about changing the behavior of employees to maintain or improve the performance of individuals in a direction that will achieve organizational goals. It focuses on providing instruction to develop skills, behaviors, abilities that can be used immediately on the job. Training, in short, can be seen as very much about getting the job done. There are various forms of training: informal and formal training; general and specific training. Informal training consists of learning by doing and guidance from colleagues during work. Formal training has a predetermined plan and format design and can be provided by external instruction or in – house. General training provides workers with skills and knowledge that are transportable between firms, to a lesser or greater extent. Specific training provides workers with skills that are generally of use to only one firm. In practice, there is a continuum between specific and general skills.

Training refers to the process to obtain or transfer knowledge, skills and abilities needed to carry out a specific activity or task; therefore, benefits of training both for employer and employees are strategic in nature and hence much broader (Nguyen and Nguyen, 2017). McNamara (2008) confirms that training involves an expert working with leaners to transfer to them certain areas of knowledge or skills to improve in their current jobs. The goal of training is for employees to master the attitude, skill and knowledge emphasized in training programs and to apply them to their day-to-day activities. It is clear that a comprehensive training program helps in deliberating on the knowledge, skills and behaviors necessary to create competitive advantage and help organizations meet the goals (Peteraf, 1993).

2.1.3. Innovation

Related to innovation, the academic focus on innovation was initiated by the work in 1934 of the economist, Joseph Schumpeter, who defined an innovation as any of the following: (1) the introduction of a new goods, (2) the introduction of a new method of production, (3) the opening of a new market, (4) the conquest of a new source of supply and (5) the carrying out of a new organization of industry (Schumpeter, 1934). He also stressed the novelty outputs aspect which can be summarized as 'doing things differently'. Many authors have followed Schumpeter's lead by associating newness with innovation. For instance, Drago and Wooden (1994) define innovation as the introduction of major new plant, equipment or office technology. Nunes et al. (1993) extend the definition of innovation to include major changes in the product or service. Rogers (1999) extend the definition of innovation to include the major restructuring of how work is done and a reorganization of management structure. Based on their reviews, Crossan and Apaydin (2010) compose a comprehensive definition: Innovation is production or adoption, assimilation, and exploitation of a value - added novelty in economic and social spheres; renewal and enlargement of products, services, and markets; development of new methods of production; and establishment of new management systems. It is both a process and an outcome. Practically, innovation is a process of turning opportunity into ideas (Flynn, Doodley & Cormican, 2003) and it refers to the application of explicit and tacit knowledge assets in holding new processes and products. It may occur in service, design or market (Perez et al., 2012).

2.2. Roles of training human resource in generating innovation for organization

Training, by way of HRM plays an important role in generating innovation.

• Firstly, training can drive the innovation as the incubator of new ideas. It is clear that training enables employee's to master specific skills and abilities needed to be successful. In other words, training helps them to access a chain of new skills, knowledge as well as new ways to work. It is widely acknowledged in management literature that training programs directly influence the quality of organization human capital and help organizations create and develop a unique workforce with expansive knowledge and skills to innovate (Perez et al., 2012). One example to illustrate this point can be found at VIETTEL. VIETTEL, one of the fastest growing telecom operators in Vietnam, had a training program, namely 'initiatives and ideas' in 2011. This year, VIETTEL attracted 406 initiatives and 3224 ideas (more than three times higher than in 2010) that gave VIETTEL benefits worth up to 372 billion VND (Nguyen, 2012). Moreover, through training programs, a learning environment can be created for all employees to share their spark. Wright et al (1994) also make this point because they accredit training as indispensable HRM practice to create, share and use knowledge. From this knowledge, a lot of new ideas that lead to innovations will be creative. That is why Loewe and Chen (2007), Shipton et al. (2005) suggest training is a vehicle for new products, processes and technologies.

• Secondly, training programs help employees recognize the movement of business environment and therefore, engender renewal to adapt with these changes. Without training, it may be difficult to apprehend the changing environmental factors and employees and organization simply continue to do whatever was done in the past. Rosli and Mahmood (2013) note that due to the continuous changing of the economic environment, it is necessary for an organization to respond to the market need through training employees to be innovative. Training programs provide necessary data about the changing environment issues for employees and then they use these data to convert into their information, knowledge (Castellanos & Martin, 2011). This knowledge can be used to make a new suitable change, as an innovation, and develop the inimitability of human resource (Fahy, 2000). Hence, there is no doubt that training, as a fundamental practice has significant value in inspiring innovation.

2.3. Training and an organization ability to innovate

It may be interesting to specify below the relationship between employee training and an organizations ability to innovate. It is a controversial topic that has been researched by many. Generally, training has a positive effect on organizations' innovation (Perez et al., 2012). For instance, Roffe (1999) believes that through training, the organization can build the intellectual capital and use the intellectual capital to stimulate innovation. As previously explained, training is an attempt to improve skills, behaviors and knowledge of employees. These improvements permit employees to quickly accept the new skills in order to innovate. Similarly, Shipton et al. (2005) state that training can expose individuals to new experiences and harness the passion of workforces, consequently, training contributes to innovation performance of an organization. Additionally, other authors consider that innovation in products and services should be gone together with higher level of training (Beugelsdijk, 2008; Marquardt, Nissley, Ozag & Taylor, 2000). It means that employee training can improve organizations' innovation performance. By using Statistics Canada's 2001 Workplace and Employee Survey, Zeytinogly and Cooke (2013) confirm that workplaces that provide more on-the-job training for employees will adopt more new information technology and be more innovative.

There are several different training programs that organizations can use to achieve higher levels of innovation. For example, orientation programs, an attempt to send clear messages and provide accurate information about the organization culture, the job and expectation (Ivancevich & Konopaske, 2013) can be used as the first training program to develop organizations' innovation performance. In such programs, organizations should prepare some materials related to basic knowledge about innovation such as a definition, the necessary of innovation or some common ways to make innovation to help all employees have a perspective on it. Adaptive training is another program which organizations can apply to get great levels of innovation. This training concentrates on teaching employees new skills to face changes and problems (Perez et al., 2002). However, it should be noted that investment in training would not always make higher levels of innovation. Although training has the recognition importance in generating innovation, it does not mean that all training will be applied in the workplace. In case of small and medium enterprises (SMEs), some authors argue that they like external experienced employees recruitment than training internally. More importantly, Perez at el. (2012) study of 139 SMEs and concluded that training has a negative effect on the innovation capacity of SMEs. It can be recapped that in normal, employee training can help organizations improve theirs innovation performance through some programs like orientation training or adaptive training.

2.4. Organizing innovation training programs for organization

As mention above, organizations can choose some training programs like orientation training or adaptive training to train about innovation and generating innovation for employees. An example of a systematic approach is shown in Fig. 1. A three – step approach to training that involves: (1) assessment of training needs, (2) conduct of the training activity and (3) evaluation of training activity.
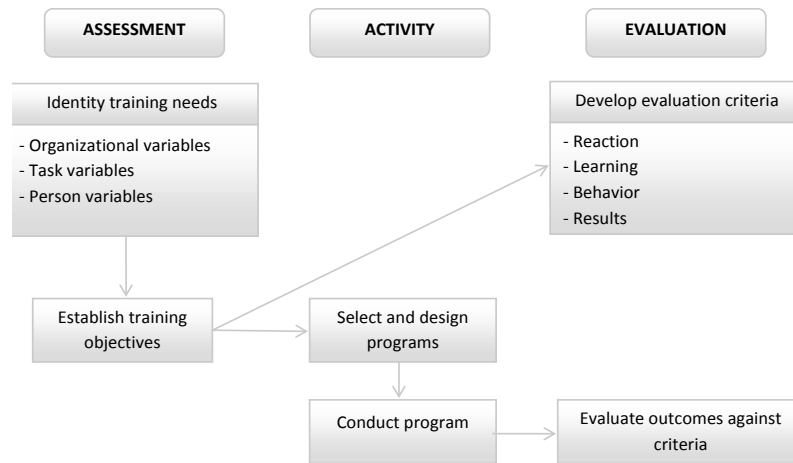
Fig.1. *Suggested systematic training model*

Source: Raymond J.Stone, 2010

In the assessment phase, organizations establish what training is needed, by whom, when and where so that training objectives can be established. The effectiveness of training is enhanced when training activities are preceded by comprehensive analysis. Training needs analysis focuses on identifying what skills, knowledge and behaviors need to be developed, translating them into training objectives and providing direction and purpose for the training effort. It includes organizational variables (in what context will training occur), task variables (what needs to be taught) and person variables (who needs to be trained and why).

In the activity phase, organizations concern with selecting the training methods and learning principles to be employed in a training program. Once objectives are set, the next issue is how to best achieve these objectives. This phase involves considering both content and process. Designing training activities include: location, timing and presenters.

In the evaluation phase, organizations concern about measuring how well a training activity met its objectives. To evaluation training, it is necessary to compare the intended outcome with measurements of actual achievement and to analyze and explain any variances. Kirkpatrick (1983) suggests four ways to measure the effectiveness of training, as the following table:

Table 1. *Ways to measure the effectiveness of training*

Measure	Indicators	How measured
Reactions	• Satisfaction • Enjoyment	• Questionnaire • Interviews • Focus groups
Learning	• Knowledge • Skill	• Pencil and paper test • Oral examination • Work sample • Observation of performance • Performance ratings
Behavior	• Changes in attitudes, behavior, motivation	• Observation of performance • Performance ratings • Third-party feedback

Results	• Productivity • Sales • Quality • Absenteeism • Labour turnover • Accident frequency	• Production statistics • Sales statistics • HR statistics

Source: Kirkpatrick, 1983

3. CONCLUSION

In summary, training has noticeable value in generating innovation because as an incubator, training helps employees enhance their skills, behaviors and knowledge to not only finish their tasks but create new ways to work and adapt with all the environment changing. The greater the focus of organization on training, the greater their innovation is. It is evident that there is no other different way that managers should invest in human resource management, in general, in training, in particular, to build the high levels of workforce and generate innovation.

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SOLUTIONS TO INCREASE THE EFFECTIVENESS OF THE COMMERCIALIZATION PROCESS FOR STARTUPS IN VIETNAM – LESSONS FROM SUCCESSFUL STARTUP COMPANIES IN THE UNITED STATES

Nguyen Thi Van Anh, Le Viet Nga, Dinh Thi Len

ABSTRACT: *Aside from known struggle with financial resources, startups in Vietnam are facing many difficulties in the commercialization of business ideas and concepts and reaching target customers. Most firms fail at this step as they could not convey either the distinctive advantages of their products/services nor the designed message to capture the customers' attention. All these problems could be solved via planned effective marketing activities which entrepreneurs do not pay enough attention to. The paper studies marketing strategies and activities used during the commercialization process of startups in Vietnam to see the problems these companies normally have. Then the authors look at some successful startup companies in the United States to draw out lessons and solutions to help startups with their commercialization process.*

Keywords: *startup; commercialization; marketing strategy; marketing activities; innovation*

1. INTRODUCTION

In recent years, a new type of business has received a lot of attention from the government and the private sector, known as startup. In Vietnam, there is not yet an official legal document that standardizes the concept of startup. However, the Small and Medium Enterprise Support Law in 2017 introduced startups as small and medium-sized enterprises established to implement ideas based on the exploitation of intellectual property, technology, new business model, and high growth potential. In addition, in Decision No. 844/QD-TTg of May 18, 2016 issued by the Government, a National Program was approved to "Support Innovative Startup Ecosystem in Vietnam by the year 2025". Targets are individuals and groups of individuals with startup projects, startup businesses with high growth potential based on the exploitation of intellectual property, technology, and new business models, and business enterprise of no more than 5 years since establishment. From this, we can define *startups as innovative companies, which are in the process of realizing business ideas to create a new kind of product, goods, or service or a new business model that no other companies have used*.

It is believed that startups with innovation and breakthroughs in products, services or technologies play an important role in improving productivity, creating jobs, and greatly contribute to economic growth. Startups also help creating more jobs, increasing personal income, creating more dynamic, healthy competition for the economy, and promoting innovation. According to Echelon Magazine, Singapore, by April 2017, there are about 3,000 startup businesses, 20 venture capital funds investing in innovative startups, 21 startup incubators, and 7 accelerators established in recent years, with annual growth rate of 35% per year. The rate of startup businesses is only 0.5% of the total number of operating enterprises (while in Israel, the proportion is 15-20%). The figure of 0.5% is a lot less compared to other innovative countries and clearly shows that the startup

market in Vietnam is at an early stage (Ministry of Science and Technology, 2017).

Within the startup market, businesses in technology sector account for 34% while e-commerce account for 23%, which shows that high tech companies (IT) are taking up to 60% of total startups (Fig. 1(a)). This reflects the trend of the 4.0 technology revolution with the following characteristics: (1) startup enterprises in the information technology (IT) sector do not need too much initial investment as other fields; (2) enterprises in this area rely mainly on new ideas and creative ways, which is capable of rapid growth; (3) the ease of global connectivity through IT makes it easy for creative ideas to reach the world and vice versa, and businesses can learn from other successful international models; (4) these sectors also easily call for capital from investors.

Aside from the known struggle with financial resources, startups in Vietnam are facing many difficulties in the commercialization of business ideas and concepts and reaching target customers. Most firms fail at this step as they could not convey either the distinctive advantages of their products/services nor the designed value to capture customers' attention. All these problems could be solved via planned effective Marketing activities which entrepreneurs clearly do not pay enough attention to. The paper first identifies the problems relating to marketing activities during the commercialization process of startups in Vietnam, which identifies the need for planned marketing strategies; then, the paper looks at some successful startups in the United States (US) to draw out some key marketing solutions to increase the effectiveness of the startups' commercialization process.

2. THEORY OVERVIEW

According to Rogers et al. (2015), commercialization is the process or cycle of introducing a new product or product method into the market. The actual launch of a new product is the final stage of a new product development, and the one where the most money will have to be spent on advertising, sales promotions, and other marketing efforts. Commercialization of a product will only take place if the following 3 questions can be answer: "when" - the company has to decide on the introduction timing, "where" - the company has to decide where to launch its products, and finally, "to whom" - the primary target consumer group will have been identified earlier by research and test marketing.

Joshua and Scott (2012) shows that a commercialization action plan includes 5 steps:

- *Develop the marketing mix*: the marketing mix is a broad concept which includes several aspects of marketing which all inquire to obtain a similar goal of creating awareness and customer loyalty. The marketing mix is not only an important concept, but a guideline to reference back to when the implementing the price, product, promotion, and distribution.

- *Address the 7Ps*: product, price, place, promotion, people, process, physical environment.

- *Design the product prelaunch planning and preparation*: product business case development and general business planning; commercial roadmap including launch planning, detail resources, and budgets.

- *Budgeting*

- *Managing the product launch and post-launch management (commercialization)*: direct sales into strategic buyers and opinion leaders, contracting of distributors and other commercial partners, ongoing management, expansion, and optimization of the channel; support marketing activities, including conference participation and materials; manage in-field support, professional education and clinical specialists; oversee customer service, warehousing, and product import.

Commercialization is a very important step deciding the successful of business ideas and concepts

and survival of the firm in the coming time. From investment perspective, startups are classified as failure when it provides less than 1 time of return to its investors. A global investment firm based in Boston (US) surveyed 27,259 startups investment from 1990 to 2010 and realized that the percentage of failure for startups was not more than 60%. According to other statistics, up to about 50% of small businesses fail in the first 4 years and 76% of small business owners meet difficulties when dealing with sales and marketing issues to showcase their product.

For a variety of reasons, companies often struggle with the commercialization of new products (and services). The problems include lack of clarity about the value proposition, fear of failure, lack of market knowledge, ineffective business models, and internal conflicts. As a result, companies are unwilling or unable to move forward with commercialization, or their commercialization strategy is ineffective.

Richard (2017) outlined some common problems relating to marketing that startups face:

- Marketing mix and packaging sometimes misleads the estimates of demand from the customers. Companies are being over-optimism and it slowly becomes an expensive prospect to maintain the company and run the operations when compared to the lifetime value of acquiring a customer.

- The cost of acquiring the customer has to be lesser than the price to acquire your customer and what he or she will spend on buying the product in a lifetime. Majority of entrepreneurs fail to see this as a long term goal and just tend to focus on the current sales, therefore, missing this critical aspect of building a relationship with customers.

- Many companies conduct some level of market research, but it is often narrowly focused on certain issues than focusing on all the issues relevant to the commercialization process.

3. EVALUATION OF THE COMMERCIALIZATION PROCESS OF STARTUP COMPANIES IN VIETNAM

3.1. Research Objectives

The paper aims to find solutions to increase the effectiveness of the commercialization process for startups in Vietnam. To achieve this, the following objectives are outlined:

- To look at the perspective of startups' founders and managers relating to marketing strategy and marketing activities;

- To assess the marketing strategy and marketing activities during the commercialization process of startups in Vietnam;

- To identify the problems regarding marketing strategy and activities that startups in Vietnam normally meet;

- To look at some successful startups in the US to analyze the lessons for startups in Vietnam;

- To propose some solutions to increase the effectiveness of the commercialization process for startups in Vietnam.

3.2. Methodology

To achieve the above objectives, the paper used survey research, including mail interviews and personal interviews, to obtain information about marketing activities used during the commercialization process of these companies.

Studied participants included businesses established in the last 5 years (including both profitable and unprofitable ones) as these businesses face more problems during the commercialization process. For companies of more than 5 years of establishment, they have overcome the risk of dissolution, having stable cash flow and stable development. The reason for not limiting the revenue and profit of the business is because the authors want to study the difference between profitable and loss-making businesses.

The sample size is 150 startups, coming from members of the Hanoi Young Entrepreneurs Association (50 companies), Vietnam Young Entrepreneurs Association (40 companies), VINASA – Vietnam Software and Information Technology Services Association (35 companies), and other biotech enterprises (25 companies).

The questionnaire consists of 3 parts: general information about the business; perspectives on marketing and marketing strategies of enterprises; and actual marketing strategy and activities of the company. Questionnaires were sent to companies by mail order and e-mail. In addition, in-depth interview was also carried out to founders of 2 notable startups in Hanoi. The interview questions were similar to the questions in the questionnaires, but as they were asked directly, the respondents responded in more details.

The survey was carried out from May to July, 2017. At the end of the survey, 42 responded and completed the questionnaire, scoring 28%. This rate is much higher than the average response rate of 10% to 15% of the mail survey method, Adam Ramshaw (2017) and Andrea Fryrear (2015). The response rate was particularly high at the Hanoi Young Business Association (30%) and VINASA (36%) who are mainly in the field of technology. As a result, the statistics show that 32% of respondents are in technology, 11% in food, 13% in manufacturing, and so on. This proportion reflects quite well the population of startups in Vietnam (see Fig. 1. (a) and (b)).
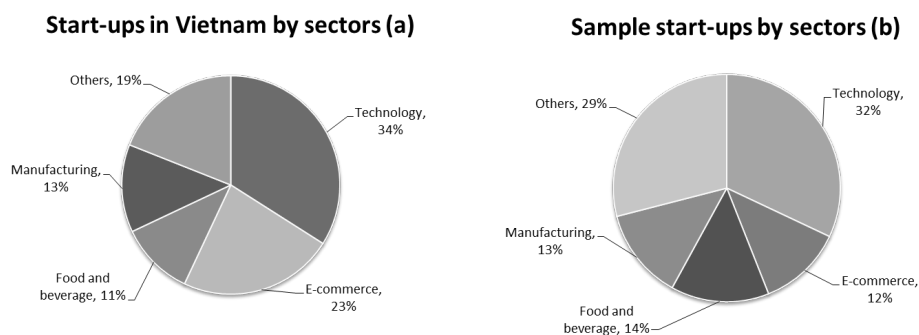

Fig.1. *Structure of startups by sectors in Vietnam (a) and structure of sample startups by sectors (b)*

3.3. Results

Startups in Vietnam understand the importance of marketing activities but mistake marketing strategy as business strategy. Although newly developed, startups in Vietnam are well aware of the role of marketing activities to the success of commercialization process and the survival of the company. 100% of businesses surveyed believe that marketing is important/ very important for the company. However, the number of startups carrying out planned marketing activities only accounts for 72.7%, which does not reflect the previous result found (see Table 1.). The reason was shown clearer via in-depth interviews, pointing out to financial shortage which hinders firms to invest in marketing strategy and activities.

In terms of marketing strategy, only 42% of startups have a separate marketing strategy. The rest (59.9%) has misconception about marketing strategy as they mistake marketing strategy as business strategy. This is the reason why the marketing activities of many companies are not effective, even leading

to the failure of startups. The authors also find that this misconception causes businesses more difficulties when obtain loans from banks or investment from investors as having a clear, feasible marketing strategy is one of the criteria approved for loans or investments from investors/investment funds.

Table 1. Perspective of entrepreneurs on the importance of Marketing

Criteria	Quan.	%
1. Importance of marketing to startups		
Not important	0	0
Important	38	83,4
Very important	6	13,6
2. Carry out Marketing activities		
Yes	32	72,7
No	12	27,3
3. Have Marketing strategy		
Yes	18	40,1
No	26	59,9

When comparing between loss-making and profit generating startups, it is found that 66% of profit-generating businesses have their own marketing strategy or planned marketing activities, compared to 23% of loss-making startups (see Table 2.). The number of profit generating businesses with marketing departments and trained staffs (80% and 62%) is also higher than the loss making businesses (20% and 37%). Thus, it can be seen that startups that are well planned when it comes to marketing have more probability to generate better income and profit.

Table 2. *Comparing between profit making and loss making startups*

Criteria	Quan.	Startups			
		Profit-making: 18		Loss making: 26	
		Quan.	%	Quan.	%
Carry out Marketing activities					
- Yes	32	18	56,3	14	43,7
- No	12	0	0	12	100
Build separate Marketing strategies					
- Yes	18	12	66,7	6	23,1
- No	26	6	23,1	20	76,9
Marketing department					
- Yes	10	8	80	2	20
- No	34	10	29,4	24	70,6
Trained Marketing staffs					
- Yes	8	5	62,5	3	37,5
- No	36	14	38,9	23	61,1

Most startups do not carry out all five steps of marketing strategy planning, focusing mainly on setting objectives and marketing mix design. The authors then analysed each marketing strategy of 18 startups (42%) that have their own marketing strategies. With limited knowledge and human resources for marketing, the contents of marketing strategies of these companies are inadequate. Only 6 out of 18 companies (33.3%) carried out all five steps of marketing strategy (internal and external environment analysis, identify objectives of the strategy, marketing mix design, implementation, and control). Majority

of the businesses (52%) carried out the three steps: internal and external environment analysis, identify objectives of the strategy, and marketing mix design.

According to the survey results, there are only 10 out of 18 startups (55%) conducting internal and external environmental analysis. In contrast, setting objectives for the strategy is one step that our companies all take during the strategy planning. However, only 3 companies have long-term goals such as gaining market share of 23% in 5 years, entering the stock market in the next 10 years, or turnover reaching VND 30 billion by 2020. Most of the targets are on revenue and profit, of which only 10 companies set specific goals with numbers and milestones.

Similarly, designing the marketing mix was implemented by all 18 companies. In order to assess effectiveness of the marketing mix, authors analyse the use of the media that the enterprises used and its effectiveness. Website is the most popular media used by startup businesses (66.7%), the new and more effective media like search engine optimization (33%), social network (38%), online advertising are also preferred. In addition, the mix of a variety of media is very few as most companies use two types of media in their marketing strategy.

About the budget for marketing strategy, 64% of the budget is with the first P (product) of marketing, regarding product research and development, advertising activities account for 28% and other (8%). This shows that startup focus more on developing their ideas into products than the marketing activities in commercialization process. Finally, relating to test and control activities, only 3 out of 18 startups (16%) carry out the test marketing step, however, not frequently. None of these companies ever adjusted their marketing strategies.

3.4. Analysis of result

The above result comes from the following reasons:

• Mistaken marketing strategy as business strategy: Although most startups consider marketing activities to be important, only few (18/44) develop a marketing strategy that is separate from the general strategy of startups. The entrepreneurs or the founding members of startups undertake many tasks at the same time: finance, human resources, marketing, with not enough specified knowledge of marketing strategy planning and activities.

• Lack of trained marketing staffs: Startups have limited number of employees (52.3% of them have fewer than 10 employees), many do not have their own marketing departments but only employees. Moreover, the number of businesses with staff trained in marketing is very low (18.2%).

• Marketing strategy and activities mainly focus on setting objectives and marketing mix design: Most of startups only focus on 3 contents: analysis of internal and external environment, identify the objectives of the marketing strategy, and marketing mix design, without paying attention to implementation of these activities, and testing and adjusting strategies accordingly.

• Each step of the strategy was implemented in an unambiguous manner: as the objectives of the strategy are not specific and clear, not measureable and no milestones, very few companies have long-term goals. Strategic planning did not focus on optimal methods, cost savings while budget is a big problem causing difficulties for enterprises. There was no method to analyze the effectiveness of media use, the reach to customers, or any adjustment for improvement.

4. LESSONS FROM SUCCESSFUL STARTUP COMPANIES IN THE UNITED STATES OF AMERICA

4.1. Google

Google is an Internet company based in the USA, founded in 1998. Its main product is Google search engine, widely regarded as the most useful and powerful search engine on the Internet. Google headquarters is "Googleplex" in Mountain View, California, USA. Google is considered one of the examples of the most successful startup business in the world.

Starting with USD 100,000 worth of investment from Andy Bechtolsheim, co-founder of Sun Microsystems, the number of employees under 10, the data centre is located in a 5-square-meter, rent-a-room motel. But after only a year of operation, the capital of the company was raised to 25 million, the number of employees went up to 50 people. The year 2000 marked Google's index of more than 1 billion web pages and officially became the largest search engine in the world, the number of employees to 150 people. In 2001, Google began to make profits, revenue reached USD 86.4 million, profit USD 6.99 million, the number of employees jumped to about 250 people. In the following years, Google has always achieved impressive figures in terms of revenue, profit, staffing. In 2002, revenue reached USD 439 million, profit of USD 99 million, human resources of about 500 people, sales growth of 409%. In 2003, revenue reached USD 1.47 billion, profit of USD 106 million, human resources of about 1,300 people, sales growth of 234%. By 2016, revenue reached USD 90 billion, profit USD 12.6 billion, employees about 60,000 employees (Google, 2016)

The success of Google comes from the below reasons:

• Google studied the market very carefully, the strengths and weaknesses of competitors, opportunities and threats. They discovered the downside of the search software at the time, such as Alta vista, Yahoo, and Netscape. The search engines AltaVista and Excite only notice the text, without regard to other signals. This leads to unrelated search results. Google developed a page rank algorithm that aggregates multiple signals to display search results so it is faster and more accurate. In addition, the search engine of another company is difficult to use, only people with computer skills can use it. Some companies also require users to pay to use the search engine.

• Outline specific goals for each stage and focus on fewer goals. Instead of putting too many goals for the start, they begin by focusing entirely on the goal of becoming the world's leading search engine. It was not until six years later that Google launched Gmail - its email system.

• The company's marketing-mix strategy is an example of how well-designed strategies are. Google's marketing-mix is an effective combination of product strategy, consistent pricing strategy and segmentation. Popular products, along with promotion strategies. With a simple, easy-to-use search engine product, display exactly what the user is looking for. "Why pay for a hard-to-find search engine while you can use an easy-to-use search engine "without paying for it?"". Google takes advantage of the popularity of the Internet to maximize the company's efficiency in delivering digital products in a short time. With the optimal product, the company determines the minimum cost for advertising. They name a great amount of money for research and development or product development. With this two-year marketing strategy, Google acquired the market, destroying the competing company, and growing into a global leader in search engine optimization.

4.2. Uber

Uber's full name is Uber Technologies Inc, founded by Travis Kalanick and Garrett Camp. This is a transportation company based in San Francisco, California and operates in cities in many countries.

Uber was founded in 2009 with the original name of Ubercab, which started operations in 2010 with a few vehicles and a few employees. Uber has achieved impressive success in recent years. By 2014, Uber services were available in 53 countries and over 200 cities worldwide, and the company was valued more USD 40 billion. Uber has risen to become the most influential global taxi company in 2016, valued at USD 60 billion, with more than 6,000 employees in more than 300 cities in 58 countries, and more than 1 billion drivers cooperating.

Uber's success has a lot to do with the effectiveness of its marketing strategy.

- *Understanding of the market*: Understanding the discomfort of customers for regular taxi services like call center, long wait, high prices, taking advantage of opportunities brought about by the development of technology, Uber has launched a good business model and service, solving the problems of passengers and drivers. For customers, through the mobile app, they can find the nearest driver, directly call for the car reservation, get the location of driver, and get the information about the amount of money to be paid. As for the drivers, Uber brings them the ability to relax and move on many new roads.

- *Attractive pricing strategies*: Not only good service but Uber's pricing policy is also very attractive. Uber can offer cheaper rates by utilizing idle power.

- *Good communication plan*: Even though Uber never burn money into advertising or public relations but by word of mouth, Uber is still widely known. Uber chose the first place as San Francisco, the technology city, where there are people who always look out for problems and find ways to improve quality of life. They are a community that actively shares new knowledge, new and influential experiences on social networks, newspapers and blogs. Uber sponsors moving vehicles for technology events, investment connections, and press conferences. Starting from a small but influential community, Uber is more commonly known by word of mouth. Uber creates "catalysts" that make the process faster and more powerful. Users are encouraged to share Uber with their friends by submitting an invitation via the app.

Lessons for startups in Vietnam for the commercialization process: firstly, one needs to understand the market's needs, whether the needs are satisfy by the competitors, and the problems of competitors can become advantage of the company. Secondly, the company needs a marketing strategy with clear objectives, giving priority to few smaller objectives before expanding to the whole market. Thirdly, the company can take advantage of the internet and the information revolution to offer products/services at a lower and more attractive price to customers. And finally, there is no need for a gigantic communication plan but rather clear and creative messages targeting the right audience using the tools that the audience is most familiar with.

5. SOLUTIONS TO INCREASE THE EFFECTIVENESS OF COMMERCIALIZATION PROCESS FOR STARTUPS IN VIETNAM

Based on the research results and lessons from successful startups in the US, several solutions are offered to increase the effectiveness of commercialization process for startups in Vietnam:

- *Raise awareness of entrepreneurs and companies founders regarding marketing strategy planning and importance of marketing activities*: Aside from having the right perspective relating to marketing, companies need to have trained knowledge and skills relating to marketing strategy planning and implementation. The authorities or incubators can help by offering workshops for entrepreneurs relating to marketing, offering human resources and help relating to marketing. From the company, they need to develop their own marketing department with trained and experienced marketing staffs.

- *Startups need clear and thorough understanding of the market, the competitors, and the customers via market research activities*: Research activities analyzing the internal and external environment of the

company need more attention. Examples from Google and Uber show how these companies succeed via good understanding of their competitors' strengths and weaknesses and customers' needs and wants. Some model could be used like SWOT analysis, Porter Five Force analysis, and many others could be used to analyze the strengths, weaknesses, opportunities, and threats of the companies in the market.

- *Companies need to develop clearer short-term objectives before moving on to long-term ones*: Long term objectives for marketing activities planning and implementation can serve as direction for future growth but the most important ones are short-term objectives. Both Google and Uber have very clear short-term objectives which are measurable, achievable, and with clear milestones.

- *A effective mix of four elements in marketing mix is needed rather than just focus on product development and advertising*: Google and Uber also focus very much on product and concept development, but together with effective implementation of other factors, for examples, reasonable and flexible pricing strategy, mix of marketing media to reach target audience, the use of other less expensive methods of media such as word-of-mouth marketing.

- *Clear sets of criteria to measure the effectiveness of marketing activities with regular adjustments to the marketing plan*: There was no method to analyze the effectiveness of media use, the reach to customers, or any adjustment for improvement.

6. CONCLUSION

Startups in Vietnam are facing many difficulties in the commercialization of business ideas and concepts and reaching target customers. Most of these difficulties coming from failure of startups to effectively plan and implement marketing strategy. The reasons come from misconceptions of businesses relating to marketing strategy, lack of knowledge and skills to plan and carry out marketing plan, and lack of trained human resources with experience in marketing. The paper has drawn out some solutions both for the companies and the startups supporting system from analysing some successful startups like Google and Uber in the United States. The solutions hope to increase the effectiveness of the commercialization process for startup companies in Vietnam. Further study regarding specific criteria to evaluate the effectiveness of the strategies and offers solutions based on these criteria could contribute more to the topic.

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