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A special edition devoted to

Contemporary Issues in Management & Social Sciences

Guest Editors

Gabriel Moens, Danture Wickramasinghe & Kashan Pirzada

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Journal of Social Sciences & Humanities

About the Journal

Overview

Pertanika Journal of Social Sciences & Humanities (JSSH) is the official journal of Universiti Putra Malaysia published by UPM Press. It is an open-access online scientific journal which is free of charge. It publishes the scientific outputs. It neither accepts nor commissions third party content.

Recognized internationally as the leading peer-reviewed interdisciplinary journal devoted to the publication of original papers, it serves as a forum for practical approaches to improving quality in issues pertaining to social and behavioural sciences as well as the humanities.

JSSH is a **quarterly** (*March, June, September* and *December*) periodical that considers for publication original articles as per its scope. The journal publishes in **English** and it is open to authors around the world regardless of the nationality.

The Journal is available world-wide.

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Areas relevant to the scope of the journal include Social Sciences—Accounting, anthropology, Archaeology and history, Architecture and habitat, Consumer and family economics, Economics, Education, Finance, Geography, Law, Management studies, Media and communication studies, Political sciences and public policy, Population studies, Psychology, Sociology, Technology management, Tourism; Humanities—Arts and culture, Dance, Historical and civilisation studies, Language and Linguistics, Literature, Music, Philosophy, Religious studies, Sports.

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Pertanika was founded in 1978. A decision was made in 1992 to streamline Pertanika into three journals as Journal of Tropical Agricultural Science, Journal of Science & Technology, and **Journal of Social Sciences & Humanities** to meet the need for specialised journals in areas of study aligned with the interdisciplinary strengths of the university.

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Pertanika is almost **40 years old**; this accumulated knowledge has resulted in Pertanika JSSH being abstracted and indexed in **SCOPUS** (Elsevier), Thomson (ISI) **Web of Science™ Core Collection** Emerging Sources Citation Index (ESCI). Web of Knowledge [BIOSIS & CAB Abstracts], **EBSCO** and EBSCOhost, **DOAJ**, **Google Scholar**, **TIB**, **MyCite**, **ISC**, **Cabell's Directories** & Journal Guide.

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International Standard Serial Number (ISSN)

An ISSN is an 8-digit code used to identify periodicals such as journals of all kinds and on all media–print and electronic. All Pertanika journals have ISSN as well as an e-ISSN.

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A decision on acceptance or rejection of a manuscript is reached in 3 to 4 months (average 14 weeks). The elapsed time from submission to publication for the articles averages 5-6 months.

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Refer to Pertanika's **INSTRUCTIONS TO AUTHORS** at the back of this journal.

Most scientific papers are prepared according to a format called IMRAD. The term represents the first letters of the words **I**ntroduction, **M**aterials and Methods, **R**esults, **A**nd, **D**iscussion. IMRAD is simply a more 'defined' version of the "IBC" [Introduction, Body, Conclusion] format used for all academic writing. IMRAD indicates a pattern or format rather than a complete list of headings or components of research papers; the missing parts of a paper are: *Title, Authors, Keywords, Abstract, Conclusions*, and *References*. Additionally, some papers include Acknowledgments and Appendices.

The *Introduction* explains the scope and objective of the study in the light of current knowledge on the subject; the *Materials and Methods* describes how the study was conducted; the *Results* section reports what was found in the study; and the *Discussion* section explains meaning and significance of the results and provides suggestions for future directions of research. The manuscript must be prepared according to the Journal's **INSTRUCTIONS TO AUTHORS**.

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Authors are notified with an acknowledgement containing a *Manuscript ID* on receipt of a manuscript, and upon the editorial decision regarding publication.

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Notification of the editorial decision is usually provided within ten to fourteen weeks from the receipt of manuscript. Publication of solicited manuscripts is not guaranteed. In most cases, manuscripts are accepted conditionally, pending an author's revision of the material.

As articles are double-blind reviewed, material that might identify authorship of the paper should be placed only on page 2 as described in the first-4 page format in Pertanika's **Instructions to Authors** given at the back of this journal.

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In the peer-review process, three referees independently evaluate the scientific quality of the submitted manuscripts.

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2. The chief executive editor sends the article-identifying information having been removed, to three reviewers. Typically, one of these is from the Journal's editorial board. Others are specialists in the subject matter represented by the article. The chief executive editor asks them to complete the review in three weeks.

   Comments to authors are about the appropriateness and adequacy of the theoretical or conceptual framework, literature review, method, results and discussion, and conclusions. Reviewers often include suggestions for strengthening of the manuscript. Comments to the editor are in the nature of the significance of the work and its potential contribution to the literature.
3. The chief executive editor, in consultation with the editor-in-chief, examines the reviews and decides whether to reject the manuscript, invite the author(s) to revise and resubmit the manuscript, or seek additional reviews. Final acceptance or rejection rests with the Edito-in-Chief, who reserves the right to refuse any material for publication. In rare instances, the manuscript is accepted with almost no revision. Almost without exception, reviewers' comments (to the author) are forwarded to the author. If a revision is indicated, the editor provides guidelines for attending to the reviewers' suggestions and perhaps additional advice about revising the manuscript.
4. The authors decide whether and how to address the reviewers' comments and criticisms and the editor's concerns. The authors return a revised version of the paper to the chief executive editor along with specific information describing how they have answered' the concerns of the reviewers and the editor, usually in a tabular form. The author(s) may also submit a rebuttal if there is a need especially when the author disagrees with certain comments provided by reviewer(s).

5. The chief executive editor sends the revised paper out for re-review. Typically, at least one of the original reviewers will be asked to examine the article.

6. When the reviewers have completed their work, the chief executive editor in consultation with the editorial board and the editor-in-chief examine their comments and decide whether the paper is ready to be published, needs another round of revisions, or should be rejected.

7. If the decision is to accept, an acceptance letter is sent to all the author(s), the paper is sent to the Press. The article should appear in print in approximately three months.

   The Publisher ensures that the paper adheres to the correct style (in-text citations, the reference list, and tables are typical areas of concern, clarity, and grammar). The authors are asked to respond to any minor queries by the Publisher. Following these corrections, page proofs are mailed to the corresponding authors for their final approval. At this point, **only essential changes are accepted**. Finally, the article appears in the pages of the Journal and is posted on-line.

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ABSTRACTING/INDEXING

Pertanika is now over 40 years old; this accumulated knowledge has resulted the journals being indexed in abstracted in SCOPUS (Elsevier), Thomson (ISI) Web of Knowledge [ESCI, BIOSIS & CAB Abstracts], EBSCO & EBSCOhost, ERA, DOAJ, AGRICOLA (National Agric. Library, USA), Cabell's Directories, Google Scholar, MyAIS, Islamic World Science Citation Center (ISC), ASEAN Citation Index (ACI) & Rubriq (Journal Guide).

Preface

It is both an honour and pleasure to present to the readers this special issue of the 5th and 6th Global Conference on Business and Social Sciences 2017 (GCBSS), published under the flagship of PERTANIKA Journal of Social Sciences and Humanities (JSSH). This journal's first publication dates back to 1993 and it is currently abstracted and indexed in SCOPUS (Elsevier), Thomson (ISI) Web of Knowledge (BIOSIS and CAB Abstracts), EBSCO and EBSCOhost, DOAJ, Cabell's Directories, MyAIS, ISC and Rubriq (Journal Guide). The contents of the special issue are based on oral presentations made at GCBSS which were held in Kuala Lumpur and Bangkok.

The Global Academy of Training and Research (GATR) Enterprise is a registered research firm in Malaysia, which organises and sponsors the GCBSS Series, the aim of which is to provide a collegial environment for scholars, researchers, academics and practitioners to discuss, present and disseminate their research findings. The GCBSS series has been organised since 2013 in countries such as Sri Lanka, Vietnam, Australia, the United Kingdom, and Malaysia among others. The GCBSS has attracted strong support from academics, who have strong credentials in various disciplines including Business, Accounting, Law and Social Sciences.

The 5th and 6th GCBSS had attracted over 500 interesting papers from around the world. Following a rigorous and careful review process, the editors selected 27 (twenty-seven) high quality papers for inclusion in the JSSH, which focused on research outcomes. In addition, more than 200 papers were published in the Global Academy of Training and Research Journals and 20 papers in Polish Journal of Management Studies. The papers cover a wide range of disciplines such as social sciences, business, accounting, finance, and economics. These papers were written by scholars from six continents.

All the papers published in this edition underwent Pertanika's stringent peer-review process involving a minimum of two reviewers comprising internal as well as external referees. This was to ensure the quality of the papers justified the high ranking of the journal, which is renowned as a heavily-cited journal not only by authors and researchers in Malaysia but by those in other countries around the world as well.

The Conference also provided an opportunity to welcome prominent plenary speakers from Australia, UK and Norway such as Professor Dr Gabriël A. Moens, Curtin University, Emeritus Professor, University of Queensland, Australia; Professor Dr Danture Wickramasinghe, Adam Smith Business School, University of Glasgow, United Kingdom; Professor Dr. Bjoren Willy Aamo, University of Norland, Norway; Professor Dr. Musa Mangena, University of Essex, United Kingdom and Professor Dr. Kamran Ahmed, La Trobe Business School, Australia. We are grateful to them for their contributions.

The guest editors of this special issue record their appreciation to Dr. Nayan Kanwal, the Chief Executive Editor, Pertanika Journals, UPM at the Journal Division for his wisdom, generous guidance and strong commitment in publishing this special issue. This issue would not have been possible without his concerted effort.

Many other individuals also contributed to the success of this special issue. We are indebted to the referees who have put in hard work and the long hours to review each paper in a timely and professional way. Our thanks to all the members of the GCBSS International Advisory Board, session chairs, delegates and especially the members of the Organising Committee. We hope that the findings and discussions of these papers will contribute to better and effective public policy making around the world. We truly believe that our regional initiative will expand the horizon of new discoveries and we hope that you enjoy reading these papers.

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Perceptions of Causes of Poverty among Rural and Urban Households in Zomba Malawi

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ABSTRACT

An important macro-economic objective of a country is poverty reduction. This objective is shared by its development partners. Many policies have been introduced at the international and national levels to tackle poverty, especially hard core and abject poverty. Each policy is theory- driven. These theories that shape and inform the policies are developed by practitioners whom in most cases have not directly experienced poverty themselves. Thus, it is no surprise these policies fail to solve or minimise the problems via the resultant intervention. There is therefore a mismatch as it were, that requires a reset, or at the very least, adapting as opposed to adopting the theories and their prognosis therein. Based on the Feagin scale, there are three main categories related to perceptions of poverty: Individual, Structural, and Fatalistic. The objectives of the paper are to examine the perceptions of causes of poverty among households in Malawi, and the factors influencing those perceptions. A special focus is on rural and urban households to see if there exists a significant difference in their perceptions. The results show a variation in perceptions, with household income, location of the household and gender of the head of household proving to be significant predictors. Additionally, by location, people in the rural areas allude to the individualistic causes of poverty. Thus, approaches to tackle poverty can be effective if these perceptions are taken into account.

Keywords: Fate, households, individualistic, perceptions, poverty, rural, structural, urban

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INTRODUCTION

Poverty reduction remains an important macro-economic objective of almost all developing countries. There have been policies both at international and national levels to deal with poverty, especially its abject form. Theories that inform contemporary policies to combat poverty although meant for poor communities are developed to a greater extent by practitioners far detached from the experiences of poverty. Thus, the resultant intervention becomes less effective. Dealing with this mismatch as it were, requires a reset, or at the very least, adapting as opposed to adopting the theories and their prognosis therein.

Most theories related to poverty originate from developed countries (Lewis, 1966; Rowntree, 1889). Conservative theories blame the victim which make it difficult to engage the poor. There exist no theories that have been developed based on experience of poverty in the African context, let alone in Malawi. There have been attempts (Grobler & Dunga, 2016; Niemela, 2008) to use poor households or just households in general to understand poverty and the perceptions of its causes of poverty by the poor. However, the studies have not developed any succinct approach to dealing with poverty. It is therefore important to engage the households in these contexts and to get an understanding as to what they perceive to be the causes of their poverty. This study therefore contributes to the literature on poverty by developing relevant and applicable approaches to dealing with poverty.

The international effort to deal with the worst forms of poverty has for years taken one step forward and two steps backwards. The World Bank (2016) states that fewer people live in extreme poverty than ever before adding that even as the world's population has grown, the number of poor has gradually fallen. In 1990, almost 4 in 10 people were living below extreme poverty line of $1.90 a day. In 2013, that figure had fallen to just over 1 in 10. But it still represents more than 767 million people (World Bank, 2016). These statistics indicate that poverty remains unacceptably high and that relative poverty may have not changed at all. In fact, statistics from most of Sub Saharan Africa such as Malawi, have shown worsening situations (National Statistics of Malawi [NSO], 2015). The poverty improvement as shown by global figures are due to the gains made in East Asia and Pacific and in South Asia (World Bank 2016).

The fact that there is no dramatic reduction in the number of poor people is a worrying fact. Studies (Word Bank, 2016; Dunga, 2014), in developed and developing countries indicate that the effort to deal with poverty whether by national governments, philanthropic outfits and international organisations or agencies have been met with overwhelming challenges and there is very little to show for even after the 2015 MDG target year. There is need to understand the origins of the approaches that are taken in dealing with poverty issues. Bradshaw (2006) rightly pointed out that most programmes are designed and formulated based on some theories of poverty that explain what poverty is and how it can be dealt with. He stated that "anti-poverty programs are designed, selected, and implemented in response to different theories about the cause of poverty that "justify" the community development interventions" (Bradshaw, 2006). The theory that informs the organisation or a philanthropist usually influences the approach or the kind of intervention they take to battle poverty. Those that hold the view that the poor are lazy and do not seek to change their situation usually implement programmes that may only help the poor to survive in their situation, i.e. maintaining their status quo. They may not be keen to implement programmes to alleviate poverty, such as education and employment.

In this paper, pre-theoretical position which is informed by the authors stance is a marked departure from the conservative theories. It will be argued the poor do not enjoy being poor or remain trapped in it. The paper will also take a bold stance of critiquing traditional theories as regards to how they intend to be used in other contexts which do not fit in the original idiosyncrasies that helped the formulation of these theories. It will also assess the assumptions that were held as true in the process of developing the theories in the first place. Hence, the assumptions underlying these conservative theories are considered by the author as twisted and hence misguided.

Feagin (1972) argued that there are three main perceptions of poverty; the individualistic perception where the poor person is blamed for his/her circumstances, The structural perception which puts the blame on the structure of society and the injustices that help others to succeed at the expense of other segments of society, and the third which is the fatal perception that considers poverty to be a result of fate. This paper examines perception of household heads in Malawi on causes of poverty. The findings of the paper would be useful in understanding the gap that exists between theories and policies that shape poverty alleviation measures in order to effectively combat the menace.

LITERATURE REVIEW

Theories of poverty are not as clear cut or cannot be simplified like mathematics or physics. The idiosyncrasies of countries and societies make a blanket theorisation of poverty erroneous. It is therefore important to take cognisance of the differences of background and context in mitigating poverty. The theories of poverty are based on conservative and liberal principles as their blueprint. For example, Elesh (1970) identified two distinct categories in the theories of poverty which he called cultural theory and structural theory. In relating the usefulness of theories of poverty to poverty reduction programmes, Bradshaw (2006) reviewed five theories, which if looked at carefully can all fall within the two broader categories of liberal and conservative. The five theories were: 1) individual deficiencies, 2) cultural belief systems that support subcultures in poverty, 3) political-economic distortions, 4) geographical disparities, and 5) cumulative and circumstantial origins (Bradshaw, 2006). The first two of the theories were part of the conservative school of thought while the other three formed the liberal school of thought. Bradshaw, however, contended that poverty reduction policies were to a greater extent a reflection of the view or position taken by those in charge of the formulation of the policies and programmes (Bradshaw, 2006; Sameti, Esfahani & Haghighi, 2012).

According to Feagin (1972), there is an individualistic perception which points to the fact that the poor themselves are to blame for their poverty. This is the same argument advanced by Lewis (1963, 1965) in his infamous ‘culture of poverty’ or the sub-cultures of poverty. This position in itself is a judgemental condemnation of the poor who would disagree with such characterisation. The second perception places the blame squarely on society and its structures, arguing the systems exclude the poor from participating in development and hence, remain poor. The third category is the fatal perception which looks at poverty as an act of some fate which is beyond a person’s control. A number of studies have replicated the Feagin categorisation. Some of them include Bagguley and Mann (1992); Bowles and Gintis (1998); Bullock (1999); Carr and MacLauchlan (1998); Furnham (1985; 1993); Hine and Montiel (1999); Hunt (1996). The results of the studies vary widely with other countries like the US being more inclined to agree with the individualistic perceptions. Nasser and Abouchedid (2002) argued that the results in the US only strengthened the individualistic identity of that country. These individualist perceptions were found in a number of studies in the USA, for instance, Feagin, (1972); Kluegel and Smith (1981, 1986); Smith and Stone (1989).

The individualistic perception just like the conservative theories of poverty, points the finger at the poor as being responsible for their circumstances (Lewis, 1963, 1966). Social psychology introduced the term culture of poverty where it is believed that certain individuals feel they are responsible for their situation and they can do nothing to change their situation. Liberal theories rigorously disagree with the conservative postulation as they contend it leads to slackness in the efforts to end poverty or at least reduce its extreme forms. Davis and Sanchez-Martinez (2014) distinguishes the theories of poverty as classical and neo-classical, where the former is premised on the fact that individuals are ultimately responsible for their economic well-being and accordingly, propose laissez faire policies to uplift the conditions of the poor. In contrast, Neoclassical (mainstream) economics is more diverse and can provide explanations for poverty, notably market failures, that are beyond individuals’ control (Davis & Sanche-Martinez, 2014)

Several studies in the last decade stated that to develop suitable poverty alleviation strategies, policy developers must first realise that poverty may differ from place to place, and society to society (Diamond, 2007; Hulme & Shepard, 2003; Small, 2010). In this context, interpretation of social reality, and the fact that poor people are never a monolith should be considered when coming up with appropriate interventions.

Feagin (1972) is usually cited as the first person to look at different perceptions of poverty. Other studies include (Ryan, 1976; Schiller, 1989), who focused on individualistic perception. Goldsmith & Blakely (2010) and Jennings (1999) looked at the structural component of society and how that may explain the causes of poverty. Campbell (2001) looked at the fatalistic perception of poverty and how poverty may also be a result of some events that are beyond anyone's control like death of parents or disability at birth.

There are studies that have attempted to identify the differences in perceptions based on nationality or race or social economic status. Nasser and Abouchedid (2002) compared perceptions of students from three nations, namely South Africa, Lebanon and Portugal, on causes of poverty and found that there were differences in the perceptions, with the South African students alluding more to individualistic perception.

METHODS

The paper uses survey data collected in the rural and urban areas of Zomba district in South Eastern part of Malawi. A total of 327 households were involved in the survey with households sampled from rural and from urban areas. The households were randomly selected from the clusters of townships and villages that were pre-selected due to their poverty profile as provided by the NSO (NSO, 2013). This was done using the available maps of the dwelling units in the two areas. A questionnaire was used to obtain data. They were administered by experienced and trained enumerators. Only heads of households were interviewed upon obtaining their consent. Some of the questions were on household demographics and on the perceptions of causes of poverty. The main objective of the study was to investigate the differences that existed in the perceptions of what rural and urban households considered to be the causes of poverty. This questionnaire has been used in other low-income areas in South Africa (Grobler & Dunga, 2016).

Households that were interviewed were living in poverty or in close proximity with poor households. This was achieved by clustering poor townships in the urban area and rural households who are subsistence farmers. The intention was to have responses informed by lived experiences as opposed to speculations. Three indices were calculated based on the responses on the perceptions of causes of poverty. The perceptions were adopted from the existing scale (Davids & Gouws, 2011; Feagin, 1972). The scale has questions on individualistic perceptions, structural perceptions and fatal perceptions of the causes of poverty. Table 1 shows the different statements in the scale used to assess perceptions of poverty.

The statements were ranked on a scale of 1 to 5 where 1 represented strong disagreement and 5 represented strong agreement with the statement. An index score was then calculated which ranged between 3 and 15 for the individualistic perception, 5 and 25 for the structural perceptions and 4 and 20 for the fatalistic perception.

Table 1
Statements in perceptions of causes of poverty scale

Index	Reasons for poverty
Individualistic perceptions	1. They lack the ability to manage money
	2. They waste their money on inappropriate items
	3. They do not actively seek to improve their lives
Structural perceptions	1. They are exploited by rich people
	2. The society lacks social justice
	3. Distribution of wealth in the society is uneven
	4. They lack opportunities due to the fact that they live in poor families
	5. They live in places where there are not many opportunities
Fatalistic perceptions	1. They have bad fate
	2. They lack luck
	3. They have encountered misfortunes
	4. They are not motivated because of welfare

Source: Davids and Gouws: 2011 also used in Grobler and Dunga (2016)

Heads of households were asked to indicate whether they agree or disagree with the statement. The index, therefore, implied that a higher score indicated strong agreement with the statement in that particular category of perception and a lower score indicated strong disagreement with the statement. The scale (see Table 1) was validated by David and Gouws (2011).

Model Specification

Three linear regressions models were estimated with the dependent variable calculated as the index of each of the three perceptions. This is the same approach used by Davids and Gouws (2011); Grobler and Dunga (2016) to compare the results. The linear regression model was formulated as follows

$$Index_i = \beta_0 + \sum_i^n \emptyset_i X_i + \sum_i^n \theta_i D_i + \varepsilon \quad (1)$$

Thus, the regressions to be estimated are as follows:

$$Index_i = \beta_0 + \emptyset_1 Income_i + \emptyset_2 Age_i + \theta_1 D_1 + \theta_2 D_2 + \theta_3 D_3 + \theta_4 D_4 + \varepsilon \quad (2)$$

$$Indiv\ Index = \beta_0 + \emptyset_1 Income_i + \emptyset_2 Age_i + \theta_1 D_1 + \theta_2 D_2 + \theta_3 D_3 + \theta_4 D_4 + \varepsilon \quad (3)$$

$$Struct\ Index = \beta_0 + \beta_1 Income_i + \beta_2 Age_i + \theta_1 G_i + \theta_2 L + \theta_3 MS_i + \varepsilon \quad (4)$$

$$Fatal\ Index = \beta_0 + \beta_1 Income_i + \beta_2 Age_i + \theta_1 G_i + \theta_2 L + \theta_3 MS_i + \varepsilon \quad (5)$$

Where equation 3 has the individualistic perception index as the dependent variable, equation 4 has the structural perception index as the dependent variable and equation 5 has the fatalistic perception index as the dependent variable.

The categorical variables have been converted into dummy variables as follows: D_1 is dummy variable for gender defined as 1 for female head of household and 0 for male head of household, meaning that the coefficient represented by θ_1 represents the coefficient for females, and hence, it is entered in the regression as female. D_2 is dummy for location defined as 1 for urban household and 0 for rural household. D_3 is dummy for Marital status defined as 1 for married head of household and 0 for those that are not living with a partner, and finally D_4 is dummy for the interaction variable between gender and location and since the 1*0 =0 and 1*1 =1 the interaction variable represents urban female heads of households.

RESULTS

Table 2 contains descriptive statistics of the indices which will be used in the regression as dependent variables.

Table 2
Descriptive statistics of the indices

	N	Minimum	Maximum	Mean	Std. Deviation
Individualistic index	327	4.00	20.00	11.6422	4.00580
Structural index	327	6.00	25.00	16.7584	4.60924
Fatalistic index	327	5.00	20.00	13.9786	3.55105

The results in Table 2 show the ranges of the indices as explained in the methodology section. For the individualistic perception, there are four statements with a minimum score of 4 and a maximum score of 20. The index for structural perceptions has a minimum of 6 and a maximum of 25 with a mean of 16.75, meaning that majority of the respondents agreed with the perception.

Table 3 shows the frequencies of the location of the households with 63.9% from rural areas. This is a representation of the population in most parts of Malawi, where the majority of households are found in the rural areas (NSO, 2016).

Table 3
Location of household

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rural	209	63.9	63.9	63.9
	Urban	118	36.1	36.1	100.0
	Total	327	100.0	100.0	

A cross- tabulation between gender and location is also done since there is an interaction variable used in the model that interacts gender and location. Table 4 presents a cross tabulation between gender and location.

Of the 209 households from the rural areas, 73.7% were male headed households while 26.3% were headed by females. And from the urban areas 82.2% were headed by males whilst 17.8% were headed by females. The data shows that the majority of households in the sample were male headed households only 23.2% of the total sample was female-headed households. This shows a big contrast with data collected from townships in South Africa where there were more female-headed household than male headed households (Dunga, 2017).

Table 4
Cross tabulation between location and gender

			Gender		
			Male	Female	Total
Location	Rural	Count	154	55	209
		% within location	73.7%	26.3%	100.0%
		% within gender	61.4%	72.4%	63.9%
		% of Total	47.1%	16.8%	63.9%
	Urban	Count	97	21	118
		% within location	82.2%	17.8%	100.0%
		% within gender	38.6%	27.6%	36.1%
		% of Total	29.7%	6.4%	36.1%
Total		Count	251	76	327
		% within location	76.8%	23.2%	100.0%
		% within gender	100.0%	100.0%	100.0%
		% of Total	76.8%	23.2%	100.0%

This cross-tabulation also gives an indication of the number of households which make up the interaction variable of urban female households, which according to Table 4, is only 6.4% of the total sample. This is why the interaction variable is only included in the individualistic regression but is left out in the structural and the fatalistic indices. Table 5 shows the results of the three regressions represented by equations 3, 4 and 5.

Table 5
Regression results

Variables	Individualistic perception index			Structural perception index			Fatalistic perception index		
	Regression			Regression			Regression		
	β	t	sig	*β*	t	sig	*β*	t	sig
Constant	12.266	10.3	0.000***	17.7	13.2	.000***	13.87	13.8	.000***
Household income	-1.03	-0.26	0.78	2.06	4.72	.000***	1.4	4.3	.000***
Age of head of household	0.017	.774	.439	.015	.618	.537	.036	1.92	.055*
Gender of head of household (1 = female)	-.345	-.375	.708	-1.8	-1.74	.08*	-1.57	-2.03	.043**
Location (1 = Urban)	-4.661	-2.85	.005***	-1.05	-1.7	.086*	-1.16	-2.53	.012**
Marital status (1= Married)	-1.295	-1.37	.169	-1.91	-1.79	0.073*	-1.12	-1.39	.16
Interaction of location and gender	2.458	2.82	0.005***						

The regression significance test from the ANOVA tests were significant for all three regressions, For the Individualistic, the F-statistic was 1.99 and significant at 10% with a p-value of 0.06. This could be due to the inclusion of the interaction between gender and location. The interaction was not included in the other two regressions. The F statistic for the structural regression was 5.52 with a p-value of 0.000 which was significant at 1% significance level. The F statistic for the fatalistic regression was 5.79 with a p-value of 0.000 which was also significant at 1% significance level. The bootstrapping was also used on all the regression to see if the robustness would improve the standard error; the changes in the standard error were very small meaning that the regression was robust enough. The VIF for all the coefficients in all the three regressions was also around 1, small enough to indicate that there was no multicollinearity in the models.

DISCUSSION

The perceptions of people on the causes of poverty may vary depending on how they perceive their own situation and that of others. It is likely that those that are trapped in poverty would disagree with the individualistic perception of poverty and point the finger at the others. Gender dynamics in terms of how women experience poverty as compared to men may also influence what people think about causes of poverty.

Household Income

The regression results in Table 5 show that income was not a significant predictor of the individualistic perception. However, the coefficient was negative, indicating the more income people get, the more they do not agree with the individualistic perception. The regression result for structural and fate showed, income of the household proved to be a significant predictor. For the structural, the higher the income the more they agreed with the fact that the structures of the society should be blamed for poverty. The fatalistic regression also registered a significant p-value of 0.000 on income as a predictor indicating that the higher the income, the higher the score on the fatalistic index. This could be explained mainly by the high numbers of orphans. Children that have lost their parents either due to HIV/Aids or natural death are likely to fall into poverty, fail to attend school and end up in poverty. The fact is government support structures are not well developed to help these children.

Age of Head of Household

The age of the head of household was only significant in explaining the fatalistic perception of causes of poverty with a coefficient of 0.036 and a p-value of 0.055 which was significant at 10% significance level. The fact that age was not significant for the other two perceptions of causes of poverty may indicate the fact that the perceptions are not really dependent on age.

Gender of Head of Household

Gender was defined as 1 for females and 0 for males, thus the coefficient in the regression indicates the difference in the score between male heads and female heads of household. The coefficient for gender was not significant for the individualistic regression, although it is interesting to note that the coefficient was negative, meaning that the average score of female heads of households was 0.345 less than that of males. Gender coefficient was significant in the structural regression with a p-value of 0.08, which was significant at the 10% significance since 0.08 is less than 0.1. The gender coefficient was also significant for the fatalistic regression with a p-value of 0.043 which was significant at 5% significance level. The fact that the coefficients were negative indicate that on average, male heads of households would agree more with both the structural and the fatalistic perceptions, more than the female heads of households. This may indicate the level of involvement between males and females in society.

Location of the Household

The variable of interest was the location of the household, either rural or urban. The fact that opportunities differ between rural areas and urban areas was considered an important factor to be investigated to see if the location would be a significant predictor of the perception of the causes of poverty. The location was defined as

1 for urban areas and 0 for rural areas, implying that the coefficient indicates the difference between rural and urban heads of households in the score of the three indices. The coefficient was significant in all the three regressions, with a p-value of 0.005 for the individualistic perception significant at 1% significance level. The coefficients were all negative meaning that rural heads of households would score higher than the urban heads of households. The result makes sense given the fact that there are higher levels of poverty in the rural areas of Malawi than in the urban areas (NSO 2015). Rural areas hence, are likely to agree with almost all the perceptions; they however, scored more on the individualistic perception, which indicate rural heads of households viewed poor people in the rural areas must share part of the blame for their condition.

Marital Status

Marital status has been used in previous studies to explain poverty and food security (Dunga, 2016; Grobler & Dunga, 2016). In this paper, marital status was only significant at 10% significance level for the structural index of causes of poverty with a p-value of 0.073. The fact that it was not significant in the other models may be due to the fact that majority of respondents were married and account for almost 80% of the sample. However, the married were less likely to blame society whereas the unmarried scored higher on the structural perception index. This may mean that the unmarried felt society had failed them. Single women are more vulnerable to poverty than the married who have dual income and social support from both sides.

The final variable that was considered was the interaction between gender and location. Based on the calculation of the interaction variable, the coefficient represented female heads of households in the urban areas. This variable was only used for the individualistic perception. The coefficient for this group was significant at 1% with a p-value of 0.005. The coefficient was positive, meaning that heads of households based in urban areas were more likely to agree with this conservative postulation that the poor are supposed to take responsibility for their poverty.

In order to see which statements had high levels of agreement, the responses were added up to find a total score for each statement. The responses were on the comparable scale of 1 to 5, and the total were to be on the range of a minimum total score of (1*327) = 327 to a maximum aggregate score of (5*327) = 1635. The results are shown in Table 6.

Table 6
Comparing total scores of perception statements

Perception Category	Perception Statement	Total Score	Rank of score
Individualistic perceptions	They lack the ability to manage money	396	11
	They waste their money on inappropriate items	389	12
	They do not actively seek to improve their lives	431	8
Structural perceptions	They are exploited by rich people	512	5
	The society lacks social justice	434	7
	Distribution of wealth in the society is uneven	405	10
	They lack opportunities due to the fact that they live in poor families	488	6
	They live in places where there are not many opportunities	430	9
Fatalistic	They have bad fate	573	1
	They lack luck	557	3
	They have encountered misfortunes	549	4
	They are not motivated because of welfare	570	2

Calculations from the Survey results

Table 6 show the fatalistic perceptions had the highest level of agreement among the heads of households. The 4 statements in that category were ranked top 4 in the total score. The second category that had high total scores was the structural perception. Households on average did not agree with the individualistic perception of causes of poverty.

CONCLUSION

This paper has examined three perceptions of the causes of poverty from the individual, structural and fatalistic standpoint. The location of the household was found to be significant determinant of the perceptions of poverty with people from the rural areas scoring higher on all the perceptions. The findings of the study showed a variation in the perceptions of poverty, with income and gender of the household head also proving to be significant predictors. The respondents agreed the most with the fatalistic perceptions followed by structural perception, while the individualistic perception was not favoured. The implications of the study is that perceptions of causes of poverty differ and hence poverty interventions needs to take into account the people's perception, otherwise policy interventions will not achieve their intended outcomes in these different contexts.

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Factors Affecting Attainment of Ideal Retirement Income among Retirees

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ABSTRACT

The objective of this study is to identify factors affecting the attainment of ideal retirement income among retirees in Selangor, Malaysia. This study adopted Maslow's hierarchy of human needs to show the relationship between attainment of ideal retirement income and health level, assets owned, financial satisfaction, financial knowledge and will preparation. This was achieved through a survey and stratified sampling of respondents aged 50 years or in Selangor. Results from multiple regression analysis revealed that health level, assets owned, financial satisfaction, financial knowledge and will preparation are positively related to the attainment of ideal retirement income. The findings confirm those of previous studies and offers useful insight for future studies on this topic.

Keywords: Assets, retirement income, financial knowledge, financial satisfaction, health, Maslow's hierarchy of human needs

INTRODUCTION

Today's retirees are concerned with whether their retirement savings are sufficient to maintain their lifestyle after their retirement. High inflation rates and health problems among others may result in depletion of retirement savings and income. According to the Employees Provident Fund (EPF) of Malaysia, 8 out of 10 contributors have insufficient retirement savings to sustain their lifestyle post retirement. In order to ensure the well-being of retirees, from January 1, 2017 onwards, EPF has set a new Basic Savings quantum of MYR950 per month (from January 1, 2014 to December

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31, 2016, it was MYR 820) for a period of 20 years for its members to accumulate the desired amount in their EPF accounts when they reach the age of 55 (EPF, 2016). The process of senescent is unavoidable due to longer life expectancy and lower fertility rate as well as an increase in median age. The increase in ageing population is a concern too. The removal of state subsidies, for rice, cooking oil and RON95 fuel and the introduction of GST have led to a soaring cost of living. Thus, savings are essential especially for those who are approaching retirement. The current retirement age in Malaysia is between 60 and 65. The previous retirement age of 55was not feasible for many as they were not able to generate enough retirement savings. Employees in the public sector who have worked at least 33 years are entitled to government pension plan in which the government will provide monthly pension payment equivalent to half of their last drawn salary. In the private sector, employees have the Employees Provident Fund (EPF) as their retirement plan (Ibrahim, Mohamed Isa, & Ali, 2012). However, the question here is whether the amount is sufficient for their future. The objective of this study is to identify factors affecting the attainment of ideal retirement income. This study used Maslow's hierarchy of human needs to show the relationship between attainment of ideal retirement income and health level, assets owned, financial satisfaction, financial knowledge and will preparation.

Previous Research

Maslow's hierarchy of human needs, first proposed in 1943, is based on the premise that the former are motivated by physiological, safety, love, esteem and self-actualisation, (Maruthaveeran, 2010). According to Agaskar (2013), Maslow's hierarchy of human needs, in a pyramid form, can explain financial planning as it relates to financial satisfaction based on the performance of the abovementioned five motivation needs. The theory states that individuals will always satisfy the most basic needs first and then, work their way to the top of the pyramid and ultimately fulfil all their other needs (Kok, 2014). Financially, in order to satisfy the very bottom of the Maslow's pyramid which is physiological needs, they would purchase and invest in protection schemes, such as insurance and medical coverage, to prepare for any uncertainties in the future. In order to fulfil the second category which is safety, most people will indulge in investments such as short term fixed deposits. In order to improve their self-esteem, they will invest in mutual funds or stocks in the market. Finally, they will invest in long term investments, such as real estate and private equity. Lee and Hanna (2015) looking at showed an association between financial goals and Maslow's hierarchy of needs. In fact, some goals were considered more crucial than the others.

Past studies have found that savings are inadequate for many retirees in their 50s and early 60s. Tan and Folk (2011) reported the devotion and dedication to familial support of the old has diminished in many Asian countries. In the 1950s, the average life expectancy in Malaysia was 47 for men and 48.5 for women but it has increased to 72 and 76 for men and women respectively in 2012 (Tan, Folk, & Choong, 2012). As a result, percentage of old age increased significantly from 5% in 2010 to an expected 14.5% in 2040 (DSM, 2016). This means an increasing e number of Malaysians are living years or decades after their retirement age. Thus, retirement savings as the amount saved or set aside to be used upon retirement are crucial. The Minimum Retirement Age Act 2012 (enforced on July 1, 2013), increased retirement age from 55 to 60 years. Thus, retirement age is critical in determining the number of years a person has as far as income generation is concerned and to establish future financial security (Tan & Folk, 2011).

Many studies have been conducted on the relationship between retirement savings and its many independent variables. In this study, Maslow's hierarchy of human needs is used as a framework to study the relationship between retirement savings and its independent variables, such as health level, assets owned, financial satisfaction, financial knowledge and will preparation. Planning for retirement savings is crucial for everyone. Gruber and Helen (2009) found that people face risk with regards to their future income due to poor health prior to their retirement. Future health condition is not something one can predict. Therefore, planning for retirement is a reasonable goal for everyone. Saving as much as possible is a good strategy for consumption in the future (Gruber & Helen, 2009). Johnson, Mermin and Uccello (2006) reported that health problems forces some to retire early which deals a serious blow to retirement preparation and planning. Unexpected medical bills is usually at the expense of their retirement savings. Health problem is common among older people, impacting various aspects of their lives. In a survey conducted in the United States in 2002 on older population, it was discovered that participants, regardless of their marital status, with the poorest health had the worst mean household income, while conversely, better health was associated with higher income (HRS, 2007). High costs are incurred when a serious medical condition develops and insufficient coverage of health insurance aggravates the situation (Johnson, Wermin, & Uccello, 2006). Fronstin and Yakoboski (2005) opine employers must ensure employees understand clearly their retirement package, including the quantum of their retirement savings for their post retirement life. In 2015. Australian Securities & Investments Commission stated that for a couple to live comfortably, they need A$59,160 per annum while for singles, the amount is A$43,062 per annum (Australian Securities and Investments Commission [ASIC], 2015). Fronstin and Adams (2012) found that only few companies offer retirement health benefits to their workers. The retirees can increase their retirement savings if their companies cover health benefits. In the United Sates, subsidies to purchase private health insurance are available for people with income between 100% and 400% below the poverty level. However, the applicants would have to waive their right to any retiree-only health reimbursement arrangement (HRA) offered by their former employer.

H1: Health level will have a positive effect on attainment of ideal retirement amount

According to Harrison (2006), having an asset can be beneficial as they offer stock of benefits and also as a store of value. Assets can be classified either as tangible or intangible assets. According to Garger (2010), the value of intangible assets, such licenses, registered trademarks, copyrights, and goodwill, is higher. Tan and Folk (2011) state factors such as when an individual decides to retire, labour and capital markets conditions prior to retirement, expenses prior to retirement, and forecast of income and expenses after retirement determines the amount of savings including assets at retirement. Modugno (2012) found value of retirement assets in US is bigger than other developed countries such as Japan and Canada among others. The amount of assets owned in US is about US$14,000.00 billion compared with Japan with only about US$3,000.00 billion in 2010 (Modugno, 2012). In most retired households, property is their largest investment in a single asset. According to Tan and Folk (2011), a house is not only an asset or an accumulation of wealth that can be passed on to the next generation, it also has a consumption value (from living in it). The retiree has to make a decision on asset allocation between low-risk bond, risky assets, housing and other assets (Yogo, 2016).

H2: Number of assets will have a positive effect on attainment of ideal retirement income

Financial satisfaction relates to how well establish a person is financially. The well-being of a person can be easily identified through financial satisfaction of the individual (Chong, Lim, & Sia, 2013). Financial satisfaction is maintained through a discipline act of regular savings and future planning of investments as only through accumulation of financial wealth can financial satisfaction be achieved easily. In the case of retirement savings, it is essential that certain amounts of savings are set aside for retirement savings. Financial satisfaction, the coexistence of financial status and life outlook with health of an individual can be related to this. A person's financial satisfaction has various influences in order to establish how financially satisfied a person is (Chong, Lim, & Sia, 2013). Financial satisfaction encompasses a person's state of wealth and health, plus his or her outlook in life (Rautio et al., 2013; Wooden & Li, 2014). The level of one's financial satisfaction is greatly affected by demographic and socio-economic characteristics such as health condition, income, and ownership of fixed assets (DePianto, 2011; Garrett & James III, 2013; Sahi, 2013). Diligently depositing some money in the bank and investing in other financial assets like stocks are crucial for retirement planning because of the diminishing source of income for retirees in the future (Yao, Xiao, & Liao, 2015). The most important element in the definition of success by the older population was life satisfaction and it had strong relationship with financial satisfaction among older adults (Voicu & Vasile, 2014). The linkage between wealth and happiness was financial satisfaction and financial satisfication significantly influenced the overall well-being of an individual (Erber, 2013). Seay, asebedo, Thompson, Stueve and Russi (2015) suggested that a strong relationship existed between income and financial satisfaction. The authors also discovered that the presence of financial assets was positively associated with financial satisfaction, as individuals with emergency funds, separate retirement plans, and stock holdings reported higher levels of financial satisfaction. Delafrooz and Paim (2011) revealed that consumers, educators and financial practitioners possess superiority in increasing the financial satisfaction of individuals by increasing the individual's level of financial behaviour. Individual financial applications, such as cash management, credit management, budgeting, and etc. had the most significant impact on an individual's financial satisfaction level. Seay et al. (2015) indicated that retirees with higher tolerance for financial risk experience higher levels of financial satisfaction. Additional, retirees who calculate their retirement needs prior to retirement have higher levels of financial satisfaction. DePianto (2011) and Sahi (2013) point to that socio-economic attributes such as social standing, health condition, affluence, and ownership of fixed assets were significant variables in depicting the level of financial satisfaction. Ownership of assets constitutes a strong variable in depicting the degree of a person's financial satisfaction (Christelis, Jappelli, Paccagnella, & Weber, 2009). Moreover, a person's health status also played an important role in determining the level of heir or her financial satisfaction (Rautio et al., 2013; Stutzer, 2004). An unhealthy individual will deplete his savings and other financial assets in order to pay the medical bills at the expense of other necessities, hence adversely diminishing his level of financial satisfaction (Karlsson & Klohn, 2011; Yilmazer & Scharff, 2014). A survey by Power and Hira (2004), showed most of the respondent retirees were satisfied or very satisfied with all aspects of their retired life which among others include overall financial resources, employer-provided retirement services, and retirement fund growth.

H3: Financial satisfaction will have a positive effect on attainment of ideal retirement savings

Financial literacy refers to the capability of a person to accomplish simple financial computations and to have basic financial knowledge and understanding of related concepts. According to Lusardi and Mitchell (2011), most Americans do not comprehend some critical financial concepts and very little financial literacy (Lusardi, Michaud, & Mitchell, 2011). These concepts include things such as interest compounding, inflation rate, and risk diversification. These problems appear to be far more pervasive among the less educated and among women. Haveman and Smeeding (2006) conclude that higher education provides a platform to improve lifestyles of those of the lower and middle-class members. They further emphasise the importance of education by urging the government to implement policies that create opportunity to the students of lower income and middle-income class a chance to further their education in the tertiary level. They strongly believe that education is the stepping stone to reduce income inequality in society. Delafrooz and Paim (2011) indicate that Malaysian workers with better investment and financial knowledge displayed superior financial behaviours, revealing the positive effect of financial literacy on financial behaviours. Yoong, See and Baronovich (2012) revealed strong association between respondents' financial readiness and their age, education level, and investment practices. As they age, they accumulate more accurate knowledge of their expenditure, cost of living and their future retirement expenditures. This in turn enables them to figure out when they will be ready for retirement, financially. The study also showed that education level strongly affects the financial readiness for retirement of Malaysians. On the other hand, financial knowledge, financial conducts, financial pressure, financial wealth and risk acceptance, as well as demographic variables such as income are important variables and could significantly explain the level of financial satisfaction of an individual (Xiao, Chen, & Chen, 2014). Delafrooz and Paim (2011) also stipulated that higher financial literacy, better individual financial conducts, and lower financial pressure levels increase a person's financial health.

H4: Financial knowledge will have a positive effect on attainment of ideal retirement income

According to Nardi and Yang (2014), bequest motives encourage the accumulation of savings for retirement. Furthermore, the implication of bequest as something luxurious only provides further motivation for people to increase their savings rate. According to online dictionary Investopedia, bequest involves the relinquishment of one's personal properties, shares, bonds, jewelleries, and cash to a person or organisation via a will or estate plan. Bequests can be made to parties such as family and friends. It is called a "devise" if real estate is inherited through a will. A will is a legal process and it allows a person to state the choice of his bequest upon his death (Hayati, Noryati, & Faziatul Amillia, 2012; Keown, 2013; McKeown, Kerry, Olynyk, & Beal, 2012). According to the Laws of Malaysia, when a person dies without a will or in testate, his or her bequests will follow the Distribution Act 1958 (Act 300) as amended on 1 January 2006, to their beneficiaries. However, the Distribution Act 1958 only applies to non-Muslim citizens in Peninsular Malaysia and Sarawak but is not applicable to Malaysian Muslims, indigenous groups in Sarawak and non-Muslim citizens in Sabah. For Malaysian Muslims, they are strictly governed by the Islamic Inheritance Law or the "Faraid Law." Regardless of whether Muslims have written a will or not, their bequests follow the Faraid Law (Hayati et al., 2012). Faraid protects the rights of heirs with predetermined set of privileges of bonfire inheritors while bequest/Wasiyyah permits Muslims to pass on up to one-third of the estate to non-heirs. In addition, they can settle for Hibah if unlimited delegation is their ultimate concern. Donation to charity is called Waqf which represents a Muslim's devotion to Allah to gain payoffs in the afterlife (Ghul, Yahya, & Abdullah, 2015). Consequently, Wasiyyah (bequest), Hibah (gift) and Waqf (charity) are property organisation devices that can be utilised by Muslims to accommodate the laws of inheritance. If a Malaysian Muslim has decided to leave a bequest (wasiyyah), he or she can dispose until thirty-three per cent of his or her accumulated wealth or assets net of debts plus other expenses. However, this one-third of net accumulated wealth cannot be transferred to his or her legal heirs (Alma'amun, 2012). People usually would feel uneasy not leaving a will upon their demise. Will is a legal process and document to avoid unnecessary conflict among family members after the passing of a person and at the same able to alleviate concerns (Chamberlain, 2011). Studies have shown that people o avoid talking about death-related issues such as leaving a bequest or a will (Kahler, 2011), and it is partly because of the norm and culture within a society. In Malaysian and Muslim context, leaving a Wasiyyah is not a plain sailing undertaking. The first obstacle is the rules and regulations in relation to estate management and resolution. In Malaysia, a dying person with a valid will and someone without a valid will is handled under dissimilar regulations and authorities. There is no guarantee that the process of estate management and resolution will be smooth in spite of the participation of diverse jurisdictions and adherence with the provisions of regulations (Ghul, Yahya, & Abdullah, 2015). In addition, demographic background such as ethnicity, sex, age, health status, marital status, income and level of education were important factors in explaining the practice of leaving a will. In general, an individual is more likely to leave a will when his or her age increases (Rossi & Rossi, 1990) and if she or he has assets and strong finances (Greenberg, Weiner, & Greenberg, 2009; Palmer, Bhargava, & Hong, 2006). For those who have experienced major life-cycle events, they have a higher probability of writing a will in the presence of a witness (Palmer et al., 2006). This was because major life-cycle events could bring about either negative or positive changes to a person (Greenberg et al., 2009). For example, negative life-cycle events include a change in marital status from a married person to a widower and being diagnosed with critical illnesses. On the other hand, positive life-cycle events would allow an individual to experience a positive and significant changes in his/her financial wealth and well-being (Sargeant & Shang, 2008).

H5: Bequest will have a positive effect on attainment of ideal retirement amount

METHODS

A survey involving 760 respondents aged 50 years and above from nine districts in Selangor was carried out in the first half of 2011, with a margin error of less than 5%. To ensure a representative sample of the older population, the sample locations are based on probability proportional to the population size procedure at the sub-district level. Within each sub-district, the locations were selected to provide adequate representation of the urban and rural areas as well as the different ethnicities. The dependent variable was the retirees' attainment of ideal retirement savings in percentage. The independent variables were health level (Likert scale: Very Poor [1] to Very Good [7]), assets owned (Number of assets owned: property, estate, motorcar, van/lorry, motorcycle, jewellery, cash, unit trust and company shares), financial satisfaction (Likert scale: Very Unsatisfactory [1] to Very Satisfactory [7]), financial knowledge (Likert scale: Very Poor [1] to Very Good [7]) and will preparation (Dummy variable: 0 [No] and 1 [Yes]). The sampling frame was based on the Census of Malaysia, 2010. Stratified random sampling was used. Details of the descriptive information of the respondents' profiles are shown in Table 1.

Table 1
Respondents' profile

Profile	Total (100%)	Profile	Total (100%)
Sex		Marital Status	
Male	47.0	Married	73.0
Female	53.0	Single/ Separated/ Divorced/ Widowed	27.0
Ethnicity		Level of Education	
Malay	36.8	Non-formal education	14.9
Chinese	40.8	Primary education	32.1
Indian	22.4	Secondary education and above	53.0
Total (%)	100.0		100.0
Sample size	760		760

FINDINGS

To avoid any contravention of the assumptions of normality, linearity, multicollinearity, homoscedasticity and autocorrelation, preliminary analyses were conducted. To ascertain whether the five predictors were statistically significant, multiple regressions were administered, F = 44.314 at 1% level (Table 2). The model as a whole explained more than 20% of the variance in retirees' attainment of ideal retirement amount. The study found that all the five independent variables possess high positive beta values while all the co-efficient values are larger than 1. Consequently, all the five independent variables (health level, assets owned, financial satisfaction, financial knowledge and will preparation) have positive significant relationships with the dependent variable (attainment of ideal retirement amount) at either 1% or 5% level (one-tailed).

Table 2
Regression of the attainment of ideal retirement amount

Variable	Unstandardized Coefficients		T	Sig. (one-tailed)	Collinearity Statistics	
	B	Std. Error			Tolerance	VIF
(Constant)	-8.224	3.664	-2.245	0.013		
Health level	1.175	0.628	1.871	0.031	0.876	1.141
Assets owned	4.695	0.553	8.487	0.000	0.728	1.374
Financial satisfaction	2.499	0.721	3.464	0.000	0.730	1.370
Financial knowledge	1.092	0.601	1.817	0.035	0.746	1.341
Will preparation	5.414	2.359	2.295	0.011	0.913	1.095
R Square = 0.227; Adjusted R Square = 0.222; F =44.314* (p-value = 0.000)						
Durbin-Watson = 1.573						
Dependent Variable: Attainment of ideal retirement amount						

This study revealed good health, assets owned, financial satisfaction, financial knowledge and will preparation are related to the attainment of ideal retirement savings. Health level affects one's capability to acquire current and future income and therefore, greatly influences the attainment of ideal retirement funds. In worst case scenario, health problems may force some to retire early with insufficient retirement savings to maintain their lifestyle. Therefore, good health has a positive effect on the attainment of ideal retirement amount and hypothesis H1 is significant at 5% level. This hypothesis is supported by other studies (Gruber & Helen, 2009; HRS, 2007).

Retirees face a substantial loss of earnings which translates into lower standard of living if they do not have adequate savings. Therefore, accumulation of assets during working life is crucial for the attainment of ideal retirement funds as the former can be a source of income to cushion the loss of earnings (Harrison, 2006). On the other hand, measures such as setting aside some money and investing in other financial assets such as property, estate, unit trust and company shares are crucial for retirement planning because of the diminishing source of income for would-be retirees. As a result, hypothesis H2 is supported at 1% level. Therefore, assets owned has a positive relationship with the attainment of ideal retirement funds and this finding is confirmed by other studies (Belke, Dreger, & Ochmann, 2014; Yao, Xiao, & Liao, 2015).

Financial satisfaction has a positive effect on the attainment of ideal retirement amount and hypothesis H3 is significant at 1% level. Consequently, peoples' ability to save and their desire to invest for retirement might be undermined by their financial illiteracy, with adverse effects on their well-being in old age (Voicu & Vasile, 2014; Yao et al., 2015).

Many people lack financial knowledge to plan for their retirement which leads to low level of retirement wealth accumulation. Thus, financial knowledge has a positive effect on the attainment of ideal retirement income. As a result, hypothesis H4 is supported at 5% level and the finding is confirmed by Delafrooz and Paim (2011).

A bequest can be made to various parties such as family and friends and it encourages savings and accumulation of other forms of wealth. Indirectly, it greatly influences the attainment of ideal retirement funds. Therefore, bequest has a positive effect on the attainment of ideal retirement amount and is significant at 5% level which means hypothesis H5 is supported. This finding is consistent with that of Nardi and Yang (2014).

Implications and Limitations

Malaysia will be an ageing country by 2025. Thus, ensuring social security and quality of life for the ageing population is vital. Currently, there is rising concern among the working population that their retirement funds are insufficient to maintain their lifestyle during old age as a result of high inflation, rising household expenses coupled with low household income and high medical expenses which may their retirement savings. Thus, EPF may have to consider revising the contribution rates of either the employee or employer or both every three to five years to ensure the well-being of retirees during their old age. In addition, it may also consider allowing employees to withdraw their money from Account 2 to purchase medical insurance for themselves and their spouse in order to reduce the risk of high medical expenses during the end of their life. These actions may directly or indirectly stimulate growth of the insurance and medical industries.

The first limitation of this study is its cross-sectional data. A longitudinal research may capture more valuable and useful information on the attainment of ideal retirement funds. In addition, a comparative study between rural and urban retirees would be useful to gain insights whether it is cheaper for retirees to live in rural areas.

CONCLUSION

This study had used Maslow's hierarchy of human needs of to examine the relationship between the attainment of ideal retirement income and health, assets, financial satisfaction, financial knowledge and will preparation as independent variables. The results showed all these five independent variables are positively related to the attainment of ideal retirement income.

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Indonesian Productivity Growth: Evidence from the Manufacturing Sector in Indonesia

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ABSTRACT

This study estimates Technical efficiency (TE) and Total Factor Productivity (TFP) through a stochastic frontier analysis and decomposes growth into technological progress, technical efficiency change, and scale for the Indonesian manufacturing sector. Global economic slowdown characterises the period of study (2007-2013), as well as peak and fall of commodity prices, massive global integration and development of a Master plan for Indonesia (MP3EI). This study looks at patterns of productivity as important sources of growth. Results are aggregated based on technological intensity, firm size, capital/output ratio, labour skills, and location. The findings show that companies perform differently as those factors vary, and while larger companies are more efficient, smaller ones have higher rates of TFP growth, mainly through technological progress and scale. The TFP had moved from initial negative levels to positive ones. Firms with low tech, low capital/output ratio, and more skilful workers have the highest TFP.

Keywords: Indonesia, manufacturing industry, technical change, total factor productivity, technical efficiency

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INTRODUCTION

The Indonesian economy expanded significantly in the last three decades. The GDP annual growth rate averaged 5.3 percent from 2000 to 2017; industrial production grew an average of 3.21 percent annually from 1994 to 2017 and accounted for more than 60 percent of total exports. In addition, the country's abundant natural resources and huge labour force (more than 120 million workers and huge natural endowments) allow for more strategic allocation of factors, but it also calls for a more efficient employment of them. In line with this, in 2011, the Indonesian government developed the Masterplan for Acceleration and Expansion for Indonesian Economic Development (MP3EI) for the next 15 years (2011 to 2025), a particular effort to strategically divide up the country into several economic corridors. Java, the most populous island and biggest contributor to the national GDP, is defined as the industrial corridor, a driver for manufacturing and service industries. However, regardless of its rapid industrialisation, Indonesia is plagued by low competitiveness, increase in labour costs to output (27% since 2011), increase in energy prices, global uncertainty affecting key exporting commodities, instability of government regulatory framework, dependency on imported raw materials, and low efficiency. This situation raises the question if the country would be able to compete globally as it liberalises its economy and if the growth rates are sufficient to support its strategic and ambitious expansion plan for the coming decades.

Some empirical studies suggest the Indonesian manufacturing industry suffers from deindustrialisation (Aswicahyono & Hill, 2015), small capitalisation and sluggish growth calling. Despite these, industrial production in Indonesia averaged 3.21 percent (1994-2016), and employment increased by 16% (2009-2013).

It is worth mentioning SMEs are vast majority of firms and generate growth in employment and business by low production methods and low capitalisation to generate profit (57.2 million, 2016 Databoks, Katadata Indonesia). Additionally, they employ mainly labour with low skills. This raises the question if size, capital, and skills matter for high productivity in Indonesia.

This study applies a Stochastic Frontier Approach (SFA) to measure efficiency and to estimate the different components of Total Factor Productivity (TFP) and output growth to address growth challenges, the central points of the MP3EI. As Indonesia is experiencing a demographic boom, it also raises the question to what extend its labour is supporting its growth. This paper uses a *Translog* production function and the SFA to estimate and break down the growth in output of the manufacturing industries in Java Island, Indonesia, from 2007 to 2013.

The SFA helps break down the growth base on changes in inputs (capital and labour), scale effects, technical progress or by technical efficiency changes. This study also aims to capture differences in TE and TFP across enterprises as factors such as location, size, human resources, and the degree of capital to output, and technology intensity, which may vary across the sample.

LITERATURE REVIEW

This study estimates TE and TFP for manufacturing at firm level, allowing size, skills, capital, technology, and location to determine changes in the firm's performance. Past studies have focused on Technical

Efficiency, Total Factor Productivity, and factors affecting output expansion as size, location, ownership and skills. Empirical studies such as by Mokhtarul Wadud (2004) found TE in Australian textile and clothing firms depended on firm's age, output size, capital intensity, and legal status. Sheng and Song (2013) found that larger companies in China had better TFP performance, and that the capital/labour ratio were related negatively to TFP. Oh, Heshmati and Lööf (2014) (1987-2007) found that large firms in Republic of Korea experienced more significant TFP growth (2.59) than the medium (1.92) and micro (1.75) firms, while high-tech enterprises undergo more substantial TFP (3.39). Liu and Li (2012) using SFA and a *translog* function found human capital as a primary source of growth versus labour and capital in China. While Scale Component (SEC) was large, TEC was rather small. Labour had pushed costs up but had provided the least effect on input growth. Only high-tech enterprises saw marked improvements in TE. Sari, Khalifah and Suyanto (2016) found that foreign owned enterprises enjoyed higher TFP but lower efficiency than the local ones in Indonesia.

Studies on TFP growth at sector level in Indonesia (Margono & Sharma, 2006) showed size, location, and ownership were positively related to TE, while size but not location influenced TFP. Interestingly, TE and TFP values vary across firms with notable difference in performance across firm groups. The TP was found to hinder growth while TE supported it. Different TFP growth rates estimations, i.e. (Timmer, 1999), TFP based on growth accounting indicates 2.8 % increase (1975-1995). Aswicahyono and Hill (2002) reported TFP at 2.3 % (1975-1993) while (Margono et al., 2011) found a 7.5 % drop in TFP due to TE (1993-2002).

Saliola and Seker (2011) who conducted macro level analysis for manufacturing industries in 80 countries found Indonesia having one of the largest aggregated TFP productivities (0.27), and average TFP (0.05) in between 2008 and 2009. However, the elasticity of output with respect to capital was among the lowest (0.02). Park (2012) concluded that TFP growth was supported by human capital, the primary source of growth for Asia. These findings opens the possibility of a change in industrial pattern in Indonesia, from a TFP initially supported by TEC due to labour, then to capital (initial technological upgrade), but lately the slow growth due to skills, materials and other resources needed to complement labour and capital and allow for positive TEC, SEC and TP effects. While labour and capital may support industrial output growth, the expansion is thought to be below potential.

The Technical Efficiency (TE) can be measured by Malmquist index, Data Envelope Analysis (DEA) and Stochastic Frontier Analysis (SFA) (T. Coelli, Estache, & Parelman, 2003). The SFA is a parametric estimation while DEA is non-parametric one. Furthermore, the SFA provides standard errors of production coefficients whereas the DEA cannot do so (Bera & Sharma, 1999; Margono & Sharma, 2006). The error term in the stochastic frontier estimation shows the level of efficiency (inefficiency) and from that, to figure out if the use of available inputs is supporting or worsening output levels (Kumbhakar & Lovell, 2003).

The TFP growth can be estimated either by growth accounting or by production function. The growth accounting approach assumes full TE and uses TP and TFP growth synonymously. On the contrary, the production function method estimates TFP growth without the assumption of full TE and decomposes its components (Margono & Sharma, 2006).

METHODS

The Total Factor Productivity (TFP) growth is decomposed into a rate of technological progress (TP), a scale component (SEC), and a change in technical efficiency (TEC). The TP is measured by the partial derivative of the production function with respect to the time, the SC is the elasticity contribution to the TFP growth, and the TEC is the derivative of TE with respect to time. The model also estimates the elasticity of output with respect to labour and capital.

The frontier production function indicates the maximum output that can be obtained considering existing technology and available inputs of production. If firms operate on the frontier, they are technically efficient. The production function and an inefficiency function are simultaneously estimated by the SFA using a functional form of the production function.

The specification for a non-negative random component in the error term is allowed for technical inefficiency. According to Battese and Coelli (1995, p. 329), a production function and an inefficiency function can be estimated simultaneously by the SFA (Kalirajan & Shand, 1994, p. 15) modelled as:

$$Y_{it} = f(x_{it}, t;\ \beta).\mathrm{Exp}(v_{it} - u_{it}) \qquad (1)$$

Where y_{it} is the output of the i'th firm in t period, x_{it} is a vector of inputs, and β is a vector of the parameters to be estimated. The error term v_{it} is assumed to be independently and identically distributed, N (0,). The u_{it} is technological inefficiency in production assumed as a firm-specific, non-negative, and independently distributed but truncated at zero of the normal distribution.

The technical efficiency of each firm is based on the expected maximum value of Y_{it} conditional on $\mu_{it}= 0$, and the values of $v_{it} - u_{it}$ are evaluated at the maximum likelihood estimation (Coelli, Estache & Parelman, 1998, cited in Kompas 2004, p. 1634). F as E is defined as the expectations operator, the conditional expectation of TE can be defined as:

$$TE_{it} = \frac{E\,(Y_{it}|u_{it}, X_{it})}{E\,(Y_{it}|u_{it} = 0, X_{it})} = e^{-u_0} \qquad (2)$$

This study uses a Translog production function based on functional form under time-varying technical efficiency model. Salim et al. (2009, p.1866) argue that a flexible functional form –translog- can be used, helping to reduce the risk of errors in the model specification. The Translog model allows for non-constant returns to scale and allows a nonlinear production function. This study defines the translog production function as:

$$\ln y_{it} = \beta 0 + \beta c \ln c_{it} + \beta l \ln l_{it} + \beta tt + 1/2[\beta cc\,(\ln c_{it})^2 + \beta ll\,(\ln l_{it})^2 + \beta tt\,(t)^2] + \beta cl \ln c_{it} * \ln l_{it} + \beta ct\, t * \ln c_{it} + \beta lt\, t * \ln l_{it} + vit - uit\neg \tag{3}$$

Table 1
Definition of variables in the production function

Variables	Definitions
Y	Output (million rupiahs) measured by the value of goods produced which is deflated by wholesale price index for five-digit ISIC industries based in constant year 2000 prices
C	Capital (million rupiahs) deflated by wholesale price index for manufacturing capital goods in constant year 2000 prices
L	Labour which is total workers per working day

From this definition, for a general *translog* model and time-varying technical efficiency, technological progress and scale component are expressed as (Kumbhakar & Lovell, 2003):

$$TP = \frac{\partial \ln(y_{it})}{\partial t} = \beta_t + \beta_{tt} t + \beta_{ct} \ln c_{it} + \beta_{it} \ln l_{it} \tag{4}$$

$$SC = (e-1)\sum_j \left(\frac{e_j}{e}\right)\dot{X}_j \tag{5}$$

Where e_j is the elasticity of output with respect to input, and $\dot{X}_i$ is growth rate of input. The elasticity of output with respect to each input measures the relative change in each input owing to a relative change in output. Elasticity can be expressed as (Verbeek, 2008, p. 56):

$$el = \beta l + \beta ll \ln l_{it} + \beta cl \ln c_{it} \tag{6}$$

$$ec = \beta c + \beta cc \ln c_{it} + \beta cl \ln l_{it} \tag{7}$$

In this study, elasticity is estimated as the value of input at i'th firm in t time.

From TE results from equation (2), the TEC can be defined as (Khalifah & Abdul Talib, 2008, p. 93):

$$TEC = \frac{TE_{i(t+1)}}{TE_{it}} \tag{8}$$

From equation 7 to 8, the TFP growth decomposition is calculated by

$$T\dot{F}P = TP + SC + TEC \tag{9}$$

This study looks at 14,783 manufacturing firms in Java Island from 347 five-digit ISIC for the period of 2007-2013. Data was collected on yearly basis by the national Statistical Bureau of Indonesia, Badan Pusat Statistik (BPS), under the national survey for medium and large manufacturing enterprises. This paper classifies firms based on five different criteria to allow a more precise comparison of the four different growth components and its inputs. Location indicates the province where the businesses operate. Size reveals the scale, large (L) more than 100 workers or small and medium enterprise (SME). A Capital/Output ratio distinguishes companies with low capital (LK) if the ratio is less than 10%, and firms which are Capital Intensive (HK) otherwise. Human resource intensity distinguishes between firms that are Human Resource based (HRI) if non-production to production labour is higher than 30%, or if companies are Labour Intensive (LI) if the ratio is below 30%. Finally, firms are grouped based on Technology Intensity Definition Classification (Rev 3) based on R&D intensities: Low Technology (LT), Medium-low Technology (MLT), Medium and High Technology (MHT), and High Technology (HT). Considering R&D in Indonesia, the HT and the MLT are then grouped.

Table 2
Statistical performance of the Manufacturing Industry (2009 and 2013)

	Total number of Firms		Total number of employees (10,000)		Industry Value Added (Billion Rupiah)		Worker Productivity (1,000 Rupiah)	
	2013	2009	2013	2009	2013	2009	2013	2009
LT	16,855	16,024	292.883	336.865	358,164	713,174	1,452,461	2,213,365
L	4,171	4,401	246.459	291.169	331,139	665,266	1,599,210	2,396,900
SME	12,684	11,623	46.424	45.696	27,023	47,908	699,326	1,152,173
MHT	2,557	2,943	67.322	81.733	304,898	516,497	3,559,452	3,941,711
L	1,143	1,199	60.905	72.664	290,793	477,844	3,801,077	4,112,900
SME	1,414	1,744	6.417	9.069	14,104	38,653	1,213,515	2,813,645
MLT	4,553	4,646	70.419	80.132	132,331	243,035	1,373,875	2,136,434
L	1,371	1,483	57.763	66.191	119,872	216,499	1,546,756	2,400,088
SME	3,182	3,163	12.655	13.940	12,460	26,538	862,637	1,420,877
Total	23,965	23,613	430.623	498.729	795,393	1,472,706	6,385,788	8,291,510

Note: Low Technology (LT), Medium-Low Technology (MLT), Medium-High Technology (MHT), Large size (L), Small and Medium Enterprise (SME)

RESULTS

The technical performance of manufacturing industries in Indonesia shows mix results. While the number of enterprises and efficiency (input/output) contracted from 2009 to 2013, the number of total employees, industry value added, worker productivity (Rp output/worker), and production to installed capacity increased. Larger labour costed 27% more, while expansion and output were slow. The worker productivity rose only slightly above the growth in employment cost meaning that the real worker productivity was minimum. As most industries are labour-intensive, the cost of labour highly influences the value added. The decrease in efficiency (-8%) indicated that even though there were more available inputs, the ratio of input to output had declined over time. It is worth mentioning that prices in particular sectors (i.e. food) experienced sharp rises in several periods as commented by (Esquivias, 2017, p. 43) influencing output value and productivity indicators.

The estimates of the *Translog* model show that the parameter of capital is positive and significant when tested at 1 percent level, confirming a corresponding increase in output with capital injection. Furthermore, the coefficient of capital squared is positively significant at 1 per cent level denoting that a diminishing return to capital does not exist. Similarly, both the parameters of labour and the estimate of the squared level of labour are positive and significant, meaning that the diminishing return law does not hold in labour. While this study found increasing returns to scale for both labour and capital in overall manufacturing, (Margono & Sharma, 2006) found negative or constant returns to scale in three top manufacturing industries, concluding that those sectors are more capital rather than labour-material oriented. The results of this study differed as industries are found to be more labour oriented. However, a possible explanation is that industries experienced larger capital expansion in the 1990s; the expansion after that period was due to increase in labour and skilled labour (not only labour force, but also higher skills).

The coefficient of the interaction in variables helps in the analysis of the cross effect of the inputs. For labour and capital, the coefficient is negative and significant at 1 percent level meaning that labour and the capital have a complementary effect. Time (squared time) as a technological progress indicator is significant and shows a positive relationship with the output.

Table 3
Regression estimates

	Coefficient	Standard-error	t-ratio
Constant	8.559	0.138	61.818
Labour	1.683	0.032	51.315
Capital	0.207	0.014	13.982
ln*L* x ln*L*	0.002	0.002	0.737
ln*k* x ln*k*	0.008	0.001	13.691
ln*L* x ln*k*	-0.048	0.002	-23.929
T	0.045	0.013	3.350
ln*L* x t	0.004	0.001	3.118
Ln*k* x t	-0.017	0.001	-17.840
t x t	0.041	0.000	54.438
sigma-squared	2.073	0.026	79.404
Gamma	0.718	0.002	296.907
Mu	2.440	0.023	101.906
Eta	-0.023	0.001	-17.618
Number obs	103,481		
Log likelihood function = -141544.53			
LR test of the one-sided error = 50 020.92			

The parameter showing interaction between capital and time was negative and highly significant meaning that the former exhibited a non-neutral technological regress. Additionally, input exhibited technological progress with a positive and significant material-time parameter indicating that producers can keep similar output with relatively less inputs from labour.

DISCUSSION

This study's aggregate results in addition to TE estimates and TFP growth are based on location (province), size (large and medium-small), the degree of human resource intensity (labour or skill intensity), the level of capital to output, and technological intensity. By aggregating the results, it is possible to capture how the TE and the TFP vary when firm characteristics change. With factors largely differing across the sample, average values of firms aggregated only at one (or few) particular aspect will offer an incomplete picture. Table 4 shows the estimates of the elasticity of output with respect to capital and labour, input growth, technical efficiency (TE), and the three components of Total Factor Productivity (technical efficiency change, technological progress, and scale component). All estimates are aggregated based on technological intensity.

Technical efficiency ranged between 0.08 to 0.46 for the 22 industries, and on average registered 0.1471, a small and falling TEC. About 90% of the firms registered TEC below 0.33, indicating they are far from the frontier, 7% are between 0.33 and 0.66 and only 3% within 0.66 to 1.

All 22 analysed industries (ISIC at 2-digit) ended the period with lower TE values, from average TE of 0.16 in the first period to 0.13 in the last period, indicating a general loss of efficiency in industrial activity. While lower TE was also noted in other empirical studies, the results differed as TE was dragged down TFP, contrary to what Margono and Sharma (2006) reported. At three-digit ISIC level, only 5 out of 67 sub-industries registered positive changes in TE. A possible interpretation is that more inputs are available; however, the output is not growing correspondingly as inputs are not balanced.

Table 4
Growth decomposition for three industrial groups (2007-2013)

	Output elasticity				Input growth (%)	
	eK	eL	e Total		K	L
Low Technology	0.091	1.025	1.116		0.065	-0.004
Medium-Low tech	0.093	1.005	1.098		0.068	0.007
Medium-and high-tech	0.085	1.005	1.090		0.047	-0.007
Average	0.090	1.018	1.108		0.063	-0.002
			TFP Components 2009-2015			
	TE	Scale	TP	TEC	TFP	YGrowt
	(1)	(2)	(3)	(4)	(2) + (3) + (4)	(6)
Low Technology	0.142	-0.000	-0.009	-0.054	-0.043	0.116
Medium-low tech	0.149	0.000	-0.017	-0.054	-0.050	0.135
Medium-and high-tech	0.162	-0.001	-0.016	-0.050	-0.047	0.138
Average	0.147	0.000	-0.012	-0.054	-0.046	0.124

Notes: Elasticity of Output with respect to capital (eK), Elasticity with respect to labour (eL), Total elasticity (eTotal). Technical Efficiency (TE), Technological Progress (TP), Technical Efficiency Change (TEC), Total Factor Productivity (TFP)

In terms of firm characteristics, big businesses have 40% larger TE values. Companies with a high Human Capital share (more than 30% of labour in non-production positions) registered 38% higher TE than that of labour-intensive firms (predominant production workers). Firms with low capital/output ratios recorded 38% larger TE estimators. The combination of these three factors allows companies within these groups to improve their average estimates to 0.335 rather a general average of only 0.147; these results are similar with other empirical studies where only top industries were selected (Margono & Sharma, 2006) .

Table 5
Growth decomposition for aggregates and three industrial groups

	TE	TEC	TP	SEC	TFP Avg.	TFP 07-08	TFP 12-13
By Size							
Large	0.204	-0.046	-0.027	0.005	-0.048	-0.147	0.049
Small	0.120	-0.057	-0.006	-0.002	-0.045	-0.144	0.054
By Technology							
LT	0.142	-0.054	-0.010	-0.000	-0.044	-0.142	0.054
MHT	0.162	-0.050	-0.017	-0.001	-0.048	-0.148	0.052
MLT	0.150	-0.055	-0.017	0.000	-0.051	-0.151	0.049
By Province within JAVA Island (Industrial corridor)							
DKI Jakarta	0.163	-0.050	-0.021	-0.000	-0.051	-0.150	0.050
West Java	0.166	-0.051	-0.015	-0.000	-0.046	-0.146	0.054
Central Java	0.095	-0.063	-0.005	-0.000	-0.047	-0.142	0.047
DIY	0.074	-0.065	-0.005	-0.002	-0.052	-0.150	0.054
East Java	0.138	-0.055	-0.008	0.000	-0.042	-0.142	0.054
Banten	0.220	-0.042	-0.027	0.000	-0.049	-0.149	0.051

The LT industries also account for 60% of the firms with high TE. Out of the 462 companies with high TE, 80% of them have a low capital to output ratio. Both LT and low capital to output ratio indicate an important pattern in the light manufacturing industry, labour intensive rather than skills base, and sectors with low capital formation. Even though on average, firms with higher human capital indexes perform better, more than 60% of the firms with high TE belong to industries with low human capital index. The striking point is that 12% of firms enjoying high TE in 2007 (out of 525) lost high TE index. A similar effect prevails among medium level TE (0.33 <TE> 0.66) with 25% of them losing their TE value from 2007 to 2013. Only 4% of firms enjoyed high TE in 2007 and 3% in 2013, while only 8% enjoyed medium TE in 2007 and 6% in 2013.

Table 6
Technical Efficiency by industrial groups based on capital intensity, firm size and skills level

	High Capital Intensive				Low Capital Intensive				All Avg
	Large		SME		Large		SME		
	HRI	LI	HRI	LI	HRI	LI	HRI	LI	
LT	0.256	0.128	0.133	0.085	0.358	0.194	0.246	0.141	0.142
MHT	0.238	0.156	0.124	0.087	0.319	0.246	0.205	0.147	0.162
MLT	0.216	0.159	0.132	0.067	0.287	0.234	0.247	0.162	0.150
Total	0.245	0.140	0.131	0.081	0.335	0.214	0.240	0.146	0.147

Notes: Low Technology (LT), Medium-High Technology (MHT), Medium-Low Technology (MLT). Large Size (L), Small and Medium Enterprise (SME), Labour Intensive (LI), Human Resource base (HRI)

In terms of TFP estimations, the overall average TFP experienced by manufacturing industries within Java is negative (-0.045), indicating a contraction of the production possibility frontier. The different components of TFP are unable to shift the frontier towards an expansion, and in fact have caused it to contract by inefficiencies on inputs or lack of technological development. However, for the Years 2011, 2012, and 2013 of analysis, the TFP registered positive values for all industrial groups (average of 0.014 and 0.05 for 2011-12 and 2012-13 periods). Low Technology industrial group and SMEs tend to perform better overall.

Table 7
Estimators based on industry group, size, and human resources

	TE		TEC		TP		SEC		TFP		Avg
	L	SME	L	SME	L	SME	L	SME	L	SME	
Low Technology (LT)											
LI	0.167	0.110	-0.050	-0.059	-0.022	-0.002	0.007	-0.003	-0.045	-0.043	-0.043
HRI	0.312	0.189	-0.035	-0.049	-0.034	-0.012	0.002	-0.002	-0.049	-0.044	-0.046
Medium-High Technology (MHT)											
LI	0.211	0.118	-0.045	-0.055	-0.029	-0.007	0.004	-0.004	-0.050	-0.046	-0.047
HRI	0.286	0.166	-0.037	-0.049	-0.034	-0.016	0.003	-0.004	-0.048	-0.050	-0.049
Medium-Low Technology (MLT)											
LI	0.204	0.106	-0.045	-0.062	-0.030	-0.009	0.005	-0.001	-0.050	-0.051	-0.050
HRI	0.257	0.194	-0.040	-0.047	-0.033	-0.019	0.003	-0.004	-0.052	-0.051	-0.051
Avg	0.204	0.120	-0.046	-0.057	-0.027	-0.006	0.005	-0.003	-0.048	-0.045	-0.046

Notes: Large (L), Small and Medium Enterprises (SME), Labour Intensive (LI), Human Resource base (HRI)

Technical Efficiency Changes (TEC) indicate the rate at which an entity moves towards or away from production frontier. The TEC experienced negative and decreasing value for the whole period and it is related to the productive use of factors of production; for instance, it indicates the combined inputs are unable to produce efficiently, remaining far from the frontier and below potential. The TEC had worsened over time, from an average -0.050 in 2007-2008 to -0.056 in 2012-2013 period (equivalent to 12% deterioration). The results are in line with other empirical studies which pointed showed a deterioration of the TE across time (Margono & Sharma, 2006; Margono et al., 2011).

An overall low technical efficiency changes (TEC) of -0.053 caused the contraction of the production possibility. The significant presence of labour-intensive manufacturing and relatively low capitalisation may support the fact that there is little improvement in the use of inputs. Even though more factors are available in the industry, the technical improvements needed for the expansion of the frontier are not present. It is also possible that idle resources are being discharged (higher unemployment) or discouraging capital formation.

The Technological Progress (TP) is related to shifts in the production function over time. Improvements in information technologies, technological disruptions or absorption, new production techniques, improvements due to research and development, as well as other factors can support technological change. It has implications in the increase of productivity related to factors of production. Overall TP registered is -0.0123 for the whole period. The best performance in TP is the LT industrial group. Interestingly, all three industrial groups improved their TP values significantly, bringing it from -0.134 in 2007 period to 0.109 (positive) in 2013. These results are also in line with the technical performance shown in general statistics in Table 2, where the real production to installed capacity improved from 71% in 2009 to 77% in 2013. A positive trend in TP indicates that inputs become more productive, for instance they increase the output per factor, pushing the production possibility frontier outwards. However, as reported by (Margono et al., 2011, p. 670), a larger inefficiency offsets the growth in TP. The worker productivity (Rupiah / worker) in industrial statistics (Table 2) is reported to be almost 25% higher from 2009 to 2013. Labour in manufacturing increased by 15% while total value added increased more than 50%, indicating a period characterised by an increase in the units in labour/output.

The increase of the rate of TP in the last years indicates an effective path towards the recovery of industrial activity. Industrial policy actions started in 2006 to positively affect the technological improvements that could help to maintain its comparative advantage, creating a new edge for competition, a more efficient allocation of factors, and improvement in the quality of factors of production.

Economies of scale refers to the contribution of factors of production (due to changes) to output growth. New factors or better use of factors are expected to drive the growth. However, other components need to complement them, as shown in Table 3. Savings in the use of factors (particularly capital) also help firms to increase output per unit of inputs. However, it may need to be complemented by resources (i.e. higher skills, techniques or materials). Even though industries performed differently, overall SEC is negative, -0.00012. At particular periods, LT and MLT industrial groups registered positive SEC values supporting the idea that when low technological industries employ a right proportion of inputs, they can successfully push forward the output per input. The MLT performance in average is better than others, positive for the whole period, even though subtle at 0.00077. It coincides with the only industrial group that experienced positive growth in input labour and the largest input capital growth as seen in Table 4. It is worth mentioning that almost 15% increase in manufacturing labour force from 2009 to 2013 give relatively small SEC as a contributor to TFP. This represents a loss of potential industrial growth with the so-called "demographic dividend", as perhaps investment did not adequately support increases in labour. New workers may not have required skills or take time to adapt, or shift to higher skill industries was slow.

Positive and moderate increasing returns to scale in labour represent a pro-cyclical behaviour in the use of factors, as with increases in scale corresponds with that of labour supply, but negative when there is a decline in the share of the input. However, since the economies of scale are moderate, increases in labour are not able to strongly influence TFP growth. In fact, manufacturing output has been growing slowly despite the increase in labour.

Table 8
Elasticity of output with respect to labour and capital by technology, size and skill

	EL			EK			E		
	Large	SME	Avg	Large	SME	Avg	Large	SME	Avg
Low Technology (LT)									
LI	0.977	1.054	1.032	0.019	0.120	0.091	0.996	1.174	1.123
HRI	0.936	1.021	0.989	0.035	0.121	0.088	0.971	1.142	1.077
Medium-High Technology (MHT)									
LI	0.961	1.038	1.009	0.028	0.120	0.085	0.989	1.158	1.094
HRI	0.938	1.009	0.978	0.041	0.118	0.085	0.979	1.127	1.063
Medium-Low Technology (MLT)									
LI	0.954	1.036	1.010	0.036	0.121	0.094	0.991	1.157	1.104
HRI	0.936	1.004	0.978	0.039	0.122	0.090	0.975	1.126	1.069
Avg	0.963	1.044	1.018	0.027	0.120	0.090	0.990	1.164	1.108

The elasticity of output with respect to labour (EL) and capital (EK) at industry level show a larger contribution of labour over capital. The overall average of capital is surprisingly small. Increases in labour allow higher returns in output versus increases in capital. The EL increased slightly from 1.015 to 1.020, showing a similar pattern for all industries. Additional units of labour then foster the expansion of output by more than one in the whole industry, supporting the model of manufacturing in Java mainly oriented to labour-intensive industries and capital saving. It can be concluded that manufacturing industries are supported primarily by large pool of labour pool rather than by skills. While this offers the positive side of being able to absorb large workforce, the downside is it low value-added. In fact, large labour force with better practices and larger capital may spur stronger growth. As EL values decrease over time, it may indicate labour productivity to be below required levels as there are not significant increases in capital or skills. Indonesia may be losing the potential of a demographic dividend by low productivity, lack of investment, low-tech capability and increasing labour costs. This pattern indicates that the country must upgrade its industry if it is to continue absorbing large labour force. In this line, SME enjoying 8% higher EL over large firms.

In relation to EK, the SMEs showed 4.5 times (450%) larger elasticity than big businesses. However, as the value of the EK is small (0.12), it does not make such a significant impact. Overall, the SMEs enjoyed 15% higher EK than the large companies indicating its potential to gain in productivity and efficiency with larger (and better) additions of labour and capital.

Manufacturing in Indonesia shows high dependence on labour inputs to create greater impacts on output while it is saving in capital. The estimator of elasticity of output with respect to capital felt from 0.10 to 0.071, meaning the returns of capital experienced a negative trend concerning the contribution to output by almost 30%. The industries are still dominated and supported by labour.

While it is expected that labour-intensive industries may experience growth with improvements in capital, each additional unit of capital adds less and less to output with an opposite effect. Manufacturing is continuously expanding due to rapid growth of labour (more than 10% in the period) rather than capital (less than 1%), indicating a manufacturing which is capital saving, but also showing that both labour and capital are becoming less productive over time. This indicates that the industry is slow to upgrade, losing productivity and compromising the target needed to keep growing.

Overall, the total output elasticity felt from 1.12 to 1.09 showing an unbalanced growth of inputs. Even though additional labour is absorbed, they do not compensate for the lack of investment, confirming that inputs are complementary rather than substitutes.

CONCLUSION

This study estimates Technical Efficiency and Total Factor Productivity focusing on its three main components (TEC, TP and SEC) to find patterns of productivity growth in Indonesian manufacturing sector. As Indonesia aims for higher growth rates to spur employment and development, promote national welfare and improve competitiveness, productivity is at the heart of achieving this dream. The production function shows that both capital and labour are experiencing increasing returns offering possibilities for expansion of output and efficient absorption of new inputs. Both labour and capital appear as complementary factors, though labour plays a far more critical role and is experiencing larger expansion than capital. On the other hand, capital has been falling although capital is experiencing saving technological progress, allowing the country to keep output levels with relatively less capital inputs. However, the growth of labour requires higher capital injection to increase output. The time variable indicates positive tech-progress. However, the rapid growth of absolute number of labour requires higher amounts of capital to continue increasing output.

The results of the estimations of TE and TFP are aggregated based on technological intensity (low, medium-low, and medium-high), the size of a firm (large or SME), capital/output ratio (low or high), labour skill intensity (labour intensive or skill), and location (province). Overall, it was found that TE was rather small for 90% of the firms and the TFP was negative. Interestingly, larger firms reported 42% higher TE estimations compared with SMEs and positive scale component (0.0052). However, the SMEs (large majority) enjoyed better technological progress.

Companies with higher shares of skilled workers (HRI ratio) registered 38% higher TE than the labour-intensive firms. Similarly, businesses with low capital/output ratios recorded 38% larger TE estimators. The combination of these two factors plus technological intensity allows firms to improve their average TE estimates to 0.335 rather a general average of 0.147 (125% better results) indicating a pattern of productive firms in the country. Among those with better performance are firms characterised by low technology, representing 60% of firms with high TE, and out of them, 80% have low capital/output ratio, indicating the important role of labour-intensive firms. Low-tech firms also registered the largest TFP.

However, efficiency performance (TE) in the country experienced a slowdown, as on average, companies ended up the period of analysis with 18% lower TE. It was also found that the Average TFP was negative for all industries. However, in the last three periods, all industries experienced positive TFP, mainly promoted by TP and small-scale component improvements, indicating a possible catch up process after the implementation of MP3EI. There is evidence of TEC following a negative trend with factors less productive over time, indicating Indonesia relies more on technological changes as well as higher capital to push its frontiers. There was significant technological progress over the last few years, and responsible for the main changes in TFP. Low TEC indicates that inputs are not adjusting with the changes in technology, possibly related to low technological absorption of labour. Scale component is improving, but its contribution to TFP growth is rather small, meaning that the demographic boom is not causing a multiplier effect in output growth.

Labour contributions to output growth are larger than inputs from capital. Output has low elasticity on capital indicating a capital saving manufacturing. The heavy dependency on labour-intensive activities and the spiralling labour cost may slow down productivity.

The SMEs registered more important TFP improvements compared with large firms. In 2013, the TFP in small capital/output ratio performed 50% better than that of high capital/output ratio, mainly low technology. Differences in size, quality of human resources, technological capability and capital/output ratio influence the way companies perform, while location only at a lesser degree.

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Modelling the Economic Cycle between GDP and Government Spending on Technological Innovation

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ABSTRACT

Gross Domestic Product (GDP) is a key indicator of a country's economic growth and its well-being. Technological innovation on the other hand is an important driver of growth for productivity and revenue. This paper examines the relationship between GDP per capita and government spending on technology innovation in Malaysia. on in Malaysia. It employs Augmented Dickey-Fuller (ADF) test, Vector Autoregression (VAR) model and variance decomposition to measure the estimation models. The results point to a strong positive relationship between GDP per capita and the expenditure on technology innovation. Furthermore, GDP has a large impact on Malaysia's government spending on technology innovation.

Keywords: Augmented dickey-fuller test, gross domestic product, technology innovation, variance decomposition, vector autoregression mode

INTRODUCTION

Malaysia, an emerging economy, is (Borji, 2015) ranked as the third largest economy in Southeast Asia and ranked 14th most competitive country in the world in 2015. According to the International Monetary Fund (2016), Malaysia also ranked 36th in the world for its nominal GDP, worth USD309.262 billion.

The GDP is an important indicator of a country's economic health (Association for Investment Management and Research, 2003). It is a monetary measure of the market value of a country's goods and services over a specific time period. The GDP

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reflects personal consumption expenditure, investment, government spending and exports. An increase of consumption raises GDP and may induce new investment because it improves investors' expectation of future demand. Additionally, an increase in GDP means higher average income for a consumer resulting in higher expenditure. Meanwhile, an excess of imports over exports may contribute to deficits (Ghosh & Ramakrishnan, 2012).

The GDP is a total market value of all final goods and services produced within the national boundaries and its excludes the net property income from the abroad countries. Nevertheless, fluctuation of oil prices affect GDP figures and the mature economy. The pace of economic development is measured by percentage increase of real GDP over the previous years or quarters. Thus, GDP can measure a nation's growth or decline, as well as its recession (Harris & Roach, 2014).

GDP can be defined as the monetary value of all the finished goods and services produced within a country's borders in a specific time period (Bureau of Economic Analysis, 2017). GDP is the value obtained from the measurement of all public and private consumption, investments, government outlays, inventories, construction costs and the foreign balance of trade. According to Singh, Mehta, & Varsha (2011), GDP affects the return of all portfolios and has a positive relationship with share prices.

The GDP in Malaysia was USD 230.81 billion from 2006 to 2008 (World Bank Group, 2016). This increased by 41.87% compared with 2006. In 2009, GDP fell to USD 202.26 billion or decreased by 12.37% compared with the previous year. The shrinking of GDP value was due to the Global Financial Crisis in 2008. From the 2010 to 2014, Malaysia's GDP value increased steadily to reached USD 338.10 billion or 0.55% of the world economy in 2014. However, it began to decline in 2015, valued USD 296.28.

Technological innovation is important and Malaysia needs active Research and Development (R&D) and innovation in order to stay competitive. The innovative products and services in Malaysia included ROAD-I system, horticulture food crops, medicinal plants and etc. To spur the technological innovation, Malaysia must provide various incentives and grants to encourage more research and development activities. The main factors to encourage development of technology optimising warehouse efficiency and social marketing and sales. All these can lead to greater profits or revenue. Additionally, the government should invest in businesses and higher education.

The primary objective of this paper is to assess whether the government spending t on R&D has an effect on Malaysia's GDP. In particular, this study examines the economic relationship between GDP per capita and government spending on technology innovation. Additionally, the structure of the present paper is as follows: Section 2 is a review of the extant literature on GDP and government spending on technology innovation. Section 3 describes the methodology while Section 4 discusses the findings. Lastly, the conclusion and implication of this study will be discussed in section 5.

LITERATURE REVIEW

Malaysia is now moving rapidly towards achieving its developed country status in line with its Vision 2020. Thus, its GDP value is crucial to attract foreign investors (Callen, 2012).

Malaysia has achieved a stable real GDP growth of 6.2% per annum since 1970 (Eleventh Malaysia Plan, 2015). It had enjoyed one of the best economic growth record over last five years and had moved from a low-income economy in 1970's to a middle-income economy. Malaysia's national per capita also increased over 25-fold from USD 402 in 1970 to USD10,796 in 2014 and it's well on track to achieving better growth.

Studies have focused on the relationship between GDP and government spending on technological innovation as the latter is a key factor for driving growth. According to Ulku (2004), the value of GDP per capita and technological innovation for both developed and developing countries are positively related. Additionally, there is a relationship between R&D stock and innovation in the developed countries with large markets. This study also found that innovation does ensure consistent economic growth. Fixed-effects and Arellano-Bond General Method of Moments (GMM) have been used to evaluate this.

Bozkurt (2015) showed a positive relationship between R&D expenditure and GDP in Turkey by using Johansen Co-Integration and Vector Error Correction models. He also pointed to a unidirectional causal relationship between GDP and technological innovation. Additionally, Peng (2010) revealed GDP has a positive relationship with the R&D expenditures in China. Others studies that showed a positive relationship between technology innovation and GDP include Sadraoui, Ali and Deguachi (2014); Taban and Sengür (2013). Meanwhile, Gu, Terefe and Wang (2012) pointed out that the R&D expenditure has a small impact on GDP and labour productivity in Canada.

According to OECD (2007), the investment in research and development is linked up with high rates of recurrence. The R&D may create new and groundbreaking products or it could add fresh features to the old products, in addition to improving strategies to lower prices and reduce time. The government spending on technological innovation has also contributed significantly to business performance and economic growth. The findings show that since 1995 technological innovation contributed to one third of United States, Netherlands, Denmark, Sweden and France's GDP growth .

Studies show R&D and innovation activities contribute to a stable and continuous economic growth. Akinwale, Dada, Oluwadare, Jesuleye and Siyanbola (2012) studied the impact of R&D and innovation, labour and capital on economic growth in Nigeria. Their findings showed that the expenditure on R&D has significant impact on economic development. They opined that government must be committed to R&D and innovation finding in order to bolster and diversify the economy. Mitchell (2005) evaluated the impact of government spending on economic performance by discussing the theoretical arguments, reviews and and other academic research. Akinwale et al. (2012) and Mitchell (2005) had different conclusion with latter (2005) that most government spending has a negative economic impact. Other related studies can referred to Fan and Rao (2003); James (2011); Ketema (2006); Wu, Tang and Lin (2010). These studies can be concluded that the composition of government expenditure and public expenditure reforms matter for economic growth.

METHODS

This study investigates the impact of Malaysia's spending on technology innovation and in turns its contribution to the country's GDP. The Vector Autoregression (VAR) model is used to analyse and forecast the macroeconomic and financial variables, including consumer price index and economic cycle.

Sadorsky (1999) reported the impulse response functions in VAR model is able to measure economic and financial variables, since it can be used to estimate the endogenous variable's response when a shock occurs. The VAR model is an econometric model, which captures the linear interdependencies among multivariate time series (Stock & Watson, 2001).

The general equation of the VAR model of order *r* is

$$y_t = c + \alpha_1 y_{t-1} + \alpha_2 y_{t-2} + ... + \alpha_p y_{t-r} + u_t \qquad (1)$$

where *c* represents the vector of constant, α_i is the $(m \times m)$ coefficient matrices for endogenous variable, μ_t denotes the vector error and *t* represents the time.

A VAR technique is used to analyse data; if there is more than one endogenous variable in the estimated model, it will exhibit stochastic behaviour. In this study, two endogenous variables: GDP per capita and government spending, were used to study their impact on technology innovation. Data was obtained from DATASTREAM. Data was screened, cleaned and checked with multiple sources, including Yahoo Finance and Malaysia Department of Statistics, to increase its reliability and validity.

RESULTS AND DISCUSSION

In real life application, inflation or depression may lead to structural changes or breaks in the time series variables. Therefore, a stationarity test is crucial in economic and time series variables to identify the attributes of the variables in the calculated model. According to Phoong, Ismail, Phoong and Rosmanjawati (2016), the linear model is no longer suitable to evaluate the time series variables, if non-stationary behaviour exists in the variable's series. Spurious regression and a bias result may occur if the wrong statistical method is employed in estimating the economic variables.

The unit root test is widely used to test for stationary. Others common stationary tests are Dickey-Fuller, Augmented Dickey-Fuller (ADF) test and Kwiatkowski–Phillips–Schmidt–Shin (KPSS) test. The ADF test is used in this paper to analyse the properties of the macroeconomic variables, GDP and government spending on technology innovation. Table 1 contains the findings of the ADF test.

Table 1
Results of augmented Dickey-Fuller test

Variable	Level	First differenced
GDP	0.9685	0.0004
Technology Innovations	0.9958	0.0193

In Table 1, the *p*-values of ADF test for GDP and technology innovation are 0.9685 and 0.9958 respectively. This indicates that both variables are non-stationary and has unit root. A differentiation process is aimed at generating stationarity in the economic variables. The findings of first difference shown in Table 1 represent the *p*-value obtained after a differentiation process.

The first difference is used to transform the non-stationary series to stationary. The variables, GDP and technology innovation expenditure reported the significance of *p*-values as 0.0004 and 0.0193 respectively based on first differentiation.

Next, VAR model is employed to examine the effect of GDP on technology innovations in Malaysia. The VAR model selection with two endogenous variables, GDP and technology innovation, with a deterministic trend are able to provide an accurate result based on smallest standard error in Table 2.

Table 2
VAR output

	GDP	TECH
GDP (-1)	0.836459	0.045912
TECH (-1)	0.196944	0.984968
C	-0.880393	-0.166960
R-squared	0.989241	0.969838
Adj. R-squared	0.988380	0.967425
Log likelihood	37.86345	26.28862
Akaike AIC	-2.490246	-1.663473
Schwarz SC	-2.347510	-1.520737

The R-squared value indicates how close the data are to the fitted regression line. According to Bluman (2014), when the coefficients of determination are near to 1 it means the variables have a better fit. Table 2 shows R-squared for both GDP and technology innovation are 0.9892 and 0.9698 respectively. Thus, the GDP and technology innovation are considered as good fits in the model. The value of log-likelihood obtained is 37.8635 and the Akaike Information Criterion (AIC) is -2.4902. According to Phoong, Ismail and Kun (2013), the most negative value of AIC denotes that the estimated model has a goodness of fit. Therefore, the Vector Autorepression model is suitable for examining the relationship between the changes of GDP and government spending on technology innovation.

R-squared is an estimate of the strength of the relationship between the model and the response variable. The R-squared value in Table 2 points to a strong positive relationship between GDP per capita and innovation expenditure in Malaysia. This finding was consistent with that of Ulku (2004) that innovation and per capita GDP has a strong positive relationship in both developed and developing countries.

The results of VAR model can be generalised and expressed as follows:

$$\widehat{GDP_t} = -0.88 + 0.196944 Tech_t + \varepsilon_t \qquad (2)$$

where the *GDP* represents Gross Domestic Product (per capita), *Tech* denotes expenditure of Technology Innovation, *t* is the time and *ε* represents the standard error.

Variance decomposition was used in this paper since it can provide information about the relative importance of each random innovation in affecting the variability of the variables in the VAR model. The results are shown in Table 3.

Table 3
Variance decomposition outputs

Period	Variance Decomposition of GDP		
	S.E.	GDP	TECH
1	0.066235	100.0000	0.000000
2	0.093050	96.12855	3.871446
3	0.115785	89.20464	10.79536
4	0.137669	81.28570	18.71430
5	0.159568	73.62671	26.37329
6	0.181688	66.78528	33.21472
7	0.204033	60.90765	39.09235
8	0.226555	55.94782	44.05218
9	0.249211	51.78988	48.21012
10	0.271971	48.30538	51.69462

Table 3 shows the variance decomposition of GDP changes in technology innovation is 52% after 10 periods. The S.E. in Table 3 represents the standard error obtained. The results show that the changes of GDP affect the expenditure of technology innovation in Malaysia.

CONCLUSION

The findings of this study show a strong positive relationship between GDP and expenditure on technological innovation in Malaysia. Based on the results in VAR model, the changes in GDP have a positive relationship with government spending on technology innovation. This study employed variance decomposition to determine the effect of variables. Results indicated that the changes in GDP affect the expenditure of technological innovation in Malaysia. There is growing awareness among economic policy makers that innovative activity is the main driver of economic growth. the findings of this research is useful for policy makers to formulate effective strategies to boost growth by looking at the national production data.

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Attitudes and Behaviours toward Healthy Eating and Food Safety in Ho Chi Minh City, Vietnam

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ABSTRACT

This paper is based on qualitative research conducted between 2013 and 2015 in Ho Chi Minh City (HCMC), Vietnam, to explore its people's attitudes and behaviours toward healthy eating and food safety, the discrepancy between attitudes and behaviours, and the factors affecting them. A total of 69 respondents were interviewed for this purpose. Results showed that i) healthy eating and food safety have become a more pressing concern in HCMC, which was welcomed by both food producers and business people; ii) there is a considerable gap between people's cognition, attitudes, and behaviour; and iii) people's financial capacity, their knowledge, and especially mass media and food quality control by the authorities have a significant impact on raising awareness of healthy eating and food safety, positively altering food choices and eating behaviours. This study is important as it reveals people's understanding of healthy eating and food safety in Vietnam, and which can serve as a basis for further research.

Keywords: Attitudes, behaviours, food safety, healthy eating, Ho Chi Minh City

INTRODUCTION

Food is both a source of nutrients and energy as well as a cause of ailments and adverse health. Such ailments are often a result of unsafe cultivation and production processes, careless cultivation, poor processing practice, and inappropriate storage. In Vietnam, this problem has caused increasing anxiety among consumers as both imported and domestic food choices in the market have increased dramatically while ensuring food quality has remained ineffective. Against this background, a qualitative research project (observation

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and interviews with secondary analysis of existing data) was conducted (2013–2015) in Ho Chi Minh City (henceforth HCMC) to explore the attitudes and behaviours of Vietnamese consumers towards healthy eating and food safety, the discrepancy between attitudes and behaviours, and the factors affecting them.

THEORETICAL FRAMEWORK AND BACKGROUND

Concepts

An attitude is "a relatively enduring organization of beliefs, feelings, and behavioral tendencies toward socially significant objects, groups, events or symbols" (Hogg & Vaughan, 2005). Attitudes can be broken down into three components in what is known as the "ABC model": the *affective, behavioral* (or conative), and *cognitive* components.

While attitude involves the mind's predisposition to or against certain ideas, values, people, systems, or institutions, behaviour relates to the actual expression of feelings orally and/or through body language, as well as action or inaction. One assumption about the link between attitudes and behaviour is the principle of *consistency*, as shown in a study by LaPiere (1934).

Healthy eating means consuming the right quantities and proportions of foods from all food groups in order to lead a healthy life. *Food safety* refers to all those hazards, whether chronic or acute, that may make food injurious to the health of the consumer. According to Law No. 55/2010/QH12, the "Food Safety Law" of Vietnam, food safety consists of making sure food is not harmful to health or human lives.

LITERATURE REVIEW

Health Attitudes, Behaviours and Changes

The theory and model of heath belief focus on an individual's attitudes toward a set of conditions or of their own health behaviours, and their subsequent willingness or ability to make changes to improve or protect their health (Nutbeam & Harris, 2004). Behavioural change has been described as a process with five stages: Pre-contemplation, Contemplation, Preparation (or Determination), Action, and Maintenance; from the Maintenance stages, an individual can either consolidate the change or relapse; however, the stages are circular and relapse does not necessarily mean failure—an individual may move through the stages many times before successfully consolidating a change (Prochanska & DiClemente, 1984). The social cognitive theory is used by many scientists studying attitudes and behaviours (Bandura, 1995; MacDowell, Bonnell, & Davies, 2006).

Factors Affecting Attitudes and Behaviours toward Healthy Eating and Food Safety

Theories of behavioural change highlight the importance of examining knowledge and attitudes in order to develop interventions in an attempt to facilitate or prevent change

(National Obesity Observatory, 2010). Numerous studies have been conducted to identify determinants of healthy eating. A systematic review (Allender, Cowburn, & Foster, 2006) identified social interaction and building of social networks as important factors across all groups and ages, particularly among children and older adults.

Healthy Eating and Food Safety in Vietnam

There is a lack of research on attitudes and behaviours toward healthy eating and food safety. However, there are many articles in the mass media on how people fall sick due to poor eating habits and food poisoning in Vietnam. In 2015, the country recorded 171 food poisoning cases affecting nearly 5,000 people; these high numbers stem from the fact that Vietnam imports 4,100 types of pesticides and 1,643 different chemical ingredients, 90% of which come from China, according to Professor Nguyen Lan Dung, President of Vietnam's Association of Biological Sciences. He made this remark at a forum titled "Welcoming clean food" organised by Ministry of Agriculture and Rural Development (DARD) on 23-8-2016 in HCMC (People's Police Newspaper, August 24, 2016). It is impossible to control how farmers use these products. In a recent inspection, the National Institute for Food Control (NIFC), found 40/120 vegetable samples to have excessive levels of chemical pesticides, while 455/735 samples of meat products unsafe for consumption. In Vietnam annually, an average of 150,000 people are diagnosed with cancer and 75,000 people die from it; it is estimated that about 35 percent get cancer from consuming "dirty" food (VnExpress, August 25, 2016). According to Quality Vietnam (VietQ.vn, November 3, 2016), 10 food poisoning cases in particular have shaken public confidence in the food trade. One of the main occurrences was a mass poisoning in HCMC on March 5, 2013, when over 1,500 workers at the Vietnam Terratex Company (operating in Tan Thoi Hiep industrial park, district 12, HCMC) became seriously ill, and suffered from vomiting, abdominal pain, diarrhoea, headache, dizziness after consuming a prepared meal.

The increased publicity and public concern over food safety and healthy eating in Vietnam have attracted the attention of researchers. (Bui & Schreinemachers, 2011; Ziv, Baran, Nam, Rodrigues-Iturbe, & Levin, 2012). Most have focused on issues in food production. For example, a 2010 study in a village near Hanoi specialising in producing sorghum and dried noodles showed that 15% of production facilities were located next to pigsties; 100% of the products were dried in bamboo grills adjacent to a dusty roadside and near open sewers; 60% of production materials had unpleasant an odour, and were unhygienically stored in sacks; more than 50% of households used bleach powder containing harmful chemicals for health such as sodium hydrogen sulphate, chloral hydrates, and potassium permanganate. The lack of knowledge of the risks of these practices among the villagers puts customers at risk of food poisoning, according to the

Tien Giang Province website. (Center for Rural Youth Development. Updated: *20* December *2016*).

Nguyen and Moustier (2015, p. 67) noted that, during the past 20 years, the food sector in Vietnam has undergone major changes: a person can easily purchase foodstuffs from a variety of sources, ranging from street vendors to air-conditioned hypermarkets, with shops and fixed market stalls in between (Figuié & Moustier, 2009). However, consumer surveys have shown that residents of Hanoi purchase produce mainly from street vendors due to their low price, freshness, and proximity to their homes (Figuié & Moustier, 2009). Street vendors in turn source vegetables mostly from wholesale markets (in urban areas) and partly from their own vegetable plots. In 2009, vegetable street vendors supplied 32% of the total vegetable volume sold to consumers, compared with 58% from retail markets, 9% from shops, and 1% from supermarkets. In 2014, approximately 45% of vegetables were sold by street vendors, 49% at retail markets, and only a limited volume at stores (3%) or supermarkets (3%). This phenomenon is explained by the movement of vendors from official to unofficial markets, especially along the roadsides near factories, schools, or in front of someone's house or a store, to avoid having to pay increasingly high fees shopping at renovated formal markets (Nguyen & Moustier, 2015, p. 71). In particular, people tend to prefer vegetables that originate from peri urban areas where production conditions have been certified as "safe" by Hanoi authorities (Nguyen & Moustier, 2015, p. 74).

MATERIALS AND METHODS

Methodological Perspectives

The Policy Studies Institute (2009) investigated a variety of issues relating to healthy eating and food safety. Some of its more important conclusions are as follows: i) food-related behaviours are of low saliency for those responding to questions in food surveys; ii) Lines of questioning should be as specific as possible, for example, asking about particular recent behaviours; iii) social desirability biases are likely in responses to food-related survey questions; and iv) such biases should be reduced mainly through good question design and survey practices. It was also recommended that questionnaire development should be based on social scientific theory, and that surveys should seek to capture not just food-related behaviours but also the psychosocial factors that have an impact on them (d' Ardenne, McManus, & Hall, 2011, p. 6).

Methods and Instrument

Qualitative research methods were employed in this study (FSA, 2009) and information was collected through in-depth interviews and observation. Questions were adapted from Policy Studies Institute (2009) to investigate attitudes and behaviours toward healthy eating and food safety in the Vietnamese context. It is useful to explore changes over time to capture the processes through which individuals make choices regarding the food they purchase and eat, and thereby to identify causal factors.

Participants were asked where they usually buy their raw foods (at traditional markets, supermarkets, etc., or from specialised stores run by food companies) as well as where they eat outside the home, for example at restaurants or street food shops. The authors also observed consumer choice of food at traditional markets and supermarkets. However, a problem was experienced during the data-collecting process: respondents generally answered based on perceived expectations rather than their actual practices, because people usually want to project positive images of themselves. To address this, the authors combined verbal interviews and observation data when describing research results.

RESULTS AND DISCUSSION

Finding 1: Healthy eating and food safety have become more pressing than ever before. This demand has been eagerly welcomed by producers and business people

Healthy eating and food safety have become a main concern of the majority of Vietnamese people. This is an inevitable result of the rise in living standards enjoyed by Vietnamese 30 years after the implementation of the *doi moi* economic reforms in 1986. There is now a wide range of domestic and imported foods, and food sellers have sprung up everywhere. One effect of this rapid transformation is a "choice-based syndrome" that combines increased opportunities and options with declining certainty and safeguards, embracing the paradoxical, contradictory, and conflicting qualities that emerge:

> *Perhaps the hardest thing for me is to make a decision what to eat today? I have enough money, a lot of goods and it is difficult to buy what food is available in this bazaar that can be good for us. I'm always thinking of the most delicious foods and the most beneficial to health for my family. I do not care about the price.* (Housewife, 57 years old, Binh Thanh District)

> *Why are so many people sick? Previously [we were] poor but not many people suffered from diseases. There was little to eat but [we were] healthy. Now having a lot of things to eat [is] not only making us fatter but also unwell.* (Worker, 45 years old, 7 District)

> *I wake up at 5am to shop at the Tan Dinh market near my house. I usually buy from the vendors who get their products from the farmers in the suburbs of Saigon. I have become familiar with them. Their products are good, cheap ... I buy them based on trust ... Retired, I spend most of my time in the market only to buy food and cook for my husband and children ... Someone told me there are*

> *places that sell clean vegetables and delicious meat, so I go there to buy ... I sometime take the bus to the Cu Chi District to buy at a chicken farm, known as vegetarian chicken [because of its feed]. From the day we ate that chicken, we could not eat chicken bought at the market.* (Housewife, 55 years old, 3 District)

Along with the rising tendency to eat "health food" is the taste for delicacies. Families now often ask "What to eat? Where to eat? How to eat? Eat with whom?" Naturally, food traders have attempted to profit from these anxieties and wants of consumers.

> *Everyone wants good food, the more money, the more the demand for good food. Fertilisers are used to induce quick growth of vegetables which also look good. The increasing sales and profit has motivated farmers to use more stimulant factors.* (Man who grows vegetables and bean sprouts, 12 District)

> *One day I heard on TV that they had spotted a farmer spraying excessive pesticides on his vegetables ... a pig breeding household used bran mixed with growth hormone stimulant, mixing antibiotics and substances into lean meat for their pigs to eat ... these are substances that can cause cancer ... Then where can we buy fresh vegetables, clean pork? We are very confused. Who protects us from unsafe food?* (Female staff woman, 35 years old, 2 District)

Finding 2: There is a considerable gap between cognition, attitude, and behaviour

A marketing expert once said that if you ask anyone whether they need to eat clean food, safe food, healthy food, they will surely answer "yes." However, to create a habit of consuming clean and safe foods daily is still an uphill battle for many reasons, including the expense. Prices of fresh foods at bazaars are much higher than those sold at markets and supermarkets; but buying food in the bazaars is still the choice of many Vietnamese, who like eating raw and fresh produce brought directly from the producer. A woman told us that:

> *I am very concerned about health. I purchase clean and fresh foods only to cook ... I eat seasonal fruit every day ... Please, look at my refrigerator [she then opened the refrigerator].*

At a glance, the quality of foods did not seem as good. We asked her: *Where did you buy these things?* She seemed a little embarrassed and said the following:

> *I shopped a little late yesterday ... It was not good. I had to buy this pork ... This was not very fresh*

> *shrimp, but its price was cheaper and I bought it.*

We spoke with a couple, in which the wife worked in an office and the husband was a businessman. They were young, without children, and had significant disposable income. However, they were always short of time to buy food and cook dinners for themselves at home, and so they dined out at approximately four days weekly. They know that street food can be of poor quality, and that they could have been poisoned (at a mild level) after eating crabs in such a setting, but nevertheless they have not practised the habit of "healthy eating and food safety." Why? Here is one story:

> *My mother told me that it was the habit of Saigon [Ho Chi Minh City] people to have dinner at restaurants. Where to eat was according to their financial capacity. I remember that once as a child, my family used to have dinner at a small restaurant near my house. On important dates such as birthdays, our family had dinner at luxurious restaurants. It was popular for everyone to have dinner outside their home, whether they were rich or poor. The cost for a meal out is not more expensive than that [of one] made at home. At that time, no one was poisoned by eating contaminated food.*

> *I have been poisoned after eating crab… It is difficult to make dinner at home after a stressful day of work … I tried, but have not yet done it. Many of my colleagues suffer [much like] me. As you can see, from 6 pm onwards daily, all kinds of food outlets from big to small, are packed with all kinds of people.*

Those wishing to have dinner outside their homes have many choices in HCMC. It can be said that there is no street in HCMC that has no restaurants or unable to meet the needs of all social groups. They are diverse in food quality and price. Restaurants do not operate under the same rules, in which "price depends on the quality."

Finding 3: Control by the authorities had a significant impact on raising the awareness of healthy eating and food safety, fostering change in habitual behaviours in food choices and eating

There are many media programmes on safe food choices in addition to many NGOs working to create better awareness on this.

> *I hear the programme "Say NO to dirty food" on TV. It runs at 7:20 am and 20:50 pm daily. So, I can discover how dirty pork is, how dirty vegetables is, though they were very beautiful [in] form and, where can I buy good things. There is a growing number of shops selling "green food," so I can easily buy high-quality food there. But the number of people buying food there is not much for the high price. It is*

still a habit of the majority to buy foods at bazaars. (Housewife, 56 years old, District 3)

I will never buy meat called "processed local specialties" on sale in tourist places anymore. I saw images yesterday on TV of a household who took dead pigs and then "processed" them to be sold in tourist Tay Thien Temple areas. This took place for many years. There were 5 stalls at resorts selling that kind of meat. I could not believe it. (Male bank staff, 35 years old, 2 District)

The Green-Kindness Bazaar is an example. This fair began its operations in May 2016, and runs regularly on the first and third weekends of each month at the Business Research and Business Support Center - BSA Center, 163 Pasteur avenue, 3 District, Ho Chi Minh City, with the participation of a growing number of gardeners, cooperatives purchasing organic food, consumers, people wishing to learn about clean and safe food as well as food product manufacturers who want to learn about using safe, nutritious food among others. With the permission of the fair organisers and the consent of the attendees, we conducted a discussion with them and explained to them the purpose of this interview work. A young girl said:

We want to know, how to distinguish organic vegetables and vegetables with chemical spray? I go shopping daily, cooking, planting trees also at home, I thought that I can know the difference between organic vegetables, vegetables with chemicals, but I am still not confident. I want to hear the experiences of those who grow organic vegetables to supplement my knowledge. (Housewife in District 3)

I used more than 10 kg of salt monthly for washing vegetables. I only buy vegetables in supermarkets, but still have doubt whether beautiful and green-coloured vegetables are vegetables with chemicals. (Old woman)

An engineer who grows organic vegetables in Cu Chi, in suburban HCMC, said:

Yes, it is difficult to distinguish what the organic vegetable is. Using chemicals for pest control, the leaves of vegetables are green and very smooth. However, vegetables grown in areas as Dalat, though not using chemical sprays, pesticides, leaves of vegetables still are green ... I am an organic vegetable grower and my ability to discriminate is 50% only. Based on my experience, the majority of 'safe' vegetables have smaller leaves than normal, and they are dark green. Safe vegetables and fruits will be uneven in size.

A man said:

> *The only way is to buy fruits and vegetables, food that we know its origin and we can put our trust in.*

A woman agreed with that opinion, and said:

> *Yes, we now buy everything based on trust. Years ago, Vietnamese people lacked food but could eat clean food. Now there are too many choices but not clean ... paradoxical ... why…?*

A host of householders growing organic vegetables in Dalat province said:

> *I do not dare leave my vegetable garden for one day, as I worry if I was away, the workers, because of chasing the [production] target and the number of products, will be spraying into vegetable beds. If they do, it will make our vegetables unsafe, and consumers who eat them may become sick and our brand reputation will be reduced. Engineers, architects use a mixture of garlic, chili, and wine to repel pests in their vegetable garden. Their vegetables are very safe.*

A housewife concluded:

> *After a month of shopping at this fresh vegetable fair, I can know the quality of fruits and vegetables thoroughly just by looking at them; more important than touching, it is the belief. There are more and more young producers who are interested in producing safe food. Thus, we must support them.*

Another woman agreed:

> *I regret that a fair like this is too few, few people provide goods and [there are] few consumers too.*

One older man concurred:

> *I hope that more and more business people and producers are accountable to the community. State management is so weak compared with the dirty food matrix. Everyone must equip themselves with the knowledge to save themselves…. So, I often come to this Green-Kindness Bazaar because eating vegetables here is more delicious than eating vegetables bought in other places. At this fair, I meet buyers and manufacturers directly, hear them talk about the process of planting and caring for these products. The atmosphere of is very fun.*

The above indicate that factors affecting food safety purchase decisions are related not just to income but also to understanding and knowledge of healthy food consumption. When shopping at green bazaars for vegetables and fruits, consumers compare these experiences with buying foods from supermarkets and markets. They will gradually learn to identify clean, safe products. In time, when they become accustom to clean food and attain sufficient prosperity, they will eat safe food regularly.

CONCLUSION

The living standards of Vietnamese people have improved rapidly over recent decades, and "healthy eating" has become a high public priority. The findings of this study are: i) Healthy eating and food safety have become a pressing concern in HCMC because monthly average per capita income as at 2014 increased four times compared with 10 years ago (4,839.7 *dong* compared with 1,164.8 *dong* in 2004), of which about 50% accounted for eating, drinking, and smoking expenditures (Statistical Office in HCMC City 2015). Those who have the financial capacity eat healthy food and a good proportion of it. This demand has been eagerly welcomed by producers and businesses. Demand for "healthy eating" has stimulated producers to increase their production to meet consumer needs to boost profits. ii) There is a relatively large gap between cognition, attitude, and behaviour in this context. Due to lack of understanding on quality indicators related to clean food, inappropriate attitudes and behaviours toward healthy eating and food safety may occur, as people rely on heuristics and biases to reduce their cognitive load of daily decisions. iii) In addition to growth in wealth, increases in knowledge, visibility in media, and good food quality control by the authorities have had significant impacts on raising the awareness of "healthy eating and food safety" to alter dietary behaviours in food choices and eating. Food safety programmes are increasingly focusing on a farm-to-table approach as an effective means of reducing foodborne hazards (Food and Agriculture Organization & World Health Organization, 2003). The National Strategy for Food Safety 2011-2020 and Vision 2030, which sets out many targets for achieving food hygiene and safety, is a culmination of the growing demand for clean food in Vietnam (Law Newspaper, December 7, 2012). Achieving the goal of "food safety and healthy eating" requires integrated solutions to raise awareness, improving the attitudes of consumers, producers, and distributors and incentivising them to practice a reasonable and sensible dietary behaviour.

The findings of the present research point institutional factors (such as mass media, education, and control and management of food quality) having a particularly important role in the transmission of knowledge-building attitudes and directing and controlling the behaviour of consumers, producers, and traders. Health is important both to the individual and society. This study contributes to our understanding of healthy eating and food safety in Vietnam and ways to encourage it.

Evidence also suggests women are more likely to be influenced by social expectations. To get accurate and convincing statements, each oral interview was verified through observations. The action-research model used here shows the value of gathering rigorous qualitative data on relevant attitudes and behaviours.

The findings of this study are limited in its generalisability. In order to identify behavioural patterns and measure their impact on “healthy eating and food safety,” it is necessary to combine quantitative and qualitative methods, along with surveys of different target groups. Findings from such research will be able to inform policymakers and managers and help them build effective intervention mechanisms.

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Attitude and Expectation: Food Waste Recycling as a Business Opportunity in Terengganu

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ABSTRACT

The objectives of this study are first, to understand community attitude in food waste recycling as a business opportunity and second, to gauge their expectations of the local authority. In order to examine the above, a total of 171 respondents residing in Kuala Terengganu for at least two years were interviewed for this study. The results indicated that the community showed a moderate level of interest in engaging in food waste business opportunity and had high expectations of the local authority whereby they believed that the latter should aggressively promote recycling food waste products through the media, establish early education of food waste recycling in schools, enforce law to fight food waste problem and lastly, provide financial aid and courses for interested parties to get involved in the business of converting waste to money.

Keywords: Anaerobic digestion, attitude recycling, business opportunity, compost, expectation, food waste, Terengganu

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INTRODUCTION

Urban residents are estimated to produce 1.5 pounds of solid waste each day. In Malaysia, solid waste consists of 47% percent food waste, 15% paper, 14% plastic, metal 4%, 4% wood, textiles 3%, 3% glass, 1% rubber/leather and the rest other materials. According to the Ministry of Housing and Local Government statistics, in 2012, 25,000 tonnes of solid waste were generated daily in Malaysia, in which Selangor was ahead of other states with a production of 2,955 tonnes of solid waste per day. This was followed by Federal Territory Kuala Lumpur (2,634 tonnes / day), Johor (2,002 tonnes / day), Silver (1,596 tonnes / day) and Kedah (1,383 tonnes /day). The increase of population around the world is deemed to be the main factor contributing to waste generation (Chandravathani, 2006; Manaf, Samah, & Zukki, 2009). According to statistics, the population of Malaysia had increased 40.5% within 15 years which has led to a corresponding increase in waste generated daily from 13,000 tonnes to 19,100 tonnes. Waste generation has an effect on the environment and thus it must be regulated in order to preserve a healthy environment. According to Agamuthu (2001), municipal solid waste in Kuala Terengganu increased from 8.7 metric tonnes per day in 1970 to 154 metric tonnes per day in 2005. Therefore, Kuala Terengganu needs to seriously address its waste management issues. According to Agamuthu and Fauziah (2009), 50% of waste generated in Malaysia is organic or food based, and it is increasingly annually. The Kuala Terengganu City Council (MBKT) also collected 300 tonnes of solid waste per day in clean-up operations in the city and which are taken to the landfill site at Sungai Ikan (Kuala Terengganu). Solid waste collection and disposal costs around RM7.75 million a year covering an area of 4,291.31 hectares; while in Redang Island it costs the council RM557, 280 year including transportation of solid waste from the chalets to the mainland. (Ministry of Housing and Local Government, 2012). Food waste from residential, commercial establishments such as restaurants, institutions, industries, school cafeterias, hospitals, and factories can actually be recycled. It is a growing issue and disposal is controversial, causing food prices to soar (El-Mashad & Zhang, 2010). However, food waste can also be turned into a commodity that can be reused.

By 2020, the target of 40% of solid waste can lead to a reduction of greenhouse gas emissions by 30%.

LITERATURE REVIEW

Worldwide, municipal solid waste is increasing at annual rate of 3.2% to 4.5% in developed countries and 2% to 3% in developing countries which include Malaysia (Agamuthu, 2001; Suocheng, Tong, & Yuping, 2001). Jalil (2010) contended that waste generation in urban areas is higher compared with rural areas as 65% of the Malaysian population reside in Kuala Lumpur. Waste generation is associated with three main factors, namely (1) the growth of economy, (2) the improvement of living standards and finally (3) the change in consumption pattern (Agamuthu, Khidzir, & Hamid, 2009).

Ineffective Food Waste Management in Malaysia

Several methods have been implemented in Malaysia in managing waste, such as waste recycling or reusing, incinerating, open dumping or landfills and composting. Open dumping means waste is disposed of in an uncontrolled manner and such method can be detrimental to the environment. This method though primitive considered the cheapest way to dispose of waste (Rushbrook, 2001).

Sanitary landfills are another waste disposal method. In 1959, the US used this as its primary method of disposing of waste. The waste would be spread into a thin layer and compacted into the smallest practical volume. The thin layer of compacted waste will be covered up with compacted soil at the end of each working day or in a more frequent interval depending on the volume of waste (Corbitt, 1989). By utilising this method, the large volumes of waste could be handled and disposed of in a manner which does not endanger public health and is also environmentally friendly (Schroeder, Aziz, Llyod, & Zappi, 1994; Yalcin & Demirer, 2002).

In Malaysia, ineffectiveness of waste management is often associated with these contributory factors, namely (1) lack of education, (2) attitude and behaviour gap and finally (3) self-perception and self-interest. Attitude and behaviour gap are related to the community's attitude towards the generation of waste who believe that waste is a burden that needs to be discarded as soon as possible, although the behaviour of the community indicates otherwise (Moore, 2012). Attitude and behaviour gap are often associated with convenience, social norms, lack of public participation, lack of education and lack of awareness of effective waste management (Milea, 2009; Mosler, Tamas, Tobias, Rodriguez, & Miranda, 2008). Limited knowledge of waste management definitely affects its effectiveness since prior knowledge of the existing waste management should be able to prepare citizens to accept and implement new technology in managing waste (Poswa, 2001). Aini, Razi, Lau and Hashim (2002) opined that greater awareness among the community on environmental awareness and concern, inculcation of sustainable consumption practices and education will mitigate problems related to waste management as the community becomes receptive of new information and implement new technologies of waste management. Self-interest and self-perception are related to perception and interest of an individual in taking care of common properties whereby most individuals tend to take care of their own properties better (Scarlett & Shaw, 1999). However, Periou (2012) believed that self-perception and self-interest are highly associated with an individual's socio-economic background whereby those from lower socioeconomic backgrounds tend to believe they do not have the power to promote a healthy environment.

Methods in Managing Food Waste: Business Opportunities

Alertness to opportunities refers to a person's capability to recognise business opportunities. According to the literature, this refers to "alertness to changed conditions or to overlook the possibility." This definition suggests that a business opportunity can be noticed by the persons who are not actively seeking for them but they may be able to convert that into an opportunity when the alertness is high. This is known as "passive search" whereby a person is not actively engaged in a formal search for business opportunity, but they are receptive to the opportunity (Ardichvili, Cardoo, & Ray, 2003). For instance, Greenco is the first permitted commercial food waste facility in Georgia, US which converts food waste into compost. Tim Lesko, the president of Greenco was the president of Sebia Inc, a French-owned medical supply distribution company in Atlanta. He learnt a landscape company spent $150,000 each year to haul away yard trimmings. The individual landscapers at Georgia are having trouble in hauling their yard waste and Lesko identified this scenario as an opportunity for business. Soon, Lesko found there was no composting facility in Georgia. Then, he planned to collect and compost the landscaper's yard trimming and sell the compost back to the landscapers (Tucker, 2010).

The methods in managing food waste have been converted into business opportunities such as food waste composting, animal feed processing, anaerobic digestion and electricity generation. Food waste composting is the most cost-effective method of recycling food waste and expanding the market. Organic compost or organic fertiliser is considered a means to grow organic produce due to growing demand for healthy food. According to Hossein and Dahlan (2015), food waste can be dehydrated and processed as poultry feed without adverse effects on the livestock. Besides, animal feed based on food waste is more cost effective compared with conventional animal feed and much more economical for the farmer. Conventional animal food requires high contents of protein for better quality livestock, which in turns results in a high price for their meat. Currently, anaerobic digestion is a well-known method for recycling food waste due to its benefits in producing different kinds of green products. Most anaerobic digestions involve high cost compared with other methods of recycling food waste, but it appears to be more profitable in the long term. However, the Berkeley method which is hot composting, known as anaerobic treatment of food waste and the Bokashi method which is fermentation, known as anaerobic digestion, have been proven to be more cost effective. This fertiliser is nutrient-rich and has the ability to absorb more light than the inorganic fertiliser (Sopiah, Nazriah, Noorazlin, & Norzaidi, 2016). In addition, products from anaerobic digestion such as bio-methane or bio-gas can be used to substitute fossil fuel in generating electricity and heat (Luo, Ding, Xiao, & Lin, 2010; Tillman, 2000).

METHODS

A stratified sampling was used in this study. A total of 200 questionnaires were distributed to respondents who are currently or have been residing in Kuala Terengganu for at least two years. However, only 171 sets were completed by the respondents and used for data analysis. Cronbach's alpha value for 13 items (questions) used in the pilot study is greater than 0.7 threshold value, estimated at 0.788. It is important to note the study utilised 5- point Likert scale to gauge respondents' views, in which 1 = Strongly disagree, 2 = Disagree, 3 = Slightly agree, 4 = Agree, and 5 = Strongly agree. The study used descriptive statistics, analysed respondents' profiles, and their attitudes towards food waste recycling as a business as well their expectations of the role of authorities. The analysis was conducted at both overall level and categorical level (i.e. household, commercial and institution).

RESULTS

Descriptive Statistics Analysis

Results showed that majority of participants were females (62%). Majority were young, below the age of 55 calculating for 93% of total respondents. Majority also had low monthly income, in which about half of the respondents earn less than RM 1000 per month (52%) and 25.7% earn between RM 1001 to RM 3000. Furthermore, 43.9% of respondents are from the household category, followed by 33.3% from institution and the rest from commercial. Each group has at least 30 samples which are required for parametric statistical test. In addition, the majority of institution respondents represent schools (51.7%) and universities (24.1%), while the majority of commercial respondents are from the food industry while the rest were from the hotel/resort industry.

ANOVA test

This section sheds light on the respondents' attitudes towards food waste recycling as a business in Terengganu. In Table 1, the mean value was generated together with p-value of ANOVA to assess the differences in level of agreement among different category groups of respondents, namely household, commercial and institution. From the results, the three groups showed similar levels of agreement (p value > 0.05) for questions 1, 2, 3, and 5. Respondents from the commercial group showed significantly higher level of agreement for question 4 (p value < 0.05) with a mean value of 3.79 compared with the household group (3.33) and institution group (3.32).

Table 1
Mean for respondents' attitude towards food waste recycle as business

No.	Items/Questions	Category				p-value
		H	C	I	Total	
1	Food waste recycle product generate income	4.05	3.97	4.11	4.05	0.743
2	Will recycle food waste into compost for own use	3.45	3.36	3.46	3.43	0.860
3	Interested if low cost	3.32	3.64	3.26	3.37	0.188
4	Interested if easy control and maintenance	3.33	3.79	3.32	3.43	0.028
5	Interested if training is provided by authority	3.43	3.74	3.26	3.44	0.059

H: Household; C: Commercial; I: Institution

The agreement level (expectation) of respondents on the role of authority was analysed and shown in Table 2 using mean and ANOVA. Results showed that there is no significant difference in the mean level of expectation between household, commercial and institutional groups in which all the p values were greater than 0.05. In general, respondents have high expectations on all the eight roles being measured as the mean values were greater than 4.

Table 2
Mean for respondents' expectation of roles of authority

No.	Items/Questions	Category				p-value
		H	C	I	Total	
1	Attention to food waste problem	4.12	3.95	4.25	4.12	0.159
2	Law enforcement to food waste problem	4.24	4.05	4.12	4.16	0.426
3	Provide financial aids to interested party	4.15	3.85	4.11	4.06	0.109
4	Provide courses to interested party	4.15	3.97	4.04	4.07	0.448
5	Funding research for more food waste product	3.97	3.97	3.98	3.98	0.997
6	Help promote food waste product through media	4.69	3.82	3.98	4.26	0.270
7	Early education of food waste recycle in school	4.2	4.31	4.23	4.24	0.744
8	Promote the advantage of food waste recycle compost	4.16	4.28	4.32	4.24	0.404

H: Household; C: Commercial; I: Institution

DISCUSSION

Attitude towards Food Waste Recycles as Business

The result of the study indicates the commercial group is interested to initiate the food waste recycle business if the operation (control and maintenance) of such business is easy. In general, respondents believe recycled products from food waste can generate income (mean = 4.05). Besides, respondents agree they should recycle food waste into compost for their own use (mean = 3.43). In sum respondents showed moderate level of interest to start up if the cost is low (mean = 3.37), the operation is easy (mean = 3.43) and training is provided by authority (mean = 3.44). Respondents of the study have relatively higher expectations of authority to help promote recycling of food waste products through media (mean = 4.26), establish early education of food waste recycle in school (mean = 4.24), and promote the advantage of food waste compost (mean = 4.24).

Expectation towards Roles of Authority

Respondents also believed that the authority should pay more attention to food waste problem (mean = 4.12), enforce law to fight food waste problem (mean = 4.16), provide financial aids to those interested (mean = 4.06), provide courses to interested party (mean = 4.07), and lastly fund researches for more food waste product (mean = 3.98). From the results of the study, respondents placed high expectations on the local government to initiate a recycling business despite their moderate interest. Thus, the community believe they do not possess any capability or knowledge on recycling and believe the local government could help them to start a recycling business. This is supported by Periou (2012).

CONCLUSION

There are several ways of managing municipal solid waste, namely landfill, composting, recycling, incineration, anaerobic digestion, cofiring food waste and coal in generating electricity. However, the current practice of managing waste in Terengganu seems to be limited to open dumping and landfills. Food waste is the major municipal solid waste generated in Malaysia (including Terengganu) and if food waste could be managed properly, the waste problem could be solved eventually. Besides, food waste can be converted into business opportunities through composting, animal feed and anaerobic digestion. Composting is able to convert food waste into organic fertilisers to promote the concept of healthy food as opposed to chemical fertiliser. Food waste which are processed into animal feed, especially poultry feed and aqua feed, is as effective as conventional feed, yet more economical compared with conventional feed. Anaerobic digestion is costly but it is profitable in the longer term. Food waste can be used and converted into products which generate income to the community. The results of this study indicate moderate positive attitude towards food waste recycling as business opportunity and such attitudes are associated with the operation and cost of recycling food waste. The local community in Kuala Terengganu also have high expectations of the local authority. Funds from the local authorities as well as training courses organised by them would help the community to start a recycling business.

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Empirical Analysis of the Dogs of the Dow (DoD) Trading Strategy in Developed and Developing Asian Markets

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ABSTRACT

Supporters of Efficient Market Hypothesis argued that investors are not able to make abnormal returns when the market is in an efficient condition. In contrast Overreaction Hypothesis theory acknowledges the presence of anomalies in the financial markets and indicated that investors can generate abnormal returns through the establishment of trading strategy like Dogs of the DoW (DoD). Thus, this paper examines Dogs of the Dow (DoD) trading strategy to generate abnormal returns in stock markets in developing and developed Asian countries. The trading strategy is based on dividend anomaly and was tested in three developed markets in Asia (Singapore, South Korea and Hong Kong) and in three developing markets (Malaysia, Thailand and Indonesia). The DoD portfolio comprises 10 shares with the highest dividend yield from the identified stock market indices between 2000 and 2014. The calculated returns of DoD portfolio were benchmarked against the market returns of the respective countries studied. Results show that on average the DoD strategy statistically and significantly outperforms the average market returns for both Asian developed and developing markets. Findings appear to contradict the validity of Efficient Market Hypothesis (EMH) and support the Overreaction Hypothesis.

Keywords: Abnormal return, Asian developed markets, efficient market hypothesis, Dogs of the Dow strategy, overreaction hypothesis, stock markets

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INTRODUCTION

Fama (1970), an advocate of the well-known Efficient Market Hypothesis (EMH), asserts investors are not likely to make abnormal returns based on a trading strategy using historical stock prices. Rizvi and Arshad (2015) supported the relevance of EMH theory and found the stock markets of Singapore, South Korea, Malaysia and Indonesia to be efficient. Raju (2015) found the Indian stock market to be efficient even after segregating the economy into pre-recession, during recession and post-recession. On the other hand, Gumus and Zeren (2014) claimed that stock markets in the developing countries are more inefficient relative to the developed countries as these markets are said to be fragmented. Kim, Doucouliagos and Stanley (2014) negated this claim saying that inefficient Asian stock markets are improving due to economic freedom and an increase in their market capitalisation.

However, De Bondt and Thaler's overreaction hypothesis (1985, 1987) appeared to invalidate the EMH. The authors believed that in most cases investors are inclined to overreact to unanticipated information that could lead to rewarding investment strategy. Maheshwari and Dhankar (2014) pointed out that there is abundance of unanticipated events (or factors) that can cause markets to react unexpectedly and one of them is dividend yield.

Dogs of the Dow (DoD) trading strategy, a dividend-yield based investment introduced by O'Higgins and Downes (1991), supports the overreaction hypothesis. They explained that investors are not in favour of high dividend yield stocks as they are subjected to market overreaction, particularly on negative information. As a result, the high dividend yield stocks are undervalued. In short, a profitable trading strategy is possible if investors undervalue shares and short the past winners through the selection of shares with the highest dividend yield (DY) in their prospective portfolios. This simple strategy was first implemented in US markets, where an equally weighted portfolio comprising10 highest dividend-yield stocks from the Dow Jones, Industrial Averages (DJIA) is picked and then rebalanced annually.

Over the past two decades, investors and academicians have been testing this DoD strategy in the US market and empirical results show it is capable of beating the market (Domian, Louton, & Mossman, 1998; O'Higgins & Downes, 1991; Slatter, 1988). This has motivated researchers to apply the DoD trading strategy in other developed markets such as Canada (Visscher & Filbeck, 2003) and Japan (Song & Hagio, 2007). Findings of these studies indicated the DoD strategy was superior and statistically significant. In recent years, DoD trading strategy has slowly attracted attention of researchers from developing countries (Qiu, Yan, & Song, 2012; Yan, Song, Qiu, & Akagi, 2015) due to increased dividend payments. Cook (2014) reported that dividend payout by companies in Asia increased by 75 per cent between 2009 and 2013. She also observed that companies in Malaysia have high yielding stocks and provided huge dividends between 2013 and 2014. In 2015, these were the top three companies with high dividend payouts in ASEAN (Bursa Malaysia Annual Report, 2015). Yan et al. (2015) showed the accumulated returns from the DoD strategy was much higher than the Taiwan 50 Index. Meanwhile, Carvalhal and Meireles (2015) revealed that DoD portfolio returns were slightly above Argentina, Chile, Colombia, Mexico, Peru and Venezuela share market indices. Nonetheless, although Qiu et al. (2012) discovered DoD strategy was able to outperform the Hang Seng Index, the results were statistically insignificant.

The primary aim of this study is to test the applicability and effectiveness of the DoD trading strategy in the developed and developing Asian markets. The study differs from previous ones in several aspects. First, unlike those previous studies that concentrated only on a specific market, this study attempts to apply the DoD trading strategy on developed and developing markets. This enables the researchers to determine whether different financial development influences the effectiveness of DoD. For instance, Singapore and Hong Kong have been recognised as top financial hubs in Asia, and according to Necander and Olsson (2016), such trading strategy may not be applicable or effective for investors. Second, if indeed the strategy does work in both developed and developing Asian countries, does it indicate the overreaction hypothesis over rules the EMH?

The framework of the study is as follows. Sections 2 and 3 contains a review of previous studies related to the performance of Dogs of Dow (DoD) trading strategy and an explanation of research method. Empirical results are analysed and discussed in section 4, while section 5 concludes the study.

LITERATURE REVIEW

The ultimate motive of investors investing in the stock markets is to generate returns through appreciation of stock prices and dividend. Efficient Market Hypothesis and Dividend Irrelevance theories dispute that dividend has no impact on stock prices either directly or indirectly. According to these theories generating excess returns are impossible. Specifically excess returns are impossible. Nevertheless, other schools of thoughts have refuted those theories and propose that existence of market anomalies could create an opportunity for investors to make abnormal returns (Bondt & Thaler, 1985; Latif, Arshad, Fatima, & Farooq, 2012; O'Higgins & Downes, 1991). Kahneman and Tversky (1982) pointed out that since investors need to make decision quickly and do not have the time to process available information, they tend to make irrational investment decisions.

Dogs of the Dow (DoD) is a high dividend yield investment-based strategy that is said to be able to beat stock market returns. In 1991, O'Higgins and Downes in their book introduced the Dogs of the Dow trading strategy and claimed the strategy to be able to provide investors with abnormal returns. Under this strategy, a portfolio comprising 10 highest dividend yield stocks (and lower prices) is constructed from the Dow Jones Industrial Average (DJIA). DIJA The ten stocks picked from the DJIA are made up of blue chip stocks (biggest and strongest companies) and the portfolio is held and rebalanced on a yearly basis. The authors revealed that the strategy is effective since abnormal returns were generated during the year 1973 until 1991. McQueen, Shields and Thorley (1997) tested the same strategy using longer time horizon, from 1946 to 1995. They also uncovered the returns of the DoD portfolio to exceed the DJIA's market return statistically and significantly.

Nonetheless, there are researchers who are sceptical about the effectivness of DoD. Hirshey (2000) refuted the findings of Higgins and Downes (1991); Slatter (1988) due to the error in their sampling and collection of data. In contrast, Prather and Webb (2002) had rerun the data and found the DoD portfolio returns to be statistically significant. They concluded that the US stock market was inefficient at the time the DoD strategy was applied. Assefa, Esqueda and Galariotis (2014) reported that the strategy was effective using large-cap stock in the US market, but another study by Zou and Chen (2014) discovered that these large-cap shares failed to outperform non-popular stocks in the US markets.

Motivated by the effectiveness of the DoD trading strategy, other researchers started to apply this outside the US market. Thus far, the empirical results of those studies in the developed and developing markets are found to be diverse. Andre and Silva (2001) found that the strategy was ineffective in the Brazilian stock market and DoD portfolio returns in Argentina, Chile, Colombia, Mexico, Peru and Venezuela slightly exceeded the market returns. When Tai (2014) tested the strategy in US, Hong Kong, Taiwan and Singapore markets, he discovered that in the long run, the strategy worked best in developed Asian countries during non-financial crisis periods. Similarly, Akarim and Sevim (2013) concluded that the share markets of the 18 developing countries studied were able to generate huge abnormal returns using the DoD strategy. Alles and Sheng (2008) applied DoD strategy in the Australian market and found that investors were able to make excess returns.

Conflicting empirical findings were also noted when DoD trading strategy was used in the Swedish market. Findings by Broberg and Lindh (2012) showed that returns from the DoD strategy is statistically significant during upward trend, yet a recent study by Necander and Olsson (2016) proved that DoD worked best during economic downturns. However, the authors were not able to conclude the effectiveness of this strategy in Sweden since the results of the t-test were found to be statistically insignificant.

Several studies were also carried out in other Asian markets. Sahu (2001) tested the DoD strategy in the Indian market and noted the DoD is statistically significant only when the market is bullish. In Taiwan, Hong Kong and China (Huang, You, Huang, & Kuo, 2014), Thailand (Rowlett, 2012) and Indonesia (Ekaputra

& Sukarno, 2012) studies indicated DoD strategy to be statistically significant. Wang, Larsen, Ainina, Akhbari and Gressis (2011) found that in the Chinese market, the strategy is suitable for short-horizon while Tissayakorn, Song, Qiu and Akagi (2013) observed that the DoD trading strategy in Thailand appeared to be significant in the long term. Further studies in the Asian markets revealed that statistically, DoD outperformed the markets in Taiwan (Yan et al., 2015) and Japan (Qiu, Song, & Hasama, 2013).

In lieu of the diversity of results from previous studies related to the applicability of DoD strategy as well as the latest development on dividend payout among companies in the Asian countries, could the DoD trading strategy work on the developed and developing Asian markets?

METHODS

Six Asian countries (three developed and three developing countries) are selected for the purpose of this study. The countries are Hong Kong (HK), Singapore (SG), South Korea (KR), Indonesia (ID), Malaysia (MY) and Thailand (TH). The market indices identified are Hang Seng Index (Hong Kong), FTSE Strait Times Index (Singapore), Korea Stock Exchange 50 Index (South Korea), FBM Kuala Lumpur Composite Index (Malaysia), Jakarta Composite Index (Indonesia) and Stock Exchange of Thailand Index (Thailand). Other Asian markets are excluded in the study due to the difficulty in retrieving prices of several high dividend yield stocks making up the DoD portfolio constructed. Annual data starting from the year 2000 until 2014 was gathered from *Thomson One Banker*.

The construction of DoD portfolio for the respective stock markets is created as follows:

a. Ten stocks with the highest dividend yield from the components of the market indices studied were identified on the first trading day of the year, that is, January 2000.
b. Equal weighted is given to ten stocks and is held for a year, December 2000.
c. Those shares that do not meet the criteria of having the ten highest dividend yield are being replaced accordingly.
d. This process is repeated yearly throughout the duration of the study, that is from year 2000 until 2014.

Once the ten stocks have been selected, the return ($R_{i,t}$)) of individual stock that made up the DoD portfolio is calculated. The calculation is based on the method applied by Broberg and Lindh (2012) and is formulated in Equation (1) below:

$$R_{i,t} = [(P_{i,t} - P_{i.t-1}) + D_{i,t}]/P_{i,t-1} \times 100 \quad (1)$$

Where:

$P_{i,t}$ = Market price of current year for company share i

$P_{i,t-1}$ = Market price of previous year for company share i

$D_{i,t}$ = Dividend paid of the current year for company share i

Next, the study proceeds with the computation of return of the DoD portfolio. Equal weighted (W_i) is assigned to the return of the ten stocks selected and then being added up to derive the weighted total return of the DoD portfolio. The mathematical expression of the total return of the DoD portfolio ($R_{p,it}$) is shown in Equation (2).

$$R_{p,it} = \sum_{i=1}^{10} W_i R_{i,t} \quad (2)$$

The total return of the DoD portfolio ($R_{p,it}$) is divided by the number of years (which in this study is 14 years) to get the average DoD portfolio return for each market. The abnormal return ($AR_{i,t}$) is then computed to determine if the average portfolio returns ($R_{p,it}$) of the DoD trading strategy exceed the average market return ($R_{m,it}$). The computation of ($AR_{i,t}$) of the DoD portfolio is shown in Equation (3).

$$AR_{i,t} = R_{p,it} - R_{m,it} \quad (3)$$

The following hypothesis statement is developed for this study.

Null Hypothesis (H_0) :DoD Abnormal Return is not equal to zero

Alternate Hypothesis (H_a) :DoD Abnormal Return is not equal to zero

A t-test is performed on the tested hypothesis statement to determine if the DoD abnormal returns are statistically significant (Friso, 2016; Qiu et al., 2013). A p-value that is greater than 0.05 implies the rejection of the null hypothesis.

RESULTS AND DISCUSSION

Table 1 provides the results of the DoD portfolio returns, market returns and abnormal returns for both developed and developing Asian markets studied. In the case of Asian developed markets of Hong Kong, Singapore and South Korea, it appears that the performance of DoD trading strategy is more superior than the market performance. The results of the t-test indicate the abnormal returns to be statistically significant at 1% and 5% level. As indicated by the t-test, the abnormal returns in Singapore (2.0373) are more superior to the abnormal returns generated in Hong Kong (1.3760) and South Korean markets (1.8150) respectively. The findings are similar to studies by Chong and Luk (2011); Qiu et al. (2012); Qiu et al. (2013) when they tested the DoD trading strategies in the developed countries of Japan, Hong Kong and Canada respectively.

Table 1
Results of average portfolio return, market return and abnormal return in developed and developing markets

	Developed Markets			Developing Markets		
	HK	SG	KR	ID	MY	TH
Mean DoD Portfolio Return	1.4350	2.0937	1.9030	3.8271	1.7571	2.6536
Mean Market Return	0.0590	0.0565	0.0881	0.2100	0.0734	0.1441
Abnormal Return (AR)	1.3760	2.0373	1.8150	3.6171	1.6837	2.5095
T-Test	0.0433**	0.0093***	0.0308**	0.0250**	0.0010***	0.0141***

Notes: ***Significant at 1% level and **Significant at 5% level

As for the developing markets of Indonesia, Malaysia and Thailand, Table 1 once again indicates that the DoD trading strategy is capable of providing excess return relative to the respective market returns. These abnormal returns are statistically significant at 5% level for Indonesian market and 1% level for both Malaysian and Thailand markets. Interestingly the investors are able to have larger abnormal return in the Indonesian market (3.6171) when this strategy is applied as opposed to the Malaysian (1.6837) and Thailand (2.5095) markets.

Table 2
Results of yearly abnormal return in developed and developing asian markets from 2000 to 2014

Year	Developed Markets			Developing Markets		
	HK	SG	KR	ID	MY	TH
2000	1.1594 (O)	-0.5343 (U)	-3.3685 (U)	-3.6072 (U)	-0.8000 (U)	-1.4065 (U)
2001	-0.8818 (U)	2.5125 (O)	6.5335 (O)	1.3061 (O)	2.0664 (O)	4.8146 (O)
2002	0.2438 (O)	-0.3689 (U)	1.1675 (O)	1.9451 (O)	0.9118 (O)	4.2542 (O)
2003	3.5642 (O)	4.7251 (O)	5.8057 (O)	6.1878 (O)	3.6921 (O)	6.6309 (O)
2004	2.5457 (O)	3.7004 (O)	3.4437 (O)	5.9854 (O)	2.7390 (O)	-0.1870 (U)
2005	0.6060 (O)	4.4918 (O)	1.8054 (O)	2.1096 (O)	0.4772 (O)	0.1018 (O)
2006	2.9752 (O)	2.2784 (O)	2.4678 (O)	9.0755 (O)	2.4424 (O)	1.8937 (O)
2007	2.1331 (O)	3.6366 (O)	3.7390 (O)	13.6475 (O)	4.5366 (O)	3.5615 (O)
2008	-4.0376 (U)	-3.6721 (U)	-2.4736 (U)	-3.9758 (U)	-0.8775 (U)	-4.2015 (U)
2009	5.0538 (O)	6.5353 (O)	3.5663 (O)	14.5380 (O)	2.9097 (O)	8.4704 (O)
2010	2.0781 (O)	2.6352 (O)	4.1034 (O)	4.6015 (O)	2.0601 (O)	4.5292 (O)
2011	-1.2159 (U)	-0.1304 (U)	-0.6703 (U)	-0.9042 (U)	1.3226 (O)	3.2421 (O)
2012	3.2612 (O)	2.6669 (O)	0.6363 (O)	-0.1466 (U)	2.8458 (O)	5.0001 (O)
2013	1.0467 (O)	1.2614 (O)	0.4681 (O)	-0.1923 (U)	0.6959 (O)	-0.2991 (U)
2014	2.1081 (O)	0.8206 (O)	0.0004 (O)	3.6857 (O)	0.2337 (O)	1.2379 (O)
Sum	20.6401 (O)	30.5588 (O)	27.2247 (O)	54.2561 (O)	25.2559 (O)	37.6424 (O)

Notes: O indicates Outperform and U indicates Underperform the stock market

When abnormal returns in the respective markets are assessed on a yearly basis (Table 2), the results indicate that most of the DoD portfolio returns in markets beat the market returns. With exception of the HK market, the DoD portfolios in the other developed markets seem to underperform the market in the year 2000. In that same year, the DoD portfolio returns of ID (-3.6072), MY (-0.8000) and TH (-1.4065) also generated negative returns of which DoD portfolio returns of Indonesia (ID) reported the highest negative return. This is mainly due to the slow recovery process of post 1997 Asian financial crisis. Not surprisingly, the Global Financial Crisis in 2008 also resulted in negative returns of the DoD portfolio for both developed and developing countries. In addition, the European sovereign crisis appeared to generate negative returns for ID market and all the developed Asian markets studied. Rizvi and Arshad (2013) attributed the difference in the negative returns across markets to the different recovery phases experienced by those markets as well as the level of interdependence with the markets where the crises began. In sum, the results support that of Tai (2014) which showedstrategy is ineffective during crisis period.

It is observed that the performance of these portfolios was better after 1997, 2008 and 2011 economic crises. Generally, between 2000 and 2014, the DoD trading strategies in most instances gave high abnormal returns to investors in both developed and developing Asian markets. As argued by Yan et al. (2015) and Qiu et al. (2012) the results imply the market seems to be inefficient and hence, supports the overreaction hypothesis.

CONCLUSION

This paper had analysed the effectiveness of the DoD trading strategy in both developed and developing Asian markets. Empirical results indicated statistically, DoD trading strategy was able to generate excess return in those markets. The markets in Singapore and Indonesia generated the highest accumulated abnormal returns among the developed and developing Asian markets. The findings confirm those of earlier studies by Ekaputra and Sukarno (2012); Huang, You, Huang and Kuo (2014); Rowlett (2012); Tissayakorn (2013). This suggests that investors can use this investment strategy to beat the market. It can be concluded that over performance of the Dow Dog strategy on the selected Asian developed and developing countries is in tandem with the overreaction hypothesis that claimed investors to behave irrationally on information related to high dividend-yield stocks. Future researches could examine the effectiveness of DoD strategy using returns that have been adjusted for risk, transaction costs and taxes. In addition, they could also use fewer than 10 Dogs to determine if higher abnormal returns could be attained.

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Liquidity Using Corwin and Schultz Approach and Stock Returns in the Indonesian Capital Market

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ABSTRACT

This paper examines the relationship between bid–ask spread approach proposed by Corwin and Schultz to measure illiquidity and its impact on excess stock returns in the Indonesian stock exchange using extended Fama and French models. The sample of the study is daily stock prices in the KOMPAS 100 Index covering the first quarter of 2013 up to second quarter 2016. Data regression analysis suggests that a stock's illiquidity is not a price factor in the Indonesian market even after controlling three factors from Fama and French. Concentrated ownership of a firm by the founder and his or her family might lead to thin liquidity in the market because owners tend to hold their stocks; thus, there is only limited stocks for transactions in the market. As expected, market risk and size premium have a positive effect on excess stock returns; however, considering other factors based on Fama and French, the value premium factor is not significantly linked to capital asset pricing. Lagged return is a variable and an important factor for consideration before making an investment. Additionally, a positive relationship between inflation and excess returns implies that the Indonesian capital market has provided a hedge against inflation.

Keywords: Corwin and Schultz model; excess returns; illiquidity; liquidity, three factors model

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INTRODUCTION

Liquidity is an important factor in determining price and stock returns in the equity market. However, the concept of liquidity is elusive; thus, it is not easy to define and measure it (Hasbrouck & Scwartz, 1988). In earlier analytical models of capital asset pricing, the liquidity factor is not considered a variable that affects share price as well as risk and return. Amihud and Mendelson (1986) in their seminal paper investigated the relationship between bid–ask spread as a measurement of illiquidity and asset pricing. The authors found bid–ask spread has a positive relationship with asset expected returns; in other words, illiquidity is to be priced by investors. The authors concluded that expected return is a concave function of a stock's bid–ask spread.

Amihud and Mendelson (1986) examined liquidity as a driving factor of asset pricing. Most studies pointed to premiums risks with regards to liquidity (Acharya & Pedersen, 2005; Pastor & Stambaugh, 2003). Recent studies also linked asset pricing model and liquidity as variables that determine a stock's price. A study looking at Tokyo Stock Exchange (Chang, Paff, & Hwang, 2010) indicated a negative (positive) relationship between liquidity (illiquidity) and returns. Amihud and Mendelson (1986); Chiang and Zheng (2015) who studied the impact of illiquidity risk on excess returns found illiquidity risk associates positively with the excess return in G7 countries.

However, Amihud and Mendelson (1986) and the theoretical model of capital asset pricing and liquidity effect proposed Jacoby, Fowler and Gottesman (2000) shows a positive relationship between returns and bid–ask spread at an increasing rate (convex relationship). This model confirms the findings of Brennan and Subrahmanyam (1996); Chordia, Subrahmanyam and Anshuman (2001). The authors found stocks that are not liquid, have higher variability in activity of trading (illiquid), and result in lower expected returns. Assefa and Mollick (2014) showed that liquidity positively affects stock returns in African market, and this supports Jacoby's model. A study of Oslo Stock Market also confirms this finding (Dinh, 2017).

These conflicting findings inspired the present study which is aimed at finding out if there is a premium for illiquidity or a variability of liquidity in the Indonesian capital market. Indonesia is an important emerging capital market. Its market capitalisation in August 2016 was $446.4 billion, an increase of 29.9 percent during the year, which is the highest in Asia. Meanwhile, Indonesia's index grew by 15.32% in year 2016 and it is the fifth highest in the Asia Pacific capital market (www.ojk.id). As investors are risk-averse, they need higher expected returns when there is a variability in liquidity of the stock. Yet, liquidity market as a whole has an influence on investors' expectations of returns (Acharya & Pedersen, 2005), this phenomenon is stated by Chordia, Roll and Subrahmanyam (2000) as commonality in liquidity

Most empirical research on the effect of liquidity and stock returns focused on developed capital markets such as the US (Acharya & Pedersen, 2005; Chordia et al., 2000; Pastor & Stambaugh, 2003); Australia (Marshall & Young, 2003); Spain (Martinez, Nieto, Rubio, & Tapia, 2005). There are very few studies on the liquidity of the Indonesian stock market. Amanda and Husodo (2014) investigated the relationship between liquidity and stock return using the Fama and French three-factor models. Their analysis showed there is illiquidity premium on excess stock returns in the Indonesian market. Trade initiation by an informed foreigner has an impact on increases in commonality in liquidity (Peranginangin et al., 2016). Meanwhile, the merger between Jakarta and Surabaya stock exchanges into the Indonesian stock exchange significantly affects stock liquidity (Yang & Pangastuti, 2016).

Researchers use several different methods of liquidity to investigate the relationship between liquidity or illiquidity risk and stock returns. Chordia, Roll, and Subrahmanyam (2000) used trading activities and turnover rate as a proxy for liquidity. Amihud (2002) applied illiquidity measure while Amihud and Mendelson (1986) used a bid–ask spread as a measure of liquidity. Amanda and Husodo (2014) applied illiquidity measure from Amihud (2002) in their liquidity analysis in the Indonesian capital market. All these liquidity measurements play significant roles in determining price and stock returns. This paper uses liquidity measure proposed by Corwin and Schultz (2012), a simple method to approximate bid–ask spread from daily low and high prices. This method is more suitable for estimating low-frequency data, which is parallel with our daily return data. It also claims to have outperformed other estimators of liquidity measurement LOT, for example Lesmond, Ogden and Trzcinka (1999) and the covariance estimator from Roll (1984). Thus, this liquidity measurement may help to better explain the excess stock return in the Indonesian capital market.

This paper shows that illiquidity is not a price factor in the Indonesian capital market. It is predicted that only small parts of stocks listed in the market are transacted in the exchange, which leads to thin liquidity. Additionally, majority of the stake in the public-listed company is still held by the founder or his or her family; thus, the securities become dormant stocks. Market risk and size factor (SMB) as predicted become determinant factors in affecting the excess return; however, other Fama and French factors, namely, value premium (HML), do not significantly influence the excess return.

This paper contributes to capital asset pricing theory, especially on the effect of illiquidity premium and excess stock return in several ways. It first explores the Indonesian capital market, categorised as an emerging market, who daily transaction is around US$550 million, which is much lower than daily average transaction in a developed market (illiquid); thus, thin liquidity may have an impact on stock returns in different ways compared with the developed market. Many studies on asset pricing model have been conducted using data from a hybrid quote-driven market such as NYSE. Meanwhile, the Indonesian capital market applies an order-driven market. In this type of market, investors provide liquidity to the market and establish the bid–ask spread. Additionally, this market is different compared with US market that applies hybrid quote-driven, problems in law enforcement, and unique regulations, especially for free-float stocks, where stocks held by minority shareholders is only 7.5%. Furthermore, foreign investors dominantly hold trading and proportions of ownership. Data from the Indonesian stock exchange show that the proportion of foreign investors was 54% in 2016 (www.idx.co.id). This creates problems in terms of capital flight and liquidity when there are unfavourable issues related to Indonesian and regional macroeconomics and politics. Thus, the Indonesian capital market is still an interesting case study for further analysis of whether the illiquidity risk is a dominant factor in pricing the stock. As a result, this paper contributes to literature with respect to order-driven markets in an emerging country.

Second, in contrast with most liquidity measurements of previous research, this study uses a relative new bid–ask spread of Corwin and Schultz (2012) as a proxy of our liquidity estimator. To the best of the present authors' knowledge, this is the first study to apply this liquidity measurement in the context of the Indonesian capital market.

The rest of the paper is organised as follows: the next section discusses the theoretical and empirical findings of stock liquidity and their impact on price and stock returns. In Section 3, models are developed and data and empirical procedures to test the model are presented. Results are analysed in Section 4, followed by conclusions, comments, and the implications for players and policymakers in Section 5.

LITERATURE REVIEW

The role of liquidity in explaining stock returns attracted the resarch of scholars after Amihud and Mendelson (1986) investigated the relationship between illiquidity, which is measured by the bid–ask spread and asset pricing. The authors explained that the bid–ask spread can be measured as the cost of investors for immediate stock execution. If they do not want to wait for a favourable price, there are premium fees for immediate buying and concession fees for immediate selling. Those transaction costs are reflected in the bid–ask spread quotation and have a negative relationship with the characteristics of stock liquidity (Stoll, 1985). Thus, this bid–ask spread is said to represent measurement of stock illiquidity. Risk-neutral investors will price these costs in valuation of their security, and, consequently, it will reduce their future return. The higher the bid–ask spread, the higher the returns expect by investors; thus, Amihud and Mendelson (1986) concluded that expected return is an increasing and concave function of a stock's bid–ask spread. Datar, Naik and Radcliffe (1998) supported this finding using an alternative measurement of liquidity, namely turnover rate; thus, they found that stock return negatively relates with the liquidity (turnover rate) after controlling for the three-factors proposed by Fama and French. Studies in the United States revealed that liquidity arises as one of dominant risk factors in determining asset pricing as noted by Acharya and Pedersen (2005); Garleanu (2009); Herdershott and Seasholes (2014); Pastor and Stambaugh (2003).

Brennan and Subrahmanyam (1996) applied different measurements of illiquidity. They used intraday transaction data as proxies of illiquidity measure. Transaction costs are divided into fixed and variable costs (trade-size dependent). Because there is asymmetric information between informed and uninformed traders, illiquidity cost for uninformed traders arises from informed traders. In most cases, the effect of illiquidity from asymmetric information is captured in the price trade volatility, which is part of the variable cost. Using data from NYSE/AMEX stock, Brennan and Subrahmanyam (1996) found that the relationship between premium return and variable costs is concave (positive relationship); this supports Amihud and Mendelson (1986). In contrast, fixed cost has a negative impact on the stock return (convex relationship), as reported by Cordia et al. (2001) and Jacoby (2000).

Bekaert, Harvey and Lundblad (2007); Chiang and Zheng (2015); Lee (2011) analysed the association between liquidity and stock returns. Chiang and Zheng (2015) used samples from G7 countries, and found that d illiquidity is a risk factor in pricing excess stock return. The authors also found market-illiquidity risks are greater for large stocks, higher growth stocks and more liquid stocks. Meanwhile Lee (2011), who expanded upon Acharya and Pedersen's (2005) model, used data from 22 developed countries and 28 emerging markets to document the covariance of stock-owned liquidity with aggregate market liquidity affected stock returns. These returns also depend on the covariance of its own liquidity with local and global market returns. Additionally, liquidity risks are important risk factors in determining the stock return in emerging market as shown by Bekaert et al. (2007). Empirical evidence from developed countries show that liquidity is an important driving factor in asset pricing model. This was proven by Czauderma, Riedle and Wagner (2015) for the German market, Lam and Tam (2011) for the Hong Kong stock market, Chang et al. (2010) and Hu (1997) for the Tokyo stock exchange, and Chan and Paff (2005); Limkriangrai, Durand and Watson (2008) for the Australian market. Meanwhile, Marcello and del Mer Miralles Quiroi (2006); Martinez et al. (2005) studied the Spanish market, while Dinh (2017) the Oslo stock market.

Dey (2005) showed that emerging markets can explain the relationship between liquidity and stock return. He applied turnover as a measurement of liquidity that drives cross-sectional stock returns in more than 40 global market indexes. Using a two-stage GLS regression model, Dey found that liquidity is positively related with the stock return for an emerging market; in contrast, finding for developed markets reveals that volatility in liquidity (illiquidity risk) is positively linked to stock returns. These conflicting findings between two markets were a puzzle for scholars when analysing the role of liquidity in determining asset pricing in emerging markets. This was confirmed by Jun, Marathe and Shawky (2003) that market liquidity has a positive impact on stock returns. On the other hand, Bekaert et al. (2007) reported that market liquidity risk is an important factor in pricing assets in Southeast Asia and Latin American due to the limited number of stocks and limited funds involved in the transactions; thus, this relationship does not change with the liberalisation process. The authors also suggested that the dynamic relationship between liquidity and stock returns are influenced by the continued process of liberalisation. Lee's study (2011) also supported that liquidity risk is a price factor in emerging markets.

There have been recent studies on the effect of liquidity on stock returns in emerging countries (Assefa & Mollick, 2014). The authors analysed sample from 16 countries in Africa, excluding South Africa, over the period of 1995–2010. Using static and dynamic panel data regression, they confirmed a positive relationship between liquidity and stock returns, which was consistent with that of Dey (2005) and Jun (2003). However, Hearn et al. (2010) also revealed the impact of liquidity and capital asset pricing in a larger sample in Africa, including South Africa. They found that illiquidity risk, as well as size and market risk, are dominant factors in pricing the asset return. Lischewski and Veronkova (2012) focusing on emerging markets (Central and Eastern Europe, especially Polish Market) showed unexpected results. The authors failed to prove the relationship between stock liquidity and stock returns even after controlling with three-factor Fama and French in the Warsaw stock exchange. However, size, market risk, and value are relevant factors in determining the stock price and return.

METHODS

Data and Variables Operation

Data for this study was from daily stock price data (high, low, and closing price) for individual firms in the KOMPAS 100 Index, market price index, market capitalisation, book-to-market value, Indonesian risk-free rate, and macroeconomics data such as GDP growth and inflation rate. Out of 100 listed stocks in KOMPAS 100, only 55 meet our requirements; the firm must be a nonfinancial company, and it must continuously listed in KOMPAS 100 in the period of study from January 2013 to June 2016. Data was obtained from the Indonesian stock exchange's web site for price of stock, market index, company's website for the firm's specific data, risk-free rate from Bank Indonesia website, and Indonesian Center Statistic Biro for macro-economic data.

Daily liquidity stock was constructed using Corwin and Schultz (2012) approach and then employ simple average method to measure the quarterly liquidity. The equation to compute liquidity measure as proposed by Corwin and Schultz (2012) is as follows:

$$S = \frac{2(e^{\propto} - 1)}{1 + e^{\propto}} \quad (1)$$

where

$$\propto = \frac{\sqrt{2\beta} - \sqrt{\beta}}{3 - 2\sqrt{2}} - \sqrt{\frac{\gamma}{3 - 2\sqrt{2}}} \quad (2)$$

while

$$\beta = E\left(\sum_{j=0}^{1}\left(ln\left(\frac{H_{t+j}^{0}}{L_{t+j}^{0}}\right)\right)^{2}\right) \quad (3)$$

and

$$\gamma = \left[\ln\left(\frac{H_{t,t+1}^{0}}{L_{t,t+1}^{0}}\right)\right]^{2} \quad (4)$$

H_{t+j}^{0} is the highest price at day t+j

L_{t+j}^{0} is the lowest price at day t+J

$H_{t,t+1}^{0}$ is the highest price over day t and t+1

$H_{t,t+1}^{0}$ is the lowest price over day t and t+1

Daily return for each security is calculated using

$$R_i = \frac{Price_t - Price_0}{Price_0} \quad (5)$$

In order to test the liquidity factor, a model was developed that includes other important control variables to estimate the excess returns: three factors from Fama and French, i.e., risk premium, the difference between market return and risk free rate, return on small market portfolios minus return on large market portfolio at given time or SMB, the return on high book market value portfolio minus low book to market value portfolio or HML. This three-factor model is expected to handle anomalies of average returns computation, which are not captured by the CAPM model (Fama & French, 1993).

Size premium factor (SMB) is constructed from the simple average return from small portfolio minus large portfolio. The sample is sorted based on its market capitalisation. As the sample size was small (55), data was categorised into twos—small and large portfolio—before calculating the simple average of small minus big SMB. Using the same method, the value premium factor (HML) is formed from the sorted data based on the book-to-market value ratio of the securities. Past performance of stocks is a consideration for investors executing a transaction. Investors who purchase the past winner or perform well and sell the stocks, which performed poorly in the previous period, could experience positive returns. This momentum strategy was revealed by Jagadesh and Titman (1993). Cakiki, Tang and Yan (2016); Carhart (1997) also studied the effect of momentums. In this paper, the momentum strategy was proxied using a variable lagged one-period return. Additionally, to study the impact of macroeconomic factors on the stock returns, GDP growth and inflation rate were factored into the model based on Assefa and Mollick (2014); Cakiki et al. (2016).

Empirical Models

As documented by earlier studies, stock returns have a positive (negative) correlation with illiquidity (liquidity). In order to investigate the relationship between liquidity (illiquidity) and excess stock returns, the simple basic CAPM model is followed by including the illiquidity factor:

$$R_{it} - R_F = \propto + \beta_1 LIQ_{it} + \beta_2 RP_t + \varepsilon_t \qquad (6)$$

then the panel data model is extended by including Fama–French three factors as follows:

$$R_{it} - R_F = \propto + \beta_1 LIQ_{it} + \beta_2 RP_t + SMB_t + HML_t + Ret_{i,t-1} + \varepsilon_t \qquad (7)$$

where R_{it} is the stock return for every firm *i*, R_F is the risk-free rate, LIQ_{it} is liquidity measurement for firm *I* measured by the Corwin and Schultz spread, RP_t is the market risk premium, which is equal to $RM_t - RF$, RM_t is the market index. SMB_t is the return on small market portfolios minus return on large market portfolio at given time *t*. HML the return on high book market value portfolio minus low to book market value portfolio for given quarterly data. $Ret_{i,t-1}$ is previous return stock *i*.

RESULTS AND ANALYSIS

Descriptive Statistics

Table 1
Descriptive statistics

	Ri	Rf	Ri-Rf	Spread	M_Premium	SMB	HML	INF	GDPG
Mean	0.0222	0.0179	0.0043	1.1075	-0.0059	-0.0101	0.0257	0.0054	0.0139
Max	0.1304	0.0163	0.1142	0.8079	0.0966	0.2126	0.2036	0.0066	0.0403
Min	-0.0314	0.0144	-0.0458	0.5961	0.0196	0.0392	0.0630	0.0063	0.0141
STD	0.0809	0.0009	0.0800	0.1059	0.0385	0.0867	0.0703	0.0002	0.0131

Notes: Ri = Return of individual stock; Rf = Risk free rate; Ri-Rf = The excess return; Spread = bid-ask spread Corwin and Schultz; M_Premium = The market risk premium; SMB = return on small market portfolios minus return on large market portfolio. HML the return on high book market value portfolio minus low to book market value portfolio

Table 1 shows that the mean quarterly excess return for the KOMPAS 100 Index and HML are positive; it also indicates there is premium value to compensate for the risk. The market premium and SMB, however, show negative value in the period studied. Negative value of risk premium could signify capital flight from the capital market to the safer investment places such as fixed-income securities or deposit to the banks. In line with the risk premium, negative value of SMB could indicate that investors switch to lesser-risk investment in the capital market. There is cost for investors for immediate execution of stock reflected in positive spread.

FINDINGS

The findings of this study are summarised in Table 2. Based on Corwin and Schultz (2012), the bid–ask spread has a significantly negative relationship with the excess return; however, when market risk and other factors are included in the regression, this liquidity factor disappears as an explanatory variable. This could be due to thin liquidity in the Indonesian capital market just like other emerging markets. This phenomenon could be explained by ownership structure in this market. The founder or his/her family members has owns large stake in many public-listed companies in Indonesia. The public has small ownership; even stocks in the market are still owned by the company's internal parties (minimum free-float requirement is only 7.5%). Majority shareholders do not trade and tend to hold their stocks; thus, only a small portion of stocks available in the market are to be transacted. Consequently, we would expect thin liquidity in the market; as a result, this illiquidity factor does not significantly affect price of the stock return. Findings of this study support that of Leirvik, Fiskerstrand and Fjellvikas (2017); Lischewski and Veronkova (2012) who analysed Polish and the Norwegian stock markets respectively.

The current study applied only one measurement of the liquidity method initiated by Corwin and Schultz (2012). As explained by several researchers such as Hasbrouck and Scwartz (1988), the concept of liquidity is elusive. Lesmond (2005a) suggested that to improve accuracy of liquidity of measurement in emerging markets, other methods may fare better. However, some studies use a single measure of liquidity, e.g., Acharya and Pedersen (2005); Amihud and Mendelson (1986); Marcello and del Mer Miralles Quiroi (2006). Recent studies used more than one measure of liquidity such as those by Assefa and Mollick (2014); Chiang and Zheng (2015); Lam and Tam (2011). Whether to apply single or several measurements of liquidity, generally, the authors showed liquidity plays an important role in determining asset price and returns.

The regression table also shows strong evidence to support two of three factors per Fama and French. The market risk factor and size of company as predicted significantly affect excess returns. The study shows market risk factor (RP) is positively related to the excess returns, and size premium (SMB) consistently has been positive and significantly affects excess return; thus, it implies that larger stocks have a lower risk premium than small stocks. Meanwhile, book-to-market or "value premium" (HML) is consistently related with excess returns; however, the relationship is not significant. This is because investors in the Indonesian market trade the stock speculatively; they are concerned over short-term investment and pay less attention to the role of fundamental analysis generated by financial reports. The results support that of Wang and Zu (2004) who examined the Chinese market, where the size premium enhanced the explanatory model. Meanwhile, market to value is not relevant in explaining returns. Additionally, the present study's findings also support empirical results of de Groot and Verschoor (2002) who showed that small stocks outperform large stocks in India, Korea, Malaysia, Taiwan, and Thailand. However, market-to-book value has a significant effect on stock returns only in Korea, Malaysia, and Thailand.

The previous (one-lagged) return ($R_{i,t-1}$) shows a strong significant effect on excess return. The coefficient of this previous return is negative, which indicates that investors must pay attention on past quarter stock return to avoid the biased model. A negative relationship between these past stock returns and excess returns is also found in G7 country markets (Chiang & Zheng, 2015).

Macroeconomic variables such as inflation rate and GDP growth have a positive link with excess securities returns. However, only inflation rate significantly affects excess returns. A positive relationship between inflation and the excess returns implies that the Indonesian capital market has provided a hedge against inflations; thus, investors need not worry because their funds have been protected from severe inflation.

Table 2
Regression results; dependent variable is the excess return

	1		2		3		4	
C	0.0178		0.0115		0.0151		-0.0008	
	(0.110)		(0.233)		(0.210)		(0.956)	
SPREAD	-0.0196	*	0.0026		0.0057		0.0015	
	(0.062)		(0.777)		(0.533)		(0.872)	
M_PREMIUM			1.5075	***	1.3168	***	1.3291	***
			(0.000)		(0.000)		(0.000)	
SMB					0.2608	***	0.1473	*
					(0.000)		(0.078)	
HML					0.0337		0.1757	
					(0.781)		(0.167)	
Ri(-1)							-0.1198	***
							(0.000)	
INF							3.0124	**
							(0.022)	
GDPG							0.5614	
							(0.188)	
R-squared	0.05297		0.293029		0.313851		0.288301767	

The p-values are shown in the parentheses; ***, ** and * denote significance at 1%, 5% and 10% levels respectively

CONCLUSION

This paper examined whether liquidity is a pricing factor in the Indonesian capital market. As revealed by Amihud and Mendelson (1986); Chiang and Zheng (2015); Pastor and Stambaugh, (2003) the liquidity factor is an important variable in determining the stock return in a developed capital market. This study used the daily stock price data in the KOMPAS 100 Index to measure the bid–ask spread via Corwin and Schultz (2012) as stock liquidity measurement. In examining the relationship between liquidity factor and stock return, the present study expanded the three-factor model by Fama and French (Fama & French, 1993) and included size of company, previous return of each firm, and macroeconomic factors, namely inflation rate and GDP growth.

The results of this study showed there is no relationship between liquidity and stock returns; thus, in the Indonesian capital market, the stock liquidity is not a priced factor. This may be due to thin liquidity in the market. Ownership structure and number of companies listed in the market may be the reason for the market's lack of liquidity. The founders and families still own majority of the stake in the firm and thus, only a small part of ownership goes to the market. Even insiders or founders own some of stocks listed in the market. They keep their stocks in the box; thus, only a small part of the securities actively transacts in the market.

Market risk and size factor (SMB) are factors that affect excess return; however, other Fama and French factors namely, value premium, (HML) do not significantly influence excess return. Speculative trading and holding the value stocks or riskier stocks for the sort time period by investors may not impact the returns; additionally, investors do not pay attention to book value and the fundamental condition of their traded stocks. Past excess return shows significant information content in predicting future excess return. The relationship of this variable is negative leading to investors considering this factor in calculating return investment. Macroeconomic variables, such as when the inflation rate indicates positive relationship, imply there is availability of hedging against inflation in this capital market.

In order to increase liquidity in the market, this study suggest that stock exchange should boost the interest of people doing transactions in the capital market; regulators need to improve their effort to educate investors, in order to further expand the target market, including institutional and individual investors. Financial authorisation is also needed to encourage private companies to raise capital and encourage companies that have listed its stock in the capital market to sell more stock to the public to increase public ownership.

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Here and There: Cross-border Evidence of Commonality in Liquidity of ADR in Asia Pacific

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ABSTRACT

This study examines the evidence for commonality in liquidity of the American Depository Receipts (ADR) in the context of Asia Pacific countries which are classified into developed markets (Australia, Hong Kong, Japan, New Zealand and Singapore) and emerging markets (China, India, Indonesia, South Korea, Malaysia, Philippines, Thailand and Taiwan). In order to understand the impact of cross listing towards co-movement in liquidity of stocks across border, liquidity features of each market are first evaluated. The ADRs from developed markets tend to be more liquid. In terms of commonality, this study shows (i) commonality in liquidity is evident at the firm level in which the emerging market displayed more co-movement in contrast with developed market; (ii) at the country level, commonality only indicated by weak sign in which the developed market tends to be higher than emerging market; (iii) at the regional level, the commonality of the ADR is also evident in which there is an influence of the ADRs from developed market on the emerging market, and (iv) commonality in liquidity of ADR still holds during the crisis period (based on robustness test).

Keywords: American Depository Receipts (ADR), liquidity, commonality in liquidity, cross-listing

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INTRODUCTION

Liquidity and price discovery are two important aspects of stock markets, and the two are linked indistinguishably. Securities markets that can provide price discovery tend to be liquid and vice versa. Liquidity is very important as it is related to returns that the investor expects from the market (Amihud, 2002; Amihud & Mendelson, 1986; Brennan & Subrahmanyan, 1996). Research on liquidity has shifted from individual securities attributes to market liquidity features. Chordia, Roll and Subrahmanyam (2000) are the first to point out the missing link in liquidity assessment by proposing the possibility of an individual asset 'co-move' with overall market wide liquidity. This feature is now referred to *commonality in liquidity* or common cross-sectional variations in returns, liquidity, and trading activity that appear within or across stocks.

Studies on commonality in liquidity show co-movement in liquidity is global phenomenon (Brockman & Chung, 2002; Fabre & Frino, 2004; Pukthuanthong-Le & Visaltanachoti, 2009) and evident at various levels including for individual stocks and both intra-market and inter-market (Brockman, Chung, & Perignon, 2009; Dang et al., 2015; Karolyi, Lee, & Van Dijk, 2012). The importance of market liquidity co-movement among stocks is amplified by the growing interest in cross-listings, in particular in emerging countries. According to the Bank of New York report in January 2016, the total value traded for the Asia Pacific firms in 2015 was $1,373 billion or 44 billion in volume, with China as the highest country traded (about $1,016.8 billion). As a consequence, the cross-border investment flows raise the question whether the home market (*'here'*) or the host market (*'there'*) that determines the liquidity co-movement across markets.

To advance the importance of cross-listing towards liquidity commonality, we notice an important gap in the literature regarding the impact of cross-listing towards commonality in liquidity in which American Depository Receipts (ADR) could stand as an intermediary to evaluate the link between liquidity, commonality in liquidity and asset pricing. The ADR are claims against home-market common shares issued by a US depository bank which trades, quotes and settles in US dollars. For practical purposes, ADR is equivalent to common stock and close enough substitute to provide an arbitrage relationship between the US market and the corresponding home shares market where the stock originates.

An ample understanding of liquidity and its dynamic within and across the market is important not only for domestic but also international investors as well as regulators. Emerging markets such as the Asia Pacific provides an ideal setting to explain the link between commonality patterns and the pricing mechanism in stock liquidity. In addition, liquidity problem in emerging markets is more severe than in developed market since their market structure is also different (Bekaert, Harvey, & Lundblad, 2007). Thus, this study contributes to the discussion on asset pricing and emerging market issues.

The rest of this paper is organised as follows. Section 2 reviews related studies while Section 3 discusses research methodology and data selection. Section 4 present empirical findings followed by a discussion of the results in Section 5. The paper is summarised and concluded in Section 6.

LITERATURE REVIEW

The American Depository Receipts (ADR) is believed to be an important element to detect commonality in liquidity, particularly for emerging markets. In this section, we first review some theories on liquidity and commonality in liquidity.

Liquidity

The term liquidity is used to describe (i) *funding liquidity*, (ii) *market liquidity*, and (iii) *global liquidity* (Jorion, 2007). In this paper, the term liquidity is related to liquidity of an asset. According to Kyle (1985), the liquidity of an asset is defined as the ability to trade a large amount of asset quickly, and at a low cost when one wants to trade. Kyle also explains the dimensions of liquidity such as *tightness, depth, breadth, immediacy* and *resiliency*. However, it is generally accepted there is no clearly accepted definition of liquidity among scholars. Consequently, there is also no single measurement that can represent all of the dimensions above.

Various proxies have been introduced as measures of liquidity including measurement for high and low frequency data. Since this study is interested in ADR liquidity features, low frequency proxies are more applicable. Amihud's *Illiquidity* (2002) is among the most applied measure in recent studies (Dang et al., 2015; Karolyi, Lee, & Van Dijk, 2012). Amihud's Illiquidity is a price impact measure based on daily price response related to the trading volume of one dollar of stock's trading volume. This ratio is selected as the main measurement of liquidity in this study as it covers the five dimensions of liquidity and is also a robust measurement for the ADR (Chan, Hong, & Subrahmanyam, 2008).

Commonality in Liquidity

Commonality in liquidity refers to the extent of market-wide (or industry-wide) liquidity that affects the liquidity of individual securities (Chordia, Roll, & Subrahmanyam, 2000). In other words, commonality in liquidity refers to the common underlying determinants of liquidity across securities. Empirically, it can be observed as the *co-movement* between the variations in individual stock liquidity and variations in market-wide liquidity as discussed by Chordia, Roll and Subrahmanyam (2000) as "*liquidity commonality*" or "*systematic liquidity*" as discussed by (Huberman & Halka, 2001).

There has been many empirical studies on commonality in liquidity in various markets such as Hong Kong, Australia, the U.K. and Thailand (Brockman & Chung, 2002; Fabre & Frino, 2004; Galariotis & Giouvris, 2007; Pukthuanthong-Le & Visaltanachoti, 2009). A comprehensive approach on liquidity commonality based on massive data from markets around the world has become a trend in recent research. Karolyi, Lee and Van Dijk (2012) report within-country commonality in return, liquidity, and turnover for 40 countries including emerging and developed countries from 1995 to 2004. They show the extent of commonality in one country is inversely related to its economic and institutional development. More recently, Dang et al. (2015) examined commonality in liquidity based on 39 stock markets between 1995 and 2007. The authors focused on the impact of cross-listing in each country selected yet they did not assess directly the object of cross-listing or the ADR.

This study proposes that liquidity commonality can be observed in the ADR of Asia Pacific stock markets. While past research has focused on the property of stocks, this study argues that commonality can be detected in the new channel (the ADR), at levels of measurement level (firm, country, and regional levels), and in multi-market settings. Therefore, the following hypothesis is proposed.

H1. There exists commonality in liquidity in the ADR of the Asia Pacific stock market

Commonality in liquidity of ADR is expected to be higher in the emerging markets in Asia Pacific compared with developed markets. It is expected the developed markets would contribute to the commonality in liquidity of the emerging markets.

METHODS

The unit analysis investigated in this study is firms in Asia Pacific countries that are cross listed in the US by issuing an ADR. Based on the MSCI Index classification, countries in the Asia Pacific region are grouped into developed markets (Australia, Hong Kong, Japan, New Zealand, and Singapore) and emerging markets (China, India, Indonesia, South Korea, Malaysia, Philippines, Thailand and Taiwan). Samples are collected from Bloomberg (Level I, II and III ADRs that traded in the NYSE and the OTC) between 1 January 2000 and 29 January 2015. In total, there are 1375 ADR, which include 802 firms from developed countries and 573 firms form emerging countries. Daily variables collected include date, last sale prices, volume, ADR ratio and the Book to Market Ratio. Screening procedures are then applied to the entire datasets. First, all available ADR data is matched with their corresponding home market's stock prices and volumes, as well as their corresponding ADR. The collection of the same set of data for the corresponding shares in the home market must also occur. This eliminates incomplete data from period of observations. Second, the US daily market returns are also examined for the same period. Third, the daily foreign exchange rates are collected for the purpose of converting the home market currency into US dollars as well as the corresponding home market stock daily returns. A total of 235 and 134 ADR was collected for developed markets and emerging markets respectively.

Variables and Liquidity Measurements

At the first stage of analysis, the liquidity profile of the individual ADR using selected measures of liquidity is assessed. As proxies of liquidity, *Amihud's Illiquidity (L)* and *Difference in Illiquidity (DL)* is used. Amihud's (2002) Illiquidity is defined as the ratio of the daily absolute return to the stock's dollar trading volume in millions. This ratio represents the price impact which closely follows Kyle (1985). This measure is calculated on daily basis, and averaged into monthly frequency. On each day *d*, for each ADR *i* (and its corresponding home shares) from country *c*, Amihud's Illiquidity (L) is calculated as a daily absolute return divided by daily volumes. The monthly market illiquidity ratio is the equally weighted average of individual ADR and home share illiquidity ratios which are calculated as follows:

$$L_{i.c.t} = \frac{1}{D_t} \sum_{d=1}^{D_t} \frac{|R_{i,d}|}{Vol_{i,d}} \quad (1)$$

where D_i is number of trading days in month *t*, $R_{i,d}$ is the daily return of ADR *i* on day *d* (within month *t*), and $Vol_{i,d}$ is the dollar trading volume of ADR *i* on day *d*, which is defined as the number of shares traded times the ADR price on day *d*. In order to compare this ratio across markets, adjustments are made by constructing the dollar denominated Amihud's Illiquidity ratio so that the return comes not only from the changes in stock prices but also from the increase or decrease in the exchange rate.

The second proxy is generated from the first measurement called Difference in Illiquidity (DL). This ratio basically measures the monthly difference of illiquidity of ADR *i* (and its corresponding home shares) from country *c* which is calculated as follows:

$$DL_{i,c,t} = \frac{1}{D_t} \sum_{d=1}^{Dt} \left(\frac{L_{i,c,t} - L_{i,c,t-1}}{L_{i,c,t-1}} \right) \quad (2)$$

where D_i is number of trading days in month *t*, $L_{i,c,t}$ is the liquidity of ADR *i* of country *c* in month *t* and $L_{i,c,t\text{-}1}$ is the previous period liquidity of ADR *i* of country *c* in month *t*.

In the next stage, in each month, the aggregate market liquidity of both ADR and the home shares is calculated as the equally weighted average of all individual ADR and its home shares Amihud's Illiquidity (L) ratio. We follow the similar procedures as per Chordia, Roll, and Subrahmanyam (2000) in calculating average market liquidity, for all ADR as well as their corresponding home shares. This method requires inclusion of all ADR or all home shares instead of *firm j* being analysed while calculating the average market liquidity. By conducting these measurements repeatedly, the overall individual and market variables for ADR and their corresponding home shares can be obtained.

Estimation of Commonality in Liquidity

Estimations of commonality are performed by developing the standard market model regression as per Chordia, Roll and Subrahmanyam (2000). Our models are developed for each level of analysis including the firm-by-firm level, the country-by-country level, and the region-by-region level.

In the first stage of analysis, firm-by-firm commonality of ADR is detected by regressing the monthly percentage changes in liquidity ($DL^{adr}_{i,c,t}$) on the monthly percentage changes in the concurrent market liquidity ($DL^{adr}_{m,c,t}$), lead market liquidity ($DL^{adr}_{m,c,t+1}$) and lagged market liquidity ($DL^{adr}_{m,c,t-1}$) for ADR_i in country c. The complete model is as follows:

$$DL^{adr}_{i,c,t} = \alpha_{i,c,t} + \beta_1 DL^{adr}_{m,c,t} + \beta_2 DL^{adr}_{m,c,t+1} + \beta_3 DL^{adr}_{m,c,t-1} + \varepsilon_{i,c,t} \tag{3}$$

The main purpose of this model is to evaluate whether the individual ADR's liquidity co-moves with its market liquidity in the host market.

The second model tested for the firm-by-firm level extends Equation (3) by including the concurrent ADR_j corresponding home market liquidity of country c, ($DL^{hs}_{m,c,t}$), along with its lead ($DL^{hs}_{m,c,t+1}$) and lagged ($DL^{hs}_{m,c,t-1}$) for ADR i in country c. The complete model is as follows:

$$DL^{adr}_{i,c,t} = \alpha_{i,c,t} + \beta_1 DL^{adr}_{m,c,t} + \beta_2 DL^{adr}_{m,c,t+1} + \beta_3 DL^{adr}_{m,c,t-1} + \beta_4 DL^{hs}_{m,c,t} + \beta_5 DL^{hs}_{m,c,t+1} + \beta_6 DL^{hs}_{m,c,t-1} + \varepsilon_{i,c,t} \tag{4}$$

The main purpose of this model is to evaluate whether individual ADR's liquidity co-moves with its market liquidity (*there*) of the host market (the US) as well as its market liquidity of the corresponding home shares (*here*).

In the second stage of analysis, we expand the analysis to the country level. The first model we test is as follows:

$$DL^{adr}_{c,t} = \alpha_{f,t} + \beta_1 DL^{adr}_{m,t} + \beta_2 DL^{adr}_{m,t+1} + \beta_3 DL^{adr}_{m,t-1} + \varepsilon_{c,t} \tag{5}$$

where the weighted average of monthly percentage changes in liquidity ($DL^{adr}_{c,t}$) from all ADR in country c in month t is regressed on the monthly percentage changes in the equally weighted average of all countries' concurrent market liquidity ($DL^{adr}_{m,t}$), lead market liquidity ($DL^{adr}_{m,t+1}$), and lagged market liquidity ($DL^{adr}_{m,t-1}$). The second model isolates the impact of ADR's corresponding home shares market liquidity as follows:

$$DL^{adr}_{c,t} = \alpha_{c,t} + \beta_1 DL^{adr}_{m,t} + \beta_2 DL^{adr}_{m,t+1} + \beta_3 DL^{adr}_{m,t-1} + \beta_4 DL^{hs}_{m,t} + \beta_5 DL^{hs}_{m,t+1} + \beta_6 DL^{hs}_{m,t-1} + \varepsilon_{c,t} \tag{6}$$

where the weighted average monthly percentage changes in liquidity ($DL^{adr}_{c,t}$) from all ADR in country c on month t is regressed on the monthly percentage changes in equally weighted average of developed market concurrent liquidity ($DL^{adr}_{dm,t}$), lead developed market liquidity ($DL^{adr}_{m,t+1}$) and lagged developed market liquidity ($DL^{adr}_{m,t-1}$).

Lastly, the models are modified in order to evaluate the commonality at the regional level. The first model tested is as follows:

$$DL^{adr}_{em,t} = \alpha_{em,t} + \beta_1 DL^{adr}_{dm,t} + \beta_2 DL^{adr}_{dm,t+1} + \beta_3 DL^{adr}_{dm,t-1} + \varepsilon_{em,t} \tag{7}$$

where the weighted average monthly percentage changes in liquidity ($DL^{adr}_{em,t}$) from all ADR in emerging market (*em*) in month *t* is regressed on the monthly percentage changes in the equally weighted average of the developed market (*dm*) concurrent liquidity ($DL^{adr}_{dm,t}$), lead developed market liquidity ($DL^{adr}_{m,t+1}$) and lagged developed market liquidity ($DL^{adr}_{m,t-1}$).

In the next model, the influence of the home shares liquidity of developed markets (*dm*) on the emerging markets (*em*) liquidity by extending the previous first model with the concurrent home share developed market liquidity ($DL^{hs}_{dm,t}$), lead market liquidity ($DL^{hs}_{dm,t+1}$), and lagged home share market liquidity ($DL^{hs}_{dm,t-1}$) is considered. The complete model is as follows:

$$DL^{adr}_{em,t} = \alpha_{em,t} + \beta_1 DL^{adr}_{dm,t} + \beta_2 DL^{adr}_{dm,t+1} + \beta_3 DL^{adr}_{dm,t-1} + \beta_4 DL^{hs}_{dm,t} + \beta_5 DL^{hs}_{dm,t+1} + \beta_6 DL^{hs}_{dm,t-1} + \varepsilon_{em,t} \tag{8}$$

A robustness test is conducted to validate the analysis of liquidity commonality, based on the sub-period estimations and to examine how the crisis period affects liquidity commonality. Firm level analysis for 4 sub-periods is performed which is constructed based on the global economic and financial crisis timeline reported by several sources such as the US Federal Reserve Board (FRB) Report, Business Report from the Guardian, Wharton, The Lauder Institute Wharton Arts and Science, and Federal Reserve Bank of St. Louis. These four periods are: (i) January 2000 to July 2003, (ii) August 2003 to January 2007, (iii) February 2007 to March 2011, and (iv) April 2011 to January 2015. The main intention is to show whether commonality in liquidity of ADR is greater or less during the period of financial crisis.

RESULTS AND DISCUSSIONS

This section discusses the empirical results regarding commonality in liquidity of Asia Pacific ADR.

Liquidity Features of ADR

In Table 1, the ADR's average monthly illiquidity (L) is presented while in Table 2 the monthly Difference in Illiquidity (DL) measure is described.

The average illiquidity ADR of the emerging market is higher than that of the developed market which means that emerging market is still less attractive. The illiquidity of Malaysia's ADR is the highest among the countries while Taiwan's is the lowest. Meanwhile, for the home shares, a lower illiquidity ratio in contrast to ADR is seen. On average, the emerging markets have the lowest illiquidity than the developed ones. However, this study shows Amihud's Illiquidity measure in certain countries (Hong Kong, Japan, China, Korea, and Taiwan) is not free from the unit root problem and the first order autocorrelation or ρ(-1) is significant. Thus, stationarity issue becomes a major consideration for using the illiquidity ratio as the main measurement in investigating the commonality.

Table 1
Summary statistics of Amihud's Illiquidity (l) measures

Market	ADR					Home Shares				
	Mean	Med	Std. Dev	ADF	ρ(-1)	Mean	Med	Std. Dev	ADF	ρ(-1)
Developed markets										
Australia	0.004	0.002	0.011	-6.172	-0.531	0.000	0.000	0.000	-4.684	-0.313
Hong Kong	0.003	0.001	0.005	0.930	0.260*	0.000	0.000	0.000	-11.133	-0.821
Japan	0.003	0.002	0.003	-0.893	-0.070	0.000	0.000	0.000	-4.228	-0.286
New Zealand	0.005	0.000	0.028	3.519	1.184	0.000	0.000	0.000	-13.651	-1.023
Singapore	0.004	0.002	0.010	-5.442	-0.320*	0.000	0.000	0.000	-5.500	-0.430
Mean	0.003	0.001	0.012	-1.612	0.105	0.000	0.000	0.000	-7.840	-0.575
Emerging markets										
China	0.003	0.000	0.007	1.216	0.091*	0.000	0.000	0.000	-5.304	-0.336
India	0.000	0.000	0.000	-4.952	-0.359	0.000	0.000	0.000	-13.199	-0.989
Indonesia	0.003	0.000	0.005	4.571	0.269	0.000	0.000	0.000	-3.748	-0.476
South Korea	0.000	0.000	0.002	-0.777	-0.242*	0.000	0.000	0.000	-6.299	-0.364
Malaysia	0.011	0.001	0.072	2.160	1.708	0.000	0.000	0.000	-6.930	-0.425
Philippines	0.005	0.000	0.015	3.210	0.517	0.000	0.000	0.000	-6.650	-0.399
Thailand	0.009	0.002	0.037	3.736	3.413	0.000	0.000	0.000	-9.141	-0.637
Taiwan	0.000	0.000	0.000	-2.325	-0.193*	0.000	0.000	0.000	-7.630	-0.392
Mean	0.004	0.000	0.017	0.855	0.651	0.000	0.000	0.000	-7.363	-0.502

Note: (*) on ρ(-1) indicates significant at the 5% level

In Table 2, on average the emerging market ADR has a higher value than the developed markets' ADR as shown in Table 1. Taiwan's ADR is reported to show the highest value of DL, while Philippines's ADR is the lowest. Regarding the stationarity issue, it is evident that in all series, both ADR and its corresponding home shares are free from unit roots. Therefore, we use the DL measure result to perform the commonality test in the next stage.

Table 2
Summary statistics of Difference in Illiquidity (dl) measures

Market	ADR					Home Shares				
	Mean	Med	Std. Dev	ADF	ρ(-1)	Mean	Med	Std. Dev	ADF	ρ(-1)
Developed markets										
Australia	2.238	0.137	2.677	-3.583	-0.376	1.921	1.528	1.569	-11.616	-0.860
Hong Kong	2.977	0.115	6.048	7.745	0.435	1.219	0.915	2.282	-13.421	-1.006
Japan	3.426	-0.370	11.142	-12.662	-0.948	0.923	0.903	0.288	-5.731	-0.496
New Zealand	2.180	0.033	14.324	4.732	2.707	2.316	1.570	3.047	-12.514	-0.496
Singapore	2.605	-0.078	6.509	-11.427	-0.886	0.630	0.542	0.401	-10.640	-0.778
Mean	2.685	-0.033	8.140	-13.066	0.186	1.402	1.093	1.516	-10.784	-0.727
Emerging markets										
China	3.595	0.100	13.391	-13.066	-0.980	0.712	0.769	0.444	-12.013	-0.0903
India	3.471	0.063	3.962	-8.578	-0.583	2.953	2.236	2.891	-12.791	-0.958
Indonesia	2.732	0.031	7.789	7.776	0.532	0.854	0.576	1.047	-12.965	-0.971
South Korea	2.999	0.310	9.992	-11.403	-0.844	0.785	0.715	0.376	-7.8024	-0.729
Malaysia	3.287	-0.092	13.842	-10.617	-0.960	0.729	0.296	2.181	-8.292	-0.557
Philippines	1.458	0.019	6.911	-11.835	-0.883	1.982	1.014	3.668	-12.523	-0.937
Thailand	2.933	-0.024	18.753	4.590	3.103	3.340	2.318	4.156	-11.131	-0.820
Taiwan	4.247	0.065	16.146	-13.379	-1.002	1.003	0.725	1.607	-9.266	-0.913
Mean	3.090	0.059	11.348	-7.0637	-0.202	1.545	1.081	2.046	-10.848	-0.747

Note: (*) on ρ(-1) indicates significant at the 5% level

Firm-by-Firm Commonality in Liquidity

In order to test the commonality in liquidity at the firm level, a regression test based on the market model as described in Equations (3) and (4) are run. The complete results are shown in Table 3 Panel A (Equation (3)) and Panel B (Equation (4)).

Table 3
Firm-by-Firm commonality results

	Panel A: Concurrent ADR Liquidity							Panel B: Concurrent Home Shares Liquidity						
Market	Mean	t-stats	R^2 (%)	% (+)	% (+) Sig.	SUM	p-value SUM-Med Sign Test	Mean	t-stats	R^2 (%)	% (+)	% (+) Sig.	SUM	p-value SUM-Med Sign Tes
Developed markets														
Australia	0.323	3.328*	7.35	82.86	40.00	0.606	0.000	0.173	0.962	9.05	57.14	8.57	0.559	0.000
Hong Kong	0.382	2.952*	13.65	87.67	41.10	0.094	0.000	0.000	-0.0124	16.38	69.86	6.85	0.297	0.000
Japan	0.273	2.519*	8.52	90.72	26.80	0.0909	0.000	0.000	0.033	10.17	48.45	3.09	0.093	0.000
New Zealand	0.353	1.984	24.14	100.00	11.11	-0.015	0.019	-0.024	-2.441*	24.98	22.22	0.00	0.072	0.016
Singapore	0.286	7.326*	11.27	100.00	80.95	0.095	0.000	0.000	-0.165	12.23	47.62	0.00	0.286	0.000
Mean	0.323	3.622	12.98	92.25	39.99	0.174	-	0.030	0.204	14.56	49.06	3.70	0.261	0.003
Emerging markets														
China	0.080	2.999*	3.48	88.00	40.00	0.380	0.000	0.000	0.059	7.79	78.00	6.00	0.060	0.000
India	0.444	4.151*	18.56	100.00	66.67	0.259	0.090	0.000	0.185	19.14	22.00	0.00	0.222	0.254
Indonesia	0.271	2.863*	20.51	100.00	50.00	-0.062	0.000	0.120	1.079	21.75	55.00	10.00	0.203	0.000
South Korea	0.500	1.972*	35.14	90.00	40.00	0.167	0.055	0.000	0.150	36.66	50.00	0.00	0.067	0.172
Malaysia	0.333	1.414	36.08	100.00	66.67	0.111	0.016	0.000	-1.335	36.61	50.00	0.00	0.110	0.015
Philippines	0.214	1.584	17.95	92.86	78.57	0.071	0.000	0.000	0.033	18.35	7.14	0.00	0.071	0.001
Thailand	0.054	1.264	16.79	89.47	10.53	0.638	0.000	-0.010	-1.677	24.60	15.79	0.00	0.631	0.000
Taiwan	0.167	1.784	21.83	83.33	33.33	0.056	0.109	0.000	-3.027*	23.78	16.67	0.00	0.056	0.109
Mean	0.288	2.254	21.29	92.86	48.22	0.203	-	0.014	-0.215	23.59	36.83	2.00	0.178	0.069

Note: Firm-by-firm (371) time series regressions of DL measure are estimated using Equation (3) & (4) with the 5% level of significance. (*) indicates that the t-stat is significant at the 5% level of significance

It is evident that commonality in liquidity of ADR exists for both developed and emerging markets in the Asia Pacific as indicated by the extremely high positive and significant coefficient of concurrent ADR market liquidity (β_1) in Panel A (see Table 3). Singapore, the Philippines, Malaysia, and India have the highest coefficients. Further results on SUM (the sum of coefficients β_1, β_2, and β_3), suggest strong evidence of liquidity in commonality in ADR with the exception of India, South Korea, and Taiwan. However, the *one sample t-test* of β_1 shows significant results mostly for ADR from developed markets including Australia, Hong Kong, Japan, and Singapore, while for emerging market only for China, India, Indonesia and South Korea. In terms of magnitude of commonality, on average, R^2 of the emerging market ADR is almost two times greater than the R^2 of developed markets which confirms the findings of Karolyi, Lee and Van Dijk (2012). China has the lowest R^2 value which is in contrast to the findings of Karolyi, Lee and Van Dijk (2012). The reason could be the use of normal individual stocks in their study.

In addition to the concurrent ADR market liquidity, it is interesting to note the impact of concurrent market liquidity of home shares on the co-movement of ADR, as indicated by coefficient β_4 in Panel B (see Table 3). However, the concurrent market liquidity of the corresponding home shares does not contribute a substantial impact on the co-movement of ADR. The number of positive and significant coefficients of β_4 are very small, both for developed and emerging markets. In terms of magnitude, China has the lowest contribution. Overall, it can be seen the commonality of emerging market's ADR exceeds that of the developed market as described earlier. However, these results suggest that the home shares market liquidity, or '*here*', is not an important factor affecting the co-movement in ADR liquidity.

Country-by-Country Commonality in Liquidity

In the next analysis, the country level is examined and for this purpose, two main groups of variables are proposed as explained in Equation (5) and (6); they are labelled as *Country ADR Liquidity Variables*, and *Country Home Shares Liquidity Variables*. In Panel A in Table 4, only a weak sign of commonality in liquidity is observed since none of the $\beta 1$ coefficient is significant at the 5% level. Similar to the firm level, on average, the developed markets' coefficients are higher than the emerging market. However, the countries that have positive and significant coeffcients is only 7.69% for both groups. In terms of magnitude, the average R^2 of the developed market is also higher than that of the emerging market, and the *SUM-Med Sign Test* is also rejected for each market confirming the existence of liquidity co-movement, although at a weak level.

Table 4
Country-by-country commonality results

Market		Average	t-stats	R^2 (%)	% (+)	% (+) Sig.	SUM	p-value SUM-Med Sign Test
Panel A	Country ADR Liquidity Variables							
Developed markets	β_1	0.346	0.885	24.72	23.08	7.69	1.010	0.000
Emerging markets	β_1	0.086	0.398	12.65	23.08	7.69	0.886	0.000
Mean		0.216	0.642	18.69	23.08	7.69	0.890	-
Panel B	Country ADR and Country Home Shares Liquidity Variables							
Developed markets	β_1	0.346	0.890	26.24	38.46	7.69	1.260	0.000
	β_4	0.283	1.147		38.46	0.00		
Emerging markets	β_1	0.083	0.386	13.54	61.54	7.69	0.737	0.000
	β_4	0.103	0.273		61.54	0.00		
Mean	β_1	0.215	0.638	19.89	50.00	7.69	0.898	-
	β_4	0.193	0.710		50.00	0.00		

Note: Country-by-country (13) time series regressions of average DL measure of one country's ADR is estimated using Equation (5) and (6) with a 5% level of significance. (*) indicates that the t-stat is significant at the 5% level of significance

Panels A and B have similar patterns, which indicate the co-movement of the ADR' liquidity across countries is evident although at a weak level. None of the coefficients from the market liquidity of the country's corresponding home shares is significant at the 5% level although it has a positive sign. In line with these findings, the number of positive and significant β_4 is also equal to zero for both the developed and emerging markets. This result suggests that the co-movement of ADR liquidity in one country is not induced by the market liquidity of another country's ADR. In other words, the liquidity performance of other countries' ADR may not be considered important for investors to invest in one specific country's ADR.

Region-by-Region Commonality in Liquidity

Expanding the investigation of commonality in liquidity to regional level has been discussed by Brockman, Chung and Perignon (2009). The focus of the present study is to test whether the liquidity changes of ADR in one region has a substantial impact on the ADR in other regions. In this study, it is assumed the emerging market would follow the developed market's liquidity movement.

Table 5
Region-by-Region commonality in liquidity results

Variable	Eq.	β_1	β_2	β_3	β_4	β_5	β_6	R^2
ADR of developed market	(7)	1.023	-0.001	-0.038	-	-	-	39.18
		[7.835] **	[-0.114]	[-4.545] **	-	-	-	
Home shares of the developed market	(8)	1.023	0.000	-0.039	-0.016	-0.030	-0.057	39.19
		[6.966] **	[0.020]	[-4.559] **	[-0.370]	[-0.692]	[-1.303]	

Note: Region-by-region time series regressions of DL measure are estimated using Equation (7) and (8). (*) indicates that the t-stat is significant at the 5% level of significance, an (**) indicates that the t-stat is significant at 1% level of significance

The results in Table 5 show that for both equations, the coefficient of β_1 or the concurrent variable is positive and significant at the 1% level. Those results confirm earlier prediction that ADR's developed market influences that of the emerging market. In other words, there is liquidity co-movement among regions. Beyond the firm level and the country level, commonality in liquidity of ADR also exists at the regional level. Interestingly, it is also an indication that not only does the concurrent coefficient of ADR liquidity from the developed market affects the liquidity of ADR emerging market, but also the coefficients of β_3, or the lead variable, that have a significant negative impact on emerging market ADR liquidity.

The Impact of Crisis on Commonality of ADR

The robustness of this study's analysis is shown in Table 6.

The results indicate that the magnitude of liquidity in commonality of ADR, R^2, varies along the upward and downward trend in the market movement. In Sub-Period 1, on average the magnitude of co-movement in the ADR's liquidity is higher for the emerging market than for the developed market. During this period, South Korea, Thailand, India and Indonesia show the highest liquidity commonality. In Sub-Period 2, the highest level of commonality remains the same for these five countries. However, in Sub-Period 3, or during the Global and Financial Crisis period, Thailand indicates the weakest level of commonality compared with all other countries. In the Sub-Period 4, or the last period of observations, Japan shows the smallest magnitude of commonality among all other countries' ADR. Although commonality in liquidity of ADR is persistent across all samples in all sub-periods, the global and financial crisis responded differently among the emerging and developed markets. The emerging markets are more vulnerable to crisis but developed markets seems to be more prepared to respond the crisis. Despite the high level of co-movement, the emerging markets' R^2 tend to decrease in all periods of estimations. In contrast, the commonality of the developed markets' ADR tends to be more stable and increased for the overall period.

Table 6
Commonality in liquidity during the crisis and non-crisis sub-period estimations

Periods	Sub-Period 1	Sub-Period 2	Sub-Period 3	Sub-Period 4
	The Dot.com Bubble (Jan 2000 –July 2003)	Bull Market 1 (Aug 2003 –Jan 2007)	Global Financial Crisis (Feb 2007 – March 2011)	Post Crisis Recovery (April 2011 –Jan 2015)
	43 observations R^2 (%)	42 observations R^2 (%)	50 observations R^2 (%)	46 observations R^2 (%)
Developed markets				
Australia	14.41	8.45	15.43	7.75
Hong Kong	7.54	7.72	8.04	13.20
Japan	19.35	17.59	15.51	9.00
New Zealand	-	-	-	23.78
Singapore	8.27	16.66	10.25	13.76
Mean	12.39	12.60	12.31	13.50
Emerging markets				
China	20.56	9.68	25.52	14.34
India	35.40	28.05	31.60	14.59
Indonesia	35.38	38.97	31.60	14.98
South Korea	61.81	50.07	43.82	35.14
Malaysia	-	-	-	33.59
Philippines	-	-	-	12.06
Thailand	36.85	24.80	1.89	15.93
Taiwan	27.69	17.58	17.56	21.47
Mean	36.28	28.19	25.33	20.26

Note: Firm by firm time series regressions of DL measure are estimated using Equation (3) with a 5% level of significance

DISCUSSION

This study shows commonality in liquidity for ADR in the Asia Pacific region, hence, the hypothesis is supported. At the firm level, individual ADR liquidity is affected by the market liquidity of all other ADR that is issued from the same country. In particular, liquidity co-movement across individual ADR is higher for the emerging market issuer compared with the developed market. This suggests that if the liquidity of ADR is treated as a risk factor, then liquidity of ADR from the emerging market is more difficult to diversify, which in turn results in higher compensation for investors to accept this risk. This also highlights the important implications for investors in constructing their portfolio choice. They may need to consider choosing ADR from developed markets to be within their portfolio if they want to hedge from higher risks. In addition, we highlight that '*there*' is more important than '*here*,' or that investors should pay attention to the host market's or the US market's liquidity impact rather than the home shares' market liquidity.

Thus, investors should construct their portfolio choice as suggested by the result from the country level commonality. Since the liquidity ADR of one country in the Asia Pacific is not affected by market liquidity co-movement of other Asia-Pacific countries, they may choose to construct their portfolio by including ADR from all market in their portfolio. In addition, the developed market ADR is preferable due to their liquidity risk.

At the regional level, the lead coefficients of the ADR's developed market have a negative impact on the emerging market's ADR liquidity. One plausible explanation is that it might be a sign of investors' response to shocks while investing in ADR. It is suggested that investors who decided to invest in the emerging market ADR are influenced by the decision to invest in the developed market ADR or the contemporaneous coefficients (*t*). This decision is further influenced by the lead coefficients (*t+1*), which induce a negative impact on the liquidity of ADR in the emerging market. The negative and significant price impact would influence investors' decision to hold their assets (emerging markets' ADR) and reconsider their position to migrate into the ADR of the developed market. For investors, this may be a leverage factor when considering ADR of emerging markets as part of their portfolios. Information on the home country performance would be an important factor for investors. Other explanation is the type of investors in the US market (Kamara, Lou, & Sadka, 2008) or the existence of institutional or foreign investors (Karolyi, Lee, & Van Dijk, 2012). Future research should look into what causes this phenomenon as well as other impacts of ADR's liquidity. This study has also highlighted the impact of crisis on commonality in liquidity of ADR for both emerging and developed markets. While previous studies (Hameed, Kang, & Viswanathan, 2010; Karolyi, Lee, & Van Dijk, 2012; Naes, Skjeltorp, & Odegaard, 2011) found that commonality in liquidity increases in periods of high market volatility and during times of large market declines, this study showed for the developed market's ADR, commonality in liquidity tended to be stable, while for emerging markets, it tended to decrease during crisis. This difference may be attributed to the behaviour of institutional investors and shifts in investor sentiment. High investor sentiment in the US market will result in lower commonality in liquidity of ADR listed there (Karolyi, Lee, & Van Dijk, 2012). However, has to be evaluated further as it is beyond the scope of this research.

CONCLUSION

This study has looked at the extent to which the liquidity of Asia Pacific's ADR co-moves with other ADRs in the same market. It showed a significantly higher commonality in liquidity of emerging markets' ADR. Thus, individual ADR liquidity is affected by the liquidity of the host market (the US market) rather than by the liquidity of the home shares market. The finding was consistent with those of earlier in which liquidity commonality at the firm level is positively related to the level of market development and affected by the crisis period, although at the country level the evidence is slightly weaker. These findings boost the idea that ADR could serve as an important channel through which liquidity is transmitted across border. International cross-listing was proven to affect the liquidity co-movement between ADR and the home markets as well as between ADR and their host market. These results are of interest to both investors and regulators of Asia-Pacific countries. For investors, understanding how ADR reacts to market liquidity will help them to make decisions regarding liquidity exposure and improve trading strategies. For regulators, prevention of crisis due to liquidity shocks is also important. However, this study only focused on the liquidity property at the mean level, while future study is encouraged to elaborate further on the liquidity measurement at various levels. In addition, results of the commonality in liquidity at the regional level was supported by previous studies (Karolyi, Lee, & Van Dijk, 2012; Min & Qin, 2015) which assumed that emerging markets will be affected by developed markets. The complete profile of directions of commonality can be assessed by testing the reverse relationship, which is strongly suggested for future study. The pricing mechanism of ADR liquidity should also be investigated further by developing the liquidity asset pricing model (LCAPM) as proposed in Acharya and Pedersen (2005); Lee (2011).

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Capital Structure: New Evidence across the Broad Spectrum of State-Owned Enterprises Performance in Indonesia

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ABSTRACT

According to the theory of capital structure, excessive debt financing can result in default risk or bankruptcy, and liquidation. This study is an attempt to identify the impact of debt ratio on the performance of State-Owned Enterprises (SOEs). In order to achieve this, it surveyed 140 Indonesian SOEs and categorised them as healthy, less healthy and unhealthy based on their Return on Asset (ROA), Debt-to-asset (DA), Asset-to-Utility (AU) and Current Asset ratio (CR). With regards to specific financial indicators that can be utilised to differentiate the company based on their categorisation, ANOVA and discriminant analysis were employed. The results show that healthy companies (67%) tend to use debt financing more conservatively than the less healthy (22%) and unhealthy ones (11%). Additionally, less healthy companies were considerably more aggressive in utilising debt financing.

Keywords: ANOVA, capital structure, default risk, discriminant analysis, state owned enterprises

INTRODUCTION

Contemporary capital structure theory states amount of capital invested in a company can determine its success (Harris & Raviv, 1991). The management usually require a threshold or cut-off that determines its tolerance limits for capital structure policies. However, financial theorists still face difficulty in determining the ideal capital structure due to the differences in the company's financial policies (Zhang, 2008) which in turn are based on its company's size, characteristics, different sources of debts, level of debt risk, and amount of debt. Previous studies show companies generally have a high number of either obligation

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or debt (Faulkender & Petersen, 2006; Pinglé, 1997; Whitetaker, 1999; Zhengwei, 2013). This circumstances can often result in liquidation or even bankruptcy among unhealthy companies.

The capital structures of Stated-Owned Enterprises (SOEs) have not been extensively studied (Dumitra & Andrei, 2014; Pinglé, 1997; Whitetaker, 1999; Zhengwei, 2013). The burgeoning number of studies in this field in the past two decades has partially satisfied that deficit, although the topic is still in its infancy. Hereby, a supply-side theory suggests that availability of external capital is necessarily important in corporate financing decisions. Faulkender and Petersen (2006) reveal that having a credit rating is positively associated with corporate leverage. They note that companies with credit rating can easily access the public debt market.

Identifying quantitative relationships regarding the effect of fundamental financial factors across a wide spectrum of SOEs would enhance our awareness of the importance of economy (Lioukas, Bourantas, & Papadakis, 1993). Studies on SOEs offer many policy recommendations based on selective experience and untested generalisations. Lioukas et al. (1993) argue that systematic attempts to measure the intensity of control and its relationship with determining its factors are scanty. Relationships assumed and, hence, policy prescriptions are seldom based on quantitative evidence.

Most of the literature on capital structure focuses on analysing stand-alone companies. Findings suggest determining the optimum capital structure of a group affiliation maybe difficult. Thereby, determining the effectiveness of capital structure in explaining the performance of SOEs is vital. Modigliani and Miller (1963) argue that optimal capital structure is supported by the existence of leverage. The value of leveraged firms in case of ceteris paribus circumstance equals unleveraged firms plus the value of debt tax shield (Zhengwei, 2013). On the other hand, the opposite of optimal capital structure comes from the assumption of information asymmetry. Here, company policies are actually driven by management discretion, in which asymmetrical information exists between manager and investors as the owner (Myers & Majluf, 1984). Utilising debt was no longer the first choice for the company. The management considers utilising internal funding first instead of external funding, followed by issuing equity to the public.

Majid, Sucherly and Kaltum (2016) use Altman Z-score model to examine the factors behind airlines facing bankruptcy in Indonesia. By employing financial ratios, namely working capital assets/total assets, retained earnings/total assets, earnings before interest and taxes/total assets, market value of equity/book value of total debt, and sales/total assets, they found a threshold level in identifying healthy and unhealthy companies in the aviation industry. They note that the companies which had Z-score above 2.90 are considered healthy while those below 1.20 are unhealthy. Moreover, companies that had Z-score between 1.20 and 2.90 were classified as grey area. They found that Merpati Nusantara Airlines, an Indonesian SOE, is an unhealthy company and had experienced financial distress due to a shortage of capital and ineffective financial management. In effect, the study concludes that Poor management and inability of Chief Financial Officer (CFO) in balancing the capital structure therefore can threaten a company's survivability.

The current study makes several important contributions to research on capital structure with respect to SOEs. First, it supports side theory in capital structure theory. Second, it contributes to empirical studies of SOEs in Indonesia. Third, this is the first paper that explores the classification of SOEs based on three categories in Indonesia, namely healthy, less healthy and unhealthy. This study suggests that microeconomic circumstance, namely fundamental information of financial ratios, are important to study Indonesian SOEs' performance.

This paper is organised as follows: Literature review in the first section discusses supporting theories and findings of major studies in developing the hypothesis. Research methodology is discussed in the second section, specifically data generation and statistical tool used in this study. Next, findings and discussion are presented while the final section summarises and concludes the paper.

LITERATURE REVIEW

Capital Structure in the Indonesian State-Owned Enterprises

Some financial thinkers assume that capital structure will contribute towards firm value while others state that it has nothing to do with firm value. Studies of capital structure which are based on market capitalism classify capital structure into two conditions, relevant and irrelevant (Jensen & Meckling, 1976; Kamaludin, Susena, & Usman, 2015; Modigliani & Miller, 1958, 1969; Ross, Westerfield, & Jordan, 2003). The view of relevant capital structure assumes that it has implications for the firm value. A contrarian view (that capital structure is irrelevant) states that it will have no impact toward firm value. These two views have been criticised by academicians or practitioners in the area of finance.

The subsequent development of capital structure theory in financial studies is commonly based on the capitalism relationships and agency framework. It has attracted the attention of many researchers to investigate more about this. Some findings also show a close relationship between business and politics. For example, in Malaysia, the close relationship between business and politics has been discussed and criticised by Faccio (2006); Gomez (2002); Gomez and Jomo (1998). Their studies reveal that political endorsement has a significant influence on the company, particularly on public listing restrictions, direct equity ownership, and controlling activity. Kamaludin (2010) reported the same among Indonesian companies. He noted that most of the companies that have political supports in Indonesia had more aggressive capital structure strategy, and even their activities are mostly funded by debt. Fraser, Zhang and Derashid (2005); Johnson and Milton (2003) explained that most e Malaysian companies which had received strong political support ended up with more debts.

Some companies that have aggressive capital structure had faced the financial distress or even bankruptcy (Kamaludin et al., 2015). High debt leads to high financial risks as a result of poor financial management, with the company facing bankruptcy (Kamaludin & Pribadi, 2011; Kamaludin et al., 2015; Svendsen, 2003; Wiggins, Piontek, & Metrock, 2014). In the long term, high debt ratio will lead to companies experiencing financial distress due to their inability to fulfil their financial obligations (Whitetaker, 1999). In the banking industry, poor financial management tends to result in an increase in non-performing loans (Kamaludin, Darmansyah, & Usman, 2015). Whitetaker further reports that economic downturns tend to worsen the situation leading to liquidation and bankruptcy.

In order to asses financial condition of companies, several financial indicators are employed, namely return on assets (ROA), debt-to-equity ratio (DER), debt-to-assets (DA), assets-to-utility (AU), and current ratio (CR). These are indicators of the company's health - healthy, less healthy, or unhealthy. In reviewing the performance of China's SOEs and family owned-firms from 1999 to 2004, Ding, Zhang and Zhang (2008) utilised specific financial information such as return on asset, revenue per unit of cost, market-to-book ratio, total asset, age, admin sales and market sales. Their study revealed that family owned-firms achieved better performance compared with SOEs. Therefore, family owned-firms tend to perform better in terms of operating efficiency and profitability.

Furthermore, signalling theory emphasises on the importance of information released by the companies as an essential information for prospective investors (Brigham & Ehrhadt, 2005). Bhaird and Lucey (2010) pointed out that several fundamental information such as level of intangible activity, ownership structures, and the provision of collateral across industrial sectors as important determinants in explaining the capital structure in Irish small-medium enterprises. Nurazi, Kananlua and Usman (2015); Nurazi and Usman, (2015); Usman and Tandellilin (2014) report that the availability of information and the openness of companies regarding their current financial condition are essential. This will enable potential stakeholders to determine prospects of specific firms and market outlooks. Hence, information such as financial statements are important for prospective investors. This information relate to mandatory and voluntary disclosure documents, in which certain information like financial statement associated with the capital structure is mandatorily disclosed by firms (Nurazi, Usman, & Kananlua, 2016). Different information received by the market will lead to a different reaction to investment decisions by prospective or even investors (Connelly, Certo, Ireland, & Reutzel, 2011). Dumitra and Andrei (2014); Delen, Kuzey and Uyar (2013) report indicators such as stock prices, beta (β), ROE, ROI, and DER can be utilised as predictors in order to differentiate between healthy and unhealthy companies. Therefore, the following hypotheses are proposed.

Hypothesis 1: ROA, CR, DER, DA, and AU are able to distinguish companies based on their categorisation of healthy, less healthy, or unhealthy.

Hypothesis 2: There is a difference in capital structure of companies classified as healthy, less healthy, and unhealthy.

METHODS

This is a quantitative study which aims to assess the SOEs performance based on their health status. The indicators are ROE, ROA, CR, DA, DER, and AU. Data was obtained from financial statements of 140 SOEs, accessed through the official website of Stated-Owned Enterprises Republic of Indonesia (http://www.bumn.go.id/). The duration of study was between 2008 to 2013 as can be seen in Table 1.

Table 1
Group of SOEs population starting from 2008 to 2013

No	Industrial Sectors	Number of Companies	Proportion of Population (%)
1	Plantation	14	10
2	Forestry	5	3.57
3	Fishery	2	1.43
4	Supporting agriculture	3	2.14
5	Fertiliser	1	0.71
6	Irrigation service	2	1.43
7	Mining	4	2.86
8	Energy	5	3.57
9	Cement industry	3	2.14
10	Defence industry	4	2.86
11	Steel, manufacturing, engineering, design	4	2.86
12	Dock and shipping	3	2.14
13	Miscellaneous	5	3.57
14	Paper, printing, and publishing	5	3.57
15	Pharmacy	3	2.14
16	Telecommunications and media	5	3.57
17	Electricity	1	0.71
18	Port	4	2.86
19	Airport	2	1.43
20	Land transportation, seas, river and air	9	6.43
21	Construction	9	6.43
22	Construction consultants	5	3.57
23	Region	5	3.57
24	Warehousing	2	1.43
25	Banking	4	2.86
26	Insurance	10	7.14
27	Financing	6	4.29
28	Commerce	2	1.43
29	Certification	3	2.14
30	Hospitality and tourism	3	2.14
31	Others	7	5
Total Stated-Owned Enterprises		140	100

Source: Ministry of Stated-Owned Enterprises of Republic of Indonesia (2008-2013)

The population of this study is all SOEs in the period of observation. Secondary data was used to analyse the outcome of this study. Data was obtained from archives and financial statements of SOEs from the Ministry of Stated-Owned Enterprises of Republic Indonesia.

The approach employed in this research are discriminant analysis and analysis of variance (ANOVA). As noted by Pardoe, Yin and Cook (2007), discriminant analysis is utilised in order to categorise data based values (codes) of a nominal dependent variable with two or more aspects. In reality, just in cases where the nominal dependent variables and independent variables are quantitative, the discriminant analysis should be utilised to predict the changes in the dependent variables (Dastoori & Mansouri, 2013). Dependent variables, also known as predictive variables, this study were combined to form new variables and a discriminant score. The new variable from that process is called the discriminant function, which is calculated based on the the dependent criterion of variables. Descriptive statistical analysis was used to describe characteristics of data. Data can be described through the mean, maximum, minimum and standard deviation value.

Mathematical terms, X1, X2,..., Xn, are supposed to be independent variables and Z is a multi-level (categorical) dependent variable. Therefore, in this study, discriminant analysis attempts to determine a linear function as follows:

$$Zi = \beta\alpha X_0 + \beta 1X_1 + \beta 2X_2 + \beta 3X_3 + \beta 4X_4 .... + \beta nX_n \quad (1)$$

$$P\ (Z =_z \big|\ (X1, X2, X3, X4....Xn) = (x1, x2, x3, x4....xn) \quad (2)$$

The dependent variable consists of n levels or groups are aimed to attribute the new observations (X1, X2, X3, X4…, Xn) to one of these groups based on Z (the discriminant function). Beta coefficient (β) representing the share of each variable in the scoring function is chosen in a way that the resulting Z score from the above functions, to discriminate optimally between the groups. Additionally, the value of Zi is calculated in a way that the intervals between means (centroids) are at the maximum level in the two groups (Dastoori & Mansouri, 2013).

In order to describe the current condition of SOEs in Indonesia, several types of fundamental financial information are used. As pointed by Zhengwei (2013), the capital structure can be measured by either book value or market value. The analysis in this paper is restricted to ROA, CR, DER, DA, and AU as can be seen in Table 2.

Table 2
Definition of variables

Variable	Description of Variable	Formula
ROA	The calculation of Return on Assets (ROA) is used to analyse a company's ability to generate profits from its assets.	ROA= $\frac{\text{Net Profit}}{\text{Average Total Asset)}}$
CR	Current Ratio (CR) is one of the liquidity ratios to measure a company's ability to pay its short-term and long-term obligations. To gauge this ability, the current ratio considers the total assets of a company (both liquid and illiquid assets) relative to its total liabilities.	CR= $\frac{\text{Curent Asset}}{\text{Current Liabilities)}}$
DER	Debt-to-Equity (DER) is a debt ratio employed to measure a company's financial leverage. This ratio is calculated by dividing a company's total liabilities by its stockholders' equity. Debt-to-equity ratio indicates how much debt is utilised to finance a company's assets relative to the amount of value as represented in shareholders' equity.	DER= $\frac{\text{Total Liabilities}}{\text{Total Shareholders Equity)}}$
DA	Debt-to-Asset (DA) is one of debt ratios used to measure a company's financial leverage. It indicates the proportion of a company's assets that are being financed with debt, rather than equity. The ratio is also used to determine the financial risk of a business.	Total Debt to Total Asset = (Short-term Debt + Long-term Debt) / Total Asset
AU	Asset-to-Utility (AU) is a financial ratio that determines a company's ability to cover its debt obligations with its assets after all liabilities have been satisfied.	((Current value of total physical and monetary assets, excluding intangibles) - (Total current liabilities, excluding short-term liabilities)) / Total amount of outstanding corporate debt

Source: Brigham and Ehrhadt (2005); Kamaludin et al. (2015); Kamaludin and Indriani (2012); Ross et al. (2003)

RESULTS AND DISCUSSION

The Profile of State-Owned Enterprises in Indonesia

The performance of State Owned Enterprises (SOEs) fluctuates and some do not survive as a result of bankruptcy while some non-performing ones are merged. SOEs in similar industry groups are also experiencing highly frequent changes in terms of its capital structure compositions. It is commonly triggered by external factors including the macroeconomics and dynamism of industrial environment happening among the SOEs. Figure 1 is a profile of SOEs in Indonesia.

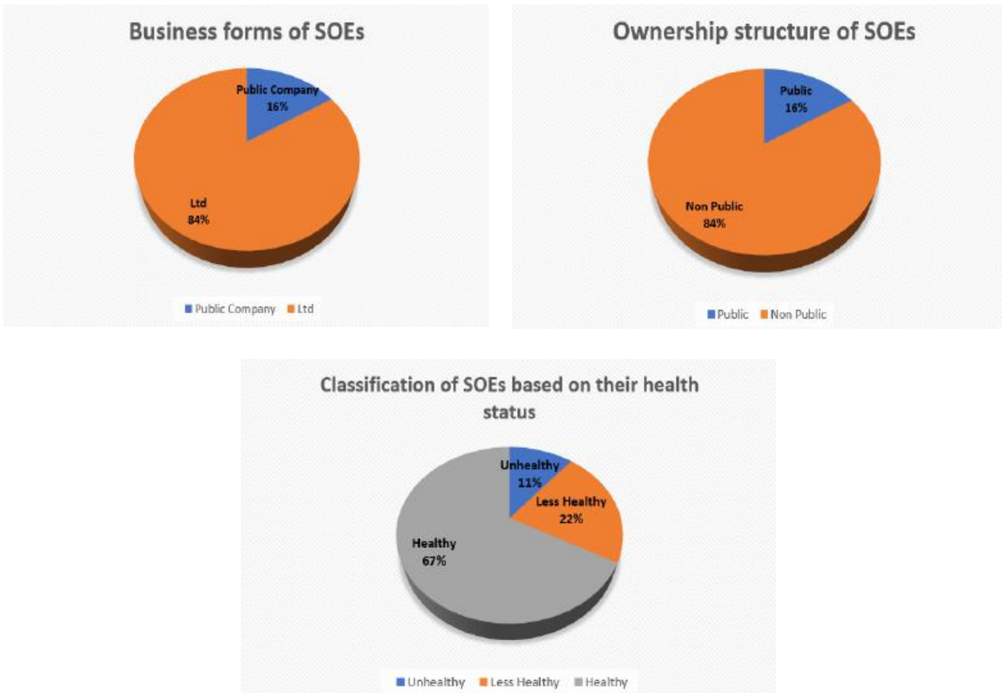

Figure 1. Categorisation of Indonesian SOEs from 2008 to 2013

Majority of the state-owned enterprises (84%) sampled are established as a limited liability company (Ltd) while the rest are a public company. In terms of specific ownership structure, the SOEs are predominantly owned by the government (84 percent) while the rest are owned by the public.

In 2013, there were approximately 140 SOEs in Indonesia. Not all of them were considered 'healthy'. According to data obtained, a healthy company is one which in the preceding year indicates a financial problem in the following year and turns into an unhealthy company. Dynamics within SOEs is a result of government policies, recent economic situations, and the growth of industries (Wicaksono, 2008). This is also triggered by the downturn in the global economy, in which the SOEs that are listed in Indonesian capital market were also affected by global economic instability between 2008 and 2009 (Usman, 2016). Moreover, in Indonesia, SOEs are divided into 30 industrial groups (see Table 1). Data within the period of observation shows that all the industries except the banking sector, irrigation services, ports, airports, construction consultants, department, warehousing, insurance, fertiliser, trade, and certification have considerably experienced some issues in their financial management system.

Figure 1 shows that 67 percent of total SOEs between 2008 and 2013 were classified as healthy companies. 22 percent less healthy and is the rest unhealthy. The less healthy and unhealthy companies are in sectors such as plantation, forestry, fishery, supporting agriculture, cement, defence, manufacturing, docks, miscellaneous industries, paper, printing and publishing, media and several other industrial sectors. See Table 3 on the characteristics of the sample SOEs.

Table 3
Summary statistic of SOEs in the consolidated data

	ROA	DA	CR	AU	DER
Mean	0.041	0.752	2.871	0.768	9.907
Maximum	1.774	33.531	102.586	14.927	4259.761
Minimum	-1.391	-1.087	0.000	-0.085	-82.547
Std. Dev.	0.136	1.287	7.004	0.851	151.777

Table 3 shows the mean, maximum, minimum and standard devaluation of consolidated data of 140 SOEs. It can be seen the mean of ROA (Return on Asset) is around 0.041 where the maximum value is 1.774 and its minimum value is -1.391. Moreover, the mean of DA (Debt-to-Asset) also has a positive value as 0.752 on average, followed by its maximum value as 33.531 and its minimum value as -1.087. The CR (Current Asset) also shows a positive mean as 2.871 on average followed by 102.586 as its maximum value and 0 as its minimum value. The AU (Asset-to-Utility) has a positive mean value, 0.768 on average. Its maximum value is 14.927 followed by minimum value at -0.085. The last variable is DER (Debt-to-Equity) which shows positive value, 0.907 on average. This is followed by a maximum value of 4259.761 and minimum value at -82.547. The correlation among variables is shown in Table 4.

Table 4
Correlation among variables in the consolidated data

Variables	ROA	DA	CR	AU
ROA	1			
DA	-0.238**	1		
CR	0.056	-0.080*	1	
AU	0.234*	0.117**	-0.085*	1

Note: ** (Statistically significant at the 5% level)
* (Statistically significant at the 1% level)

As can be seen, several variables show negative and positive correlation. Even though the magnitude of the correlation among variables is moderate, a lack of high correlation values does not ensure the absence of collinearity as the combined effect of two or more variables. In particular, ROA and DA have shown a negative and significant correlation as -0.238 ($p < 0.05$). The same trend is noticed in the correlation between DA and CR as -0.080 ($p < 0.01$) and are followed by negative correlation displayed by CR and AU as -0.085 ($p <$

0.01). The positive sign is first reflected by the correlation between ROA and AU as 0.234 ($p < 0.01$). Second, it is performed by the correlation of DA and AU as 0.117 ($p < 0.05$) followed by the correlation between ROA and CR as 0.056.

Capital Structure of SOEs in Indonesia

The SOEs usually have a high debt ratio utility. This study found that not companies in the unhealthy category suffer from high debt ratio. However, high debt ratio in the healthy company is only a temporary setback. On the other hand, unhealthy companies tend to experience great difficulty in getting out of a high debt ratio. This circumstance will continue due to company policy to fund the operational activity by adding new debts. In the long term, the financial condition will worsen the situation leading to the inability of the company to balance the benefit of equity in order to fulfil its obligation.

According to the output of analysis, it is known that there is a specific difference in terms of capital structure among healthy, less healthy and unhealthy SOEs. This paper argues healthy companies incline to use conservative strategy for its funding activity, while less healthy and unhealthy companies employ the aggressive strategy. The high debt ratio in the short-term results in financial distress. This situation was experienced by Sang Hyang Seri Ltd, Rajawali Nusantara Indonesia Ltd, Sugar Ltd, and Leces Ltd. Moreover, the high debt ratio in the long term can lead to bankruptcy as experienced by Merpati Airline Ltd. This study supports the traditional view of capital structure theory, which states that by continuously increasing the size of debt, the firm value will decrease. Further, the higher the debt ratio, the more difficult it would be for the financial manager to manage the trade-off between benefits and cost in the capital structure (Frank & Goyal, 2011; Myers, 2001; Pinglé, 1997).

Table 5
The differentiation of capital structure based on its category

Dependent Variable: DA		Multiple Comparisons			
	(I) SOEs_Healths	(J) SOEs_Healths	Mean Difference (I-J)	Std. Error	Sig.
Tukey HSD	Healthy	Less healthy	-0.291*	0.113	0.028
		Unhealthy	-1.404**	0.158	0.000
	Less healthy	Healthy	0.291*	0.113	0.028
		Unhealthy	-1.112**	0.181	0.000
	Unhealthy	Healthy	1.404**	0.158	0.000
		Less healthy	1.112**	0.181	0.000
Dunnett t (2-sided) a	Less healthy	Healthy	0.291*	0.113	0.020
	Unhealthy	Healthy	1.404**	0.158	0.000

The mean difference is significant at the 0.10 level *, 0.05 level ** and 0.01 level ***

Categories of SOEs are based on their performance; for example, the less healthy company is categorised as such due to its financial losses. The average current ratio of less healthy companies is 2.005 and its utility-to-assets is less than 1 (see Table 6), in which more than 80 percent of total asset is funded by debt financing activity. Meanwhile, unhealthy companies can be easily identified based on their losses for the consecutive years. This means the company has successively experienced negative equity, where the value of asset utility is less than 0.5 and current ratio performed the same financial indication with asset-to-utility. Table 6 contains descriptive data with respect to financial indicators of healthy, less healthy and unhealthy SOEs in Indonesia.

Table 6
Summary statistics of SOEs in Indonesia based on Three

SOEs_Health		Mean	Std. Deviation	Maximum	Minimum
Healthy	ROA	0.072	0.069	0.648	-0.087
	DA	0.589	0.531	8.576	0.000
	CR	3.333	7.338	102.586	3.998
	AU	0.825	0.905	14.927	0.000
Less healthy	ROA	-0.006	0.189	1.774	-0.439
	DA	0.881	0.601	3.761	0.012
	CR	2.005	6.838	79.863	0.004
	AU	0.667	0.683	3.590	-0.085
Unhealthy	ROA	-0.147	0.246	0.518	-1.391
	DA	2.025	3.955	33.531	0.001
	CR	0.376	0.385	1.541	0.020
	AU	0.453	0.499	2.261	-0.085

Table 6 shows summary statistics of companies based on their healthy classifications. In this study, the companies were classified based on the outcome of discriminant analysis. Data from 140 SOEs between 2008 and 2013 were analysed and from that, 94 SOEs (67%) were classified as healthy, 31 less healthy (22%) and 15 SOEs identified as unhealthy companies (11%). It is well known that healthy companies have low debt-to-asset (DA), and in this study, the lowest DA was 0.589 on average.

Discriminant Analysis

The output of discriminant analysis shows that not all variables are included. Not all the data of companies which showed negative equity and profits was included for analysis. Variable DER was also excluded in the discriminant analysis.

Moreover, the output of discriminant analysis in Table 7 illustrates that variable ROA, DA, CR, and AU are able to differentiate the companies as healthy, less healthy, and unhealthy. The DER however, is unable to distinguish healthy, less healthy and unhealthy companies. This model has classifications accuracy of 83.6 percent. Thus, the model can be used to classify SOEs. Moreover, the inability of DER to classify the company based on is due to its negative equity. Thereby, the variable DER is marked by a negative value. This results in a bias mean of DER.

Table 7
Discriminant analysis outputse

Step	Entered	Wilks' Lambda							
						Exact F			
		Statistic	df1	df2	df3	Statistic	df1	df2	Sig.
1	ROA	0.784	1	2	838.000	115.438	2	838.000	0.000***
2	DA	0.712	2	2	838.000	77.414	4	1.674	0.000***
3	AU	0.695	3	2	838.000	55.506	6	1.672	0.000***
4	CR	0.684	4	2	838.000	43.741	8	1.670	0.000***

Notes: F-values. *p < 0.10, **p < 0.05, ***p < 0.01.

The functions of discriminant Z_Score model are:

$$Z\_Score\_1 = 0.238 + 0.623_{ROA} - 0.413_{DA} + 0.035_{CR} + 0.294_{AU} \quad (3)$$

$$Z\_Score\_2 = 0.012 + 0.400_{ROA} + 0.635_{DA} - 0.017_{CR} - 0.379_{AU} \quad (4)$$

Z_Score_1 function is employed to classify SOEs as healthy or unhealthy, whereas the Z_Score_2 is utilised to classify SOEs as less healthy or unhealthy. The discriminant functions for each category are as follows:

$$Z\_Score\_Healthy = -1.712 - 0.037_{ROA} + 0.307_{DA} + 0.083_{CR} + 0.932_{AU} \quad (5)$$

$$Z\_Score\_Less\_Healthy = -2.412 - 0.968_{ROA} + 0.590_{DA} + 0.046_{CR} + 0.704_{AU} \quad (6)$$

$$Z\_Score\_Unhealthy = -3.323 - 0.949_{ROA} + 1.370_{DA} + 0.012_{CR} + 0.214_{AU} \quad (7)$$

The above equation shows that the negative constant of unhealthy (-3.323) companies is relatively larger than the constant of healthy (-1.712) and less healthy companies (-2.412). This means hypothesis 1 is supported, in which fundamental financial information such as ROA, CR, DA, and AU are able to distinguish companies based on their categorisation of healthy, less healthy, or unhealthy. Furthermore, hypothesis 2 is supported where there is a difference of capital structure for the companies classified in the healthy, less healthy, and unhealthy category. Additionally, there is a linear relationship among DA, CR, AU, and ROA. It means healthy companies tend to perform low DA and vice versa. In the case of SOEs in the category of healthy companies, it inclines towards higher liquidity and asset-to-utility.

Results of this study indicate long-term debt financing is negatively related to the ability of companies to manage their finances. The correlation results in Table 4 show debt-to-asset ratio (DA), as a debt measurement tool, is negatively associated with the current ratio (CR). Also, this condition is confirmed by the negative relationship between return on asset (ROA) and the debt-to-asset ratio (DA). On the other hand, the debt-to-asset ratio (DA) has positive correlation with the asset-to-utility ratio (AU). Thus, the study suggests effective financial management policies support company performance. Given that, most of the companies' policies increasingly employ the retained profits and debts for facilitating the future investment projects.

Based on panel data of Indonesian SOEs from 2008 to 2013, this study compared static and dynamic capital structures among SOEs in Indonesia in terms of 'health' status. It is imperative for Indonesian companies to improve their practice of good corporate governance (GCG) (Wicaksono, 2008). Wong (2004) showed that not only Indonesian SOEs are performing poorly (e.g., China, France, Singapore, the UK). Nurazi and Usman (2016) found that stated-owned banks performed slightly better than private ones in response to various fundamental and macroeconomic effect due to the support they receive from the government. However, Nurazi, Santi and Usman (2015) report that even though SOEs incline to have support from the government, but the SOEs itself have to be ready whenever the government needs financial support to strengthen the economic policies and economic expenditures made by the government. Therefore, we note that the lack of best practices and management of SOEs can be attributed to their three main challenges, namely objectives, agency issues and the transparency.

CONCLUSION

High debt ratio in the SOEs usually means an elevated risk of failure. This study found 33% of SOEs in Indonesia are less healthy and unhealthy characterised by their negative net income, debt funding more than 80 percent of the total equity, liquidity and the ratio of utility to assets which was less than 1. The SOEs categorised as unhealthy showed negative income and equity for the consecutive years based on their low value of liquidity and asset to liquidity (< 50 percent). Healthy company tended to, it was discovered, use debt financing more conservatively than less healthy and unhealthy companies. According to the results, less healthy companies were more aggressive in utilising debt financing. Therefore, ROA, DA, AU, and CR are able to measure the 'health' of a company.

There are several managerial implications regarding the best practices of financial management among SOEs. First, though optimal capital structure is a well-known concept in corporate finance, most Chief Financial Officers find it a challenge to determine the optimal capital structure for their company. Further, according to Zhengwei (2013), financial managers find it difficult to treat state-owned enterprises (SOEs) and private enterprises equally. In this case, the financial planner should have the ability to create a balanced capital structure, which is expected to bring a positive impact on decision making in the process of determining the optimum capital structure. Second, SOE dependency on government funding should be minimised in order to push the former to be more creative in managing their financial policies to improve their performance.

The study has its limitations. First, the problem of data availability that is disclosed to the public is limited to any empirical study on utilizing more firms-specific variables and investigating the comprehensive performance of SOEs. Second, this study did not classify whether the sample is listed in the capital market or not. Therefore, there is heterogeneity in terms of institutional, financial and legal environment among the SOEs. The last limitation concerns the methodology used in this study. By looking at a larger sample size over a longer period, future research will be able to observe how SOEs turn from healthy to unhealthy.

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Determinants of Dividend Policy and Capital Structure of State-Owned Companies and Non-State-Owned Companies

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ABSTRACT

The purpose of this study was to first analyse the effect of agency costs and investment on dividend policy of state-owned and non-state-owned companies and second, to examine the effect of agency costs, dividend policy and investment on the capital structure of these companies. A total of 40 companies divided equally between state-owned and 20 non state-owned companies, were surveyed The Partial Least Square was used to test the hypotheses. Results showed agency cost had an effect on dividend policy of non-state-owned companies. It did not have any effect on the capital structure of both types of companies. In terms of investment, agency cost did have an effect on the capital structure of both types of companies.

Keywords: Agency costs, capital structure, dividend policy, investment

INTRODUCTION

Capital is vital for companies to carry out their operational activities. Adequate funding is important to manage the needs of the company, and the amount of capital can be either beneficial or damaging to the company including state-owned companies (SOCs). The SOCs play a strategic role as the country's pillar along with privately owned companies in achieving sustainable economic growth. The SOCs are bound by government regulations and hence, their decisions must be strategic, especially in funding and spending. The SOCs also generate income for the state which contributes to the government's budget.

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Capital structure must allow the companies to remain competitive. Yet, unlike private companies, the SOCs have less flexibility in acquiring external funding as approval from government is required. Sources of funding are critical as it could affect the companies' future performance. The goal of capital structure is to create a permanent funding source with an optimal mix of debt and equity in order to maximise the value of the company.

The Indonesian SOCs have different capital structure that can be seen from their debt policy (Constitutional Court Decision No. 77/PUU-IX/2011 dated September 17, 2012). The SOC has separate wealth from the wealth of the state, so that the SOCs' debt settlement is subject to the Limited Liability Company Act No. 40 of 2007. The SOCs' debt is legally not a public sector debt. The government has substantial power in the management of SOCs. Compared with non-state-owned companies (Non-SOCs), SOCs' profit is only one-fourth of the latter. Lower profits mean lower dividends. This also translates into less financing for their business. As a consequence, the SOCs would not always be able to exploit competitive investment opportunities.

In addition to that, the SOCs face different agency problems. The top-level management of SOCs are not free from political interest. This has made them dependent on the interest of ruling parties. Most strategic decisions are not free from political intervention either.

Therefore, we see the difference in capital structure, agency costs, and management of investments between SOCs and Non-SOCs. Thus, the purpose of this study is to examine the determinants of capital structure between state-owned and non-state-owned companies listed in the Indonesian stock exchange. Results indicate that only non-state-owned companies have a dividend policy which is determined by agency cost. The capital structure is not affected by agency cost both for SOCs and Non-SOCs. Capital structure is affected by the investment opportunity both on the SOCs and Non-SOCs.

The next section of this paper discusses major works related to this topic and its hypotheses. This is followed by research methods and a discussion of the paper's findings. The last section summarises and concludes the paper.

LITERATURE REVIEW

The Effect of Agency Costs on Dividend Policy and Capital Structure

Agency problem arises when managers who have superior information act as an agent for the owner. This conflict allows the managers to exploit resources or take over other businesses (Miller & Breton, 2006). Financial decisions, investment decisions and the value of the company are strongly influenced by the conflict between the investors (shareholders) and the managers that leads to agency costs. Jensen (1986) argued that the agency costs emerge from the imbalance of interests of principals and managers of the company. The principals have to bear the costs to ascertain that the managers are acting in their best interest.

Agency problem arises between managers and shareholders. Heightening collateralisable assets will reduce the conflict between the shareholders enabling companies to pay substantial amount of dividends. Lower collateralisable assets will increase the conflict between shareholders of the company which in turn prevent payment of dividends. Wahyudi and Baidori (2008) revealed the higher the collateralisable assets, the higher the level of protection of creditors who receive their debt repayment. This will reduce agency cost between the shareholders and the debtholders. Thus, it can be said that there is a relationship between cost of agency and the dividend policy.

Deshmukh (2005) reported findings which are consistent with Jensen's Free Cash Flow Hypothesis, in which insider ownership negatively affects dividend payments. The higher the agency costs, the lower the dividend pay-out. Deshmukh found asymmetric information described as the opposite of equity issuance cost has a positive effect on dividend pay-out. The effect of asymmetric information on dividend policy is based on pecking order theory.

As the company investment scales increase, given the increase of its debt, it encourages shareholders to substitute assets by reducing dividend payments on retained earnings (Mao, 2003). Conversely, when the company faces over-investment conditions due to excessive free cash flow, retained earnings are used to increase dividend pay-outs. This reduces conflict between manager and shareholder when the problem of free cash flow arises. The company may do it by improving dividend payment mechanism (to shift risk).

Darrough and Stoughton (1986) explain that agency problems occur because of asymmetric information between owners and managers, namely when one party has information that is not owned by the other. This can trigger a moral hazard behaviour of managers. In addition, it would also increase the expenses related to investments (overinvestment) when free cash flow emerges. These expenses can reduce shareholder value. Chung, Firth and Kim (2005) found one of the implications of free cash flow agency problem is that the company's financial performance will deteriorate and may affect stock market valuation. To mitigate this agency problem, shareholders can restrict the activities of distorted agents through the provision of appropriate incentives, such as through increased ownership by management (Jensen & Meckling, 1976), and suggest the importance of funding through debt in addition to monitoring the activities that deviate from management. Debt financing has the potential to reduce agency conflicts, as management has an obligation to pay the principal loan and its interest. Therefore, the free cash flow of the companies can be used for debt repayment. Thus, the manager will use the debt optimally. Akhtar (2005); Lehn and Poulsen (1989) and use free cash flow proxies to measure agency costs, showing a positive influence on leverage. However, Myers (1984) discloses that the influence of asymmetric information tends to encourage pecking order behaviour so that firms that are profitable and face high agency costs tend to use retained earnings as the top priority of funding. This leads to a decrease in corporate leverage. Likewise, Deshmukh (2005); Jensen and Meckling (1976); Moh'd, Perry and Rimbey (1998); Panno (2003), Vera, Tobing and Ibad (2005) and argue that if agency costs are high, their debt ratio will decrease. Chen and Strange (2006); Jensen, Solberg and Zorn (1992), Moh'd et al. (1998) and show that the ownership of shares by management has a negative relationship with the use of debt. This means that agency costs are negatively related to the company's debt policy.

Based on the above, the following two hypotheses are proposed:

H_1 = Agency costs influences dividend policy of SOCs and Non-SOCs.

H_2 = Agency costs influences capital structure of SOCs and Non-SOCs.

The Effect of Dividend Policy on the Capital Structure

Dividend policy is influenced by (1) investment opportunities, (2) a mixture of capital structure, and (3) the availability of internal funds (Keown, Martin, Petty, & Scott, 2010). The policy also depends on the availability of profits within the company. Unlike in most western countries where dividend level is under the Chief Executive's hand, in Indonesia the amount of dividend is determined at the general meeting of shareholders. Thus, the agency cost inherent in the dividend decision is lowered in the case of Indonesia companies.

High use of leverage will cause the companies to reduce their dividend payment, because debtholders demand the management of the companies to satisfy them, instead of the shareholders. Thus, the dividend policy is negatively related with the companies' leverage. Other things held constant, the increase in the companies' debt level will be followed by the decrease in the companies' dividend and vice versa.

Dividend policy raises the issues concerning the use of profits with the rights of shareholders. Basically, the profits can be shared as dividends or retained to be reinvested. The dividend will reduce the company's net capital and to maintain an optimal capital structure, the company needs to issue lower securities risk, which is debt (Frank & Goyal, 2003).

Barclay, Smith and Watts (1998) argued that the determination of funding and dividend policy is inseparable from the company's free cash flow problem. Companies with high growth opportunities may experience difficulty in their free cash flow to pay dividends, because they do not use external sources. Retained earnings as a source of internal funding are mostly allocated to fund investment projects. Chen and Strange (2006); Jensen, Solberg and Zorn (1992); Ojah and Manrique (2005) provided empirical evidence that dividend policy negatively affects leverage. Their findings support the agency cost theory. High retained earnings are used to increase dividend payments and pay off corporate debt. Although it seems to be inconsistent with agency theory, Tong and Green (2005), on the other hand, showed evidence that dividend policy positively affects leverage. High retained earnings are used for dividend payments, while corporate investment is financed from debt. Another possibility is retained earnings is used for dividend payments, while debt is added to monitoring costs in an attempt to discipline the manager. The findings of Tong and Green (2005) are consistent with Deshmukh (2005); Gaver and Gaver (1993); Smith and Watt (1992) who revealed that dividend payments positively affect the companies' debt ratio. Large companies with high debt ratios will be able to pay higher dividends. A large dividend pay-out in the past will increase cash requirements and encourage greater lending. Conversely, the more profitable a company is, the greater the retained earnings portion to pay off the debt. So, the paid residual dividend becomes less. Thus, according to pecking order theory, there is a positive correlation between dividends with debt ratios (Bhaduri, 2002; Tong & Green, 2005).

Based on these arguments, the following hypothesis is proposed:

H_3 = dividend policy influences the capital structure of the state-owned companies and non-state-owned companies.

The Influence of Investment on Dividend Policy and Capital Structure

Companies with high growth opportunities would tend to require larger funding to finance growth in the future. Therefore, the companies will maintain their earnings to be reinvested in the companies and at the same time the companies are expected to continue to rely on funding through greater debt (Booth, Aivazian, demirguc-Kunt, & Maksimovic, 2001). Additionally, Loopies (2008) examines the effect of leverage on the investment company and concludes that the negative effect of leverage on investment will be much stronger for firms with low growth opportunities.

Brigham and Gapenski (1996) state that any change in the dividend pay-out policy will have two opposing effects. If the dividends are paid-off, the interests of the backup will be ignored. Conversely, if all of the earnings are withheld, the interests of shareholders for cash will be neglected. The dividend distribution is largely influenced by the behaviour of investors who prefer higher dividends, which leads to lowering of retained earnings.

High-growth companies require more funds for investment implementation. Based on the pecking order theory, funding needs are prioritised on internal fund sources such as retained earnings. Since most of the profits are allocated to the need for investment funds, the dividends pay-out is reduced. Barclay, Smith and Watts (1998) argued that the determination of funding and dividend policy is inseparable from the companies' free cash flow problems.

Companies with high growth opportunities are likely to experience difficult cash flow, thus facing difficulties to pay dividends, because companies do not access external funding sources. Retained earnings as a source of internal funding are mostly allocated to fund investment projects. It can be seen investment opportunities have a negative effect on dividend payments. The opinion of Barclay et al. (1998) is supported by empirical evidence of Pawlina and Renneboog (2005) who found that investment decisions negatively affect dividend pay-outs. Fama and French (2002) also found that non-paying dividend companies generally have larger investment projects.

Pecking order theory holds that debt generally increases when investment exceeds retained earnings, and vice versa (Fama & French, 2000). However, Myers (1984) argued that firms are more concerned with balancing current and future financing costs, so firms with high investment opportunities will keep their debt capacity low to avoid investing in riskier new shares emission. This balance of financing costs encourages companies with large investment opportunities to tend to have high debt ratios. Mao (2003) also revealed that the increase in investment scale will increase the volatility of the company's cash flow, and this will encourage shareholder risk-shifting to increase investment funding through debt as long as the debt risk remains lower than the risk of emission of new shares. It means that when the retained earnings are not sufficient, the scale of investment will increase the need for funds to be financed by debt. In other words, investment has a positive effect on the company's debt ratio. Mao (2003) explained that when the company increases its debt to finance its investment, the marginal volatility of investment will increase to the marginal cost point of the debt agency, equal to the marginal cost of the equity agency. This shows the leverage level of the company has a positive effect on the company's investment. Fama and French (2002) suggested that firms with large investments tend to have high debt ratios. However, Hennessy and Whited (2005) revealed otherwise.

Based on these descriptions, two hypotheses are formulated:

H_4 = Investment influences the dividend policy of SOCs and Non-SOCs.

H_5 = Investment influences the capital structure of SOCs and Non-SOCs.

METHODS

Sample and Data Sources

There are 20 SOCs and 20 Non-SOCs which met the selection criteria, such as the companies were engaged engaging in the pharmaceutical, energy, industrial metals, construction, banking, mining, cement, transportation and infrastructure, transportation and telecommunications. The research data in the form of financial statements were obtained by accessing Indonesia Stock Exchange official website from 2009 to 2013.

Measurement of Variable

Table 1 contains the summary of variable measurement used in the study. The study used Partial Least Square (PLS) with the application of Smart PLS.

Table 1
Measurement of variables

Variables	Indicator(s)	Measurement
Capital structure	Leverage (LEV)	Total debt divided by total assets
Investment	Profitability (PROF)	Profit before tax divided by total assets
	Growth	Total of present assets reduced total assets of the previous period and the next period divided by total assets.
	Size	Ln total assets
	Risk (ROA)	Net income / total assets
Agency costs	Asset Utilization Ratio (AUR)	Sales divided by total assets
	Free Cash Flow (FCF)	Net cash flow from operating activities minus purchases of fixed assets divided by total assets
	Dispersion Ownership (DO)	The percentage of shares held by an institution
	Concentrated Ownership (CO)	The percentage of shares owned by the public

RESULTS

Descriptive Statistics

Table 2 provides the summary of descriptive statistics of all variables examined in the study. It can be seen that only two variables are found to have significant differences between the SOCs and Non-SOCs, namely the ratio of sales over total assets (AUR) and the percentage of shares held by the institution (DO).

Table 2
Descriptive statistic of variables

Variables	SOC		NON-SOC		The mean difference
	Average	Standard Deviation	Average	Standard Deviation	
ROA	8.248	8.276	7.861	7.332	0.387
PROF	0.109	0.099	0.102	0.093	0.007
GROWTH	0.149	0.063	0.073	0.297	0.076
LEV	0.572	0.243	0.605	0.444	-0.033
SIZE	30.562	1.805	30.551	1.453	0.011
AUR	0.810	0.488	0.526	0.450	0.284*
DO	67.347	10.539	57.015	22.931	10.332*
CO	31.326	9.660	35.294	21.327	-3.968
DIV	25.076	18.954	20.348	21.078	4.728
FCF	0.060	0.056	0.004	0.224	0.056

*, **, *** denote significant level at 10%, 5%, 1%, respectively. Significance level was based on an independent sample t-test for mean difference
Note: SOC is State Owned Companies, ROA is Net income divided by total assets, PROF is profit before tax divided by total assets, GROWTH is total assets of the now reduced total assets of the previous period and the next period divided by total assets, LEV is total debt divided by total assets, Size is natural logarithm of total assets, AUR is sales divided by total assets, DO is the percentage of shares held by the institution, CO is the percentage of shares owned by the public, DIV is dividend policy, and FCF is net cash flow from operating activities minus purchases of fixed assets divided by total assets

Direct Effect

Table 3 contains the results of test on direct effect of the examined variables. The results can be described as follows.

1. The influence of the agency cost of the SOCs on the dividend is not significant (p=0.108). The opposite result is shown for Non-SOCs, where the proxy for agency cost proxy significantly affects dividend policy (p=0.003).
2. Agency costs of the SOCs do not have influence on the leverage (p=0.126). Similar result is noted for Non-SOCs.
3. Dividend policy does not have significant effect on the leverage of the SOCs (p=0.879). This means that proposed hypothesis is rejected. Similar evidence is also noted for Non- SOCs (p= 0.685).
4. The SOCs' investment has significant effect on the dividend policy (p=0.001). The opposite result is shown for Non-SOCs (p= 0.413).
5. The investment of the SOCs has significant influence on the leverage (p=0.000). Similar finding is reported for Non-SOCs.

Table 3
Test of direct effect

Relationship of Variables	*p*-Value of Direct Effect	
	State-owned companies	Non-state-owned companies
Agency cost → Dividend	0.108	0.003
Agency cost → Leverage	0.126	0.663
Dividend → Leverage	0.879	0.685
Investment → Dividend	0.001	0.413
Investment → Leverage	0.000	0.000

Indirect Effect

Table 4 shows the results of tests on the indirect effect of variables which can be summarised as follows:

1. The SOCs agency costs do not have significant effect on the leverage (p= 0.879). Similar finding is reported for Non-SOCs (p=0.674). This means that the hypothesis is rejected for both types of companies.
2. The investment level does not have significant effect on the leverage of the SOCs (p= 0.885) and also for Non-SOCs (p=0.834). This means that the hypothesis is rejected for both types of companies.

Table 4
Results of test on indirect effect

Relationship of Variables	*p*-Value of Indirect Effect	
	State-owned companies	Non-state-owned companies
Agency cost → Leverage	0.879	0.674
Investment → Leverage	0.885	0.834

DISCUSSION

According to the pecking order theory, high dividend payments will increase demand for cash and when the company's profit is not adequate to meet dividend pay-outs, the funds for payment of dividends would be earned from issuing debt. In order to finance this, and the cost of external monitoring, the company may increase the use of debt management. Thus, the findings of the agency theory assumption are applied only to Non-SOCs that to solve agency problems through debt instruments, preferred shareholders of a company that has a low dividend pay-out ratio can maximise the value of the company. These indicate the control mechanisms of the non-state-owned companies in Indonesia through the company's dividend policy would effectively lower debt agency conflict. There is also evidence that the dividend policy is a substitution for a policy of debt in the capital structure of corporate Non-SOCs.

It is also suggested that investment can leverage on SOCs and Non- SOCs. The two types of companies pay more attention to offset the cost of funding (financing costs) at the present and future so the companies with high investment opportunities will retain debt risks to remain low to avoid emission of new shares funded by more risky investments. The balance of the cost of this funding encourages companies with great investment opportunities to have high debt ratio. Mao (2003) revealed that the increase in the scale of investment will increase the company's cash flow volatility. This will encourage risk-shifting shareholders to increase investment funding through debt to make debt risk lower than the risk of new shares. This means that when the retained earnings as a source of internal financing is no longer sufficient, investment scale will increase the need for investment funds which will be financed by debt. In other words, there is a positive effect on the investment of the firm's debt ratio.

Additional analysis on whether the extent of dividend policy is different between the SOCs and Non-SOCs show that the former have significantly lower pay-out ratio compared with the latter (28.42 vs 40.29, $t=2.596$, $p<0.10$). Thus, there is lower profitability of SOCs compared with Non-SOCs. Findings also show that the level of SOCs' leverage is statistically higher compared with Non-SOCs (58.55 vs 47.83, $t=2.736$, $p<0.05$). Thus, SOCs on average have higher debt ratio than Non-SOCs. Comparing the extent of dividend pay-out ratio and the leverage of these two types of companies, it is clear that SOCs have higher leverage level and pay less dividend. Non-SOCs have lower leverage and pay more dividend. Thus, the Non-SOCs are less risky (as they have lower leverage) and are more profitable.

CONCLUSION

This study analyses the structural models of SOCs and Non-SOCs. It concludes that the agency costs only affect the Non-SOCs dividend policy, and do not affect the capital structure of both of the SOCs and Non-SOCs. Dividend policy does not have any effect on the capital structure of both types of companies. In addition, investments have an effect on dividend policy only on the SOCs. The amount of investments affects the level of capital structure both for SOCs and Non-SOCs. On average, SOCs have higher leverage level and lower dividend pay-out than Non-SOCs.

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Loan Growth, Inefficiency, and Credit Risk in Asia Pacific Banking Sector

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ABSTRACT

This study examines the effect of growth of public listed banks in Asia Pacific and their credit risks during 2005-2015. Using random effect estimation, evidence shows the effect of loan growth on credit increase in low middle- income countries during pre- and post-crises. This finding implies the possibility of *moral hazard hypothesis* in the banking sector. Furthermore, bank inefficiency contributes to the rise in credit risk, except in low middle-income countries. This supports *bad management hypothesis*, where the bank's inability to reduce their inefficiency worsens credit risk. There is significant impact of *loan loss provision* and exchange rate on increases in credit risk. In addition, credit risk is also affected significantly by gross domestic product (GDP) in high-income and high middle-income countries. It is recommended the government improves its economic performance to reduce non-performing loans (NPL). These results highlight the importance of a study risk management policy and an effective cost management system to evaluate banking performance.

Keywords: Asia Pacific Banks, credit risk, GDP, inefficiency, loan growth, NPL

INTRODUCTION

Theoretically, increases global investment in search for higher expected returns and lessens the risk by diversifying it internationally are among the important factors that enhance economic inter-connectedness in the globalization era (Agenor, 2003). However, the reciprocal

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relationship also increases the risk of spill-over effects, as witnessed during the global financial crisis of 2008.

The crisis saw a dramatic increase in *non-performing loans* (NPL) in the US banking sector caused by the debtors' inability to repay their loans due to low lending standards on mortgage loans. As a result, the world's GDP decreased by 57.28%: from 4.26% in 2007 to 1.82% in 2008. Furthermore, the situation worsened after the crisis in 2009 when the GDP growth was at its lowest (-1.74%) (www.worldbank.org).

After the crisis, the banking sector had a difficult task finding the determinants of credit risk, which would affect the country's financial stability. As suggested by Berger and DeYoung (1997); Hoose (2010), a *moral hazard hypothesis* is based on a possibility of debtors increasing their credit risks due to an *asymmetric-information problem*, thus, increasing NPL. Therefore, it suggests that credit growth has a sensitive relation with NPL. Keeton (1999) suggested that banks with excess credits tend to loosen lending standards, thus increasing the possibility of defaults or NPL. However, if banks want to loosen their lending standards to raise profits, there must be a positive relation between credit growth and NPL (Foos, Norden, & Weber, 2010). In contrast, the relation is negative if banks depend on NPL in the long term.

The *Basel Committee on Banking Supervision* (BCBS) via Basel Accord sets 8% as the minimum capital requirement in each bank in order to prevent credit defaults (BCBS). However, asymmetric *information* between banks and their creditors push banks to be more productive and efficient to prevent credit defaults. Berger and DeYoung (1997) proposed an *efficiency-risk hypothesis* to analyse three causes of credit risk due to banks' inefficiency. First, management's inability to evaluate and supervise bad loans, known as a *bad management hypothesis*. Second, unexpected events that lead to credit default, called a *bad luck hypothesis*. Third, when the bank's reduces resources used to monitor the collateral may deteriorating the loan quality, this hypothesis is called *skimping*. Using a dynamic panel GMM, Podpiera and Weill (2008) found proof of *bad management hypothesis* due to inefficiency, which increases NPL in the long run. Furthermore, Chaibi and Ftiti (2015) suggested that macroeconomics variables such as GDP growth, interest rate, unemployment rate, and exchange rate also affect NPL.

Many studies have examined how to reduce the effect of loan growth and inefficiency by evaluating factors that may affect its knowledge. However, none has done so by examining the country's GDP. Thus, this study aims to evaluate and analyse the impact of loan growth and inefficiency as well as specific and macroeconomic factors on credit risk.

The remainder of the paper is organised as follows: In Section 2, we present a brief review of literature. Section 3 describes data and methods used in the study while Section 4 analyses findings of this study. Section 5 summarises and concludes the paper.

LITERATURE REVIEW

The important question in managing NPL is "Why has the loan defaulted?" As proposed in earlier studies (Berger & DeYoung, 1997; Hoose, 2010), this issue is related to an *asymmetric information problem*. That is, as the bank does not have control over how the loan is used, it increases its loan portfolio risk, which is known as the *moral hazard hypothesis*.

As suggested by (Keeton, 1999), higher loan growth will increase credit risk by lowering their credit standard, which often happens when the objective is to boost profits. However, when banks have a prudent lending strategy, the relation between loan growth and credit risk is negative (Foos, Norden, & Weber, 2010).

Any shock to its financial system may be due to the bank's specific or macroeconomic factors. For example, the global financial crisis has always been associated with credit default, which affects a country's business cycle. Thus, the country's income has an impact on a non-performing loan (Ghosh, 2015). In addition, in a period of expansive economy, it is expected that debtors have the ability to repay their loans, but they have difficulties during recessions (Chaibi & Ftiti, 2015). Therefore, the first hypothesis is:

H1: Loan growth has a positive impact on credit risk in pre- and post-crisis periods. Four hypotheses relate to loan quality, cost efficiency, and bank capital (Berger & DeYoung, 1997). First, the *bad luck hypothesis*. When creditors cannot repay their loans, banks must bear more operational costs. This condition increases the bank's cost inefficiency. Second, the hypothesis related to inability of bank management to perform credit scoring, which causes bad portfolio management. This is known as *bad management hypothesis*. The third hypothesis has a trade-off between inefficiency and allocated sources used to oversee the loan (Louzis, Vouldis, & Metaxas, 2012). Chaibi and Ftiti (2015) found that inefficiency of banks in Germany and France contributes significantly to non-performing loans, which supports the *bad management hypothesis*.

Therefore, the following hypothesis is proposed:

H2: A bank's inefficiency has a positive impact on credit risk in pre- and post-crises periods.

Previous studies had investigated the effect of bank's specific and macroeconomic variables on non-performing loans as a measure of credit risk. For example, Ghosh (2015) found that credit quality as measured by capitalisation ratio, operational efficiency, diversification, and size of the industry influence credit risk in the US banking sector. This supports the *too big to fail* hypothesis.

Unlike previous studies which only considered the effect of loan growth on credit risk of banks in a single country or a group of countries, this paper examines a larger sample, namely banks in Asia Pacific in order to get more comprehensive picture.

In addition, this study also classifies the sample banks into three groups of countries: high income countries; upper high middle-income countries, and low middle-income countries (Dietrich & Wanzenried, 2014). Furthermore, this study also examines the effect of the pre and post global financial crisis of 2007/2008.

METHODS

In this study, panel data analyses were used to estimate the impact of loan growth and inefficiency, as well as some specific variables on credit risks of 152 banks in 10 countries in the Asia Pacific region during the period of 2005-2015. Data from each bank's annual report were retrieved from Thompson-Reuters Data stream database. First, the data was classified the data based on the country's economic status: high-income, upper middle-income, and low middle-income countries (Dietrich & Wanzenried, 2014). The impact before and after the global financial crisis of 2008 was also examined. The analysis was made using two types of estimation models. The first employs the full model, which estimates the impact using non-performing loans as a dependent variable during the global financial crisis period. This model is tested for all sample countries and based on each income classification with total of four estimations. In this model, a country's classification is presented as a dummy variable. The full model is written as follows:

$$NPLTA_{i,j,t} = \alpha + \beta_1 BCG_{i,j,t-1+} + \beta_2 INEF_{i,j,t-1} + \beta_3 BCON_{i,j,t-1} + \beta_4 MAC_{j,t-1} + \beta_5 DClass_i + \beta_6 DCrisis_{i,t} + \varepsilon_{i,j,t} \quad (1)$$

The second analysis is based on partial model estimation that divided the data into two periods: before and after the global financial crisis. This applies for all the classifications. The model is presented as follows:

$$NPLTA_{i,j,t} = \alpha + \beta_1 BCG_{i,j,t-1+} + \beta_2 INEF_{i,j,t-1} + \beta_3 BCON_{i,j,t-1} + \beta_4 MAC_{j,t-1} + \beta_5 DClass_i + \varepsilon_{i,j,t} \quad (2)$$

where:

$NPLTA_{i,j,t}$ = *Non-performing loans* of bank i in country *j* at period *t*

$BCG_{i,j,t-1}$ = loan growth of bank *i* in country *j* at t-1

$INEF_{i,j,t-1}$ = *inefficiency* of bank *i* in country *j* at t-1

$MAC_{j,t-1}$ = Macroeconomic variables of country *j* at t-1

$BCON_{i,j,t-1}$ = Bank's specific variable of bank *i* in country *j* at t-1

$DClass_i$ = *Dummy* variable for country classification

$DCrisis_{i,t}$ = *Dummy* variable for crisis period

$\varepsilon_{i,j,t}$ = Error term

To check the robustness of the model, in addition to NPL to total assets, the estimation using other measures of credit risk, NPL to total loans, was also done (Vithessonthi, 2006).

RESULTS AND DISCUSSION

Table 1 is a summary of the variables and their corresponding statistics of the bank's variables: mean, standard deviation, minimum, and maximum values. Data shows the average value of credit risk, which measured by NPL of all samples is 2.2% with standard deviation of 3.2%. In addition, the highest NPL is 6.61%, and the least mean value is 0.022%. The highest mean value is found in a bank in Australia, probably due to the weakening of the Australian dollar to the US dollar in 2015, thus affecting the quality of its assets. Meanwhile, the least mean value is 0.022%, found in an Indonesian bank, as the effect of a sharp increase in growth of the bank's operating profit by 21.8%, which consists of 269.7% growth of net interest margin in 2006. For bank inefficiency that is measured by the ratio of *bank operating expense to bank operating income*, the full sample mean is 67.1% with standard deviation from mean of 3.61%.

Table 1
Descriptive statistics

Variable	Mean	Standard Deviation	Maximum	Minimum
Non-performing loans	0.0217	0.0317	0.6606	0.0002
Loan growth	0.1215	0.4810	14.2645	-0.6479
Inefficiency	0.6708	0.3165	8.8610	0.0326
Size	17.0243	0.1.8460	21.9237	7.8075
Capitalisation ratio	0.0717	0.0401	0.7732	-0.2749
Income diversification	0.3385	0.1603	2.7004	-1.5567

Using a random effect model, results of the study based on the estimation results of the full sample after considering country classifications (Model 1) and periods before and after the global financial crisis (Model 2) are presented in Table 2, along with the coefficients of the explanatory variables and their corresponding p value.

The results of estimating Model 1 used *low middle income* as a base for country classification. The results show that loan growth has a negative but insignificant impact on credit risk. We find the same impact in Model 2, before the crisis period. These findings confirm that when loans are managed prudently, the credit risk is reduced

(Foos, Norden, & Weber, 2010). The results are the same when we estimate Model 2. However, although insignificant, a positive loan growth increased credit risk after the crisis. This implies that when banks Increase loan supply, they tend to lower interest rates and lending standards. This phenomenon shows that when lowering lending standard as an effort to increase a bank's profit, credit risk rises, which is consistent with the *moral hazard hypothesis*.

The results also show a positive but insignificant impact of inefficiency on credit risk after the crisis period, in Model 1 and Model 2, which indicates that lower cost efficiency causes higher credit risk, which is consistent with the *bad management hypothesis* (Berger & DeYoung, 1997). Furthermore, a reverse result was found when estimating Model 2 with full sample before the crisis. The result shows that although not significant, banks' inefficiency

Table 2
Estimation results

Dependent Variable	Non-Performing Loans					
Independent Variable	Model 1		Model 2			
	Random Effect Model		Random Effect Model			
	Coef.	Prob.	Coef. Before Crisis	Prob.	Coef. After Crisis	Prob.
Constant	0.0519***	0.005	0.0803***	0.000	0.0132	0.576
Loan growth	-0.0015	0.319	-0.0005	0.447	0.0012	0.784
Inefficiency	0.0012	0.765	-0.0002	0.951	0.0127**	0.016
Size	-0.0038***	0.000	-0.0034***	0.001	-0.0032***	0.009
Capitalisation ratio	-0.0257	0.452	-0.0545**	0.034	-0.0408	0.445
Income diversification	0.0075	0.272	-0.0051	0.468	0.0408***	0.000
Loan loss provision	0.0974***	0.003	0.4205***	0.001	-0.0482	0.241
GDP growth	-0.0191	0.505	-0.1449**	0.021	-0.0185	0.543
Real interest rate	0.0280	0.359	0.0331	0.417	0.0517	0.120
Unemployment rate	0.2896***	0.000	0.0621	0.549	0.5159***	0.000
Exchange rate	0.0276***	0.000	-0.0236***	0.004	0.0369***	0.000
Upper middle income	0.0261***	0.000	0.0321***	0.001	0.0279***	0.002
High income	0.0178***	0.001	0.0089	0.180	0.0155**	0.039
Crisis	0.0031	0.186				
R-squared						
- within	0.0501		0.0330		0.0695	
- between	0.0617		0.3119		0.0868	
- overall	0.0525		0.2831		0.0766	
Prob (chi2)	0.0000		0.0000		0.0000	
No. Observation	1672		456		1216	

has a negative impact on credit risk. This implies a trade-off between inefficiency and resource allocation that was used to hide the loan, which proved the *skimping hypothesis* (Louzis, Vouldis, & Metaxas, 2012). This implies that before the crisis, banks with less control over their loans are more cost efficient, but after the crisis they tend to lose sight of the loans, which increases default risks. Additionally, credit risk is significantly higher in low middle-income countries. These results imply that economic activities of a country represent its business cycle, which in turn affects credit risk (Ghosh, 2015).

However, in full sample estimation model, crisis increases credit risk but the effect is insignificant. This finding implies that bad credit acts as the inception of a crisis, a result consistent with Reinhart and Rogoff (2010). In terms of control variables, in estimating Model 1 and Model 2, we find that large banks have lower credit risk both in pre- and post-crises periods. This suggests that large banks have more diversified loans and better risk management; therefore, they can select the best debtors to serve (Zribi & Boujelbene, 2011). In addition, we found that after the crisis (Model 2), banks with higher income diversification face greater credit risk, probably due to an increasing portion of non-traditional activities (Ghosh, 2015). This implies that efforts to increase profit through diversification after the crisis turned out to slide it down. Consistent with Chaibi and Ftiti (2015), *loan loss provision,* which represents banks' buffer to bad loans, has significantly increased credit risk in Model 1 and before the crisis period (Model 2). This indicates that banks ensure high reserves to anticipate credit default in crises times. In terms of the macro-economic related variables, we find significant impact of exchange rate in full period sample and pre- and post-crises times. Although the influence is indirect, this indicates that appreciation of local currency may weaken competitive advantage of local products in the global market, therefore halting their ability to make their loan payments (Castro, 2013).

Based on country classifications, in high-income countries, when banks distributed more loans they became more prudent which reduced credit risk. In contrast, although insignificant, the more loans channelled to low middle-income countries, of the higher the credit risk. Furthermore, the impact is similar in upper middle-income countries in full sample period and after the crisis. Cost inefficiency has a significant credit rise risk in high- and upper middle-income countries, which support the existence of *bad management hypothesis* in the countries. This result is consistent with Berger and DeYoung (1997); Chaibi and Ftiti (2015). However, different results were found in low middle-income countries where the effect was negative and insignificant. This implies that banks were conscientious in giving loans, which resulted in lower credit risk (Foos, Norden, & Weber, 2010).

Regarding bank size, the larger the bank, the bigger its credit risk. However, the impact was significant only in high-income and upper middle-income countries. This phenomenon indicates that size decreases as a problem due to credit defaults in those countries. This result is consistent with Rajan and Dhal (2003) in the case of commercial banks in India. Furthermore, the opposite prevailed in upper middle-income countries before the crisis period, when larger banks tended to have higher credit risk, consistent with the assumption of *too big to fail* in banking industry (Rajan, 1994).

Capital ratio negatively and significantly affects credit risk in high-income countries, which supports *moral hazard hypothesis* (Berger & DeYoung, 1997). This finding is consistent with Klein (2013); Makri, Tsagkanos and Bellas (2014). Similar effects of income diversification on credit risks in all countries are noted, where the incremental proportion of non-interest income ends with an upsurge in credit risk. The diversification strategy to reduce credit risk works only in pre-crisis periods, except for banks in high-income countries and low middle-income countries where the effect is insignificant. The impact of *loan loss provision* on credit risk was similar to the impact when we estimated the full sample, where an increase in the reserve boosted credit risks (Chaibi & Ftiti, 2015). Among macroeconomic variables, real interest rate had a negative and significant impact on credit risk in high-income countries before crisis, and upper middle-income countries in full sample period and after the crisis. This result confirms (Vithessonthi, 2006) that banks tend to loosen their lending standard, thereby increasing their risks of non-performing loans. In addition, the effect was positive in the low middle-income countries after the crisis period. This implies that the debtors have difficulty repaying their loans with an increase in interest rate during the crisis period (Castro, 2013; Louzis, Vouldis, & Metaxas, 2012; Nkusu, 2011). Furthermore, variations were discovered with the impact of exchange rates on credit risk. For example, it significantly increased credit risks of banks in high-income countries in full sample period and after the crisis, and in low-income countries after the crisis. The positive impact indicates that appreciation of local currency weakens global competitiveness of export goods which makes loans difficult to pay.

In order to check the robustness of the model, we estimated all the models using different measures of credit risk: NPL to total loans. We find that all results are consistent with the model using non-performing loans to total assets as measures of credit risk. Thus, it can be concluded that the models are robust, since we can draw similar conclusion.

CONCLUSION

We investigated the effects of loan growth and inefficiency of banks in Asia Pacific countries. This paper extends the scope of previous studies by grouping the samples into (1) full bank sample, (2) banks in high-income countries, (3) banks in upper middle-income countries, and (4) banks in low middle-income countries. In addition, the model was estimated based on (1) full period, (2) pre-crisis period, and (3) post-crisis period. Furthermore, to check the robustness of the model, we employed an alternative measure of credit risk to draw a conclusion.

The results support the *moral hazard* hypothesis, where loan growth increases credit risk, measured by NPL. Furthermore, this study found evidence to support the *bad management* hypothesis where the banks' inefficiency caused NPL to increase, and the *skimping* hypothesis of banks in Asia-Pacific countries, especially after the crisis period when banks often lose their oversight on loan, thus, increasing their credit risk. Furthermore, when examining the impact of bank size, there is evidence to support the *too big to fail* hypothesis where larger banks tend to face higher credit risks.

Based on country classifications, findings showed banks in high-income countries were very prudent in managing their loans, thus reducing credit risk before and after the financial crisis. Meanwhile, there was no impact of loan growth on credit risk in upper middle- and low middle-income countries in the same periods. Furthermore, the banks' inefficiency had significant impact on credit risk after the financial crisis (2008), which implies that they need to better manage their cost related to loans. Similar result obtained in upper middle-income countries before and after the crisis 2008. However, the opposite result was seen for low middle-income countries for the same period.

In terms of regulation and policy implications, the findings of the study indicate a need for a risk management regulation to avoid an enormous effect of credit default, which would alter banking sector stability. In addition, since credit risk was affected significantly by GDP in high-income and high middle-income countries, it is recommended that the government improve its economic performance to reduce NPL.

The study has limitations which can be addressed in future research. First, this study does not separate banks from *bank-based economy* and *market-based economy*. Therefore, the findings are confined to only sample countries. Thus, further study may include other classifications to be able to draw a general conclusion of the similarity or differences of the findings. Second, this study considers only the effects of loan growth and inefficiency in pre- and post-crisis periods. It is suggested that further studies involve the effects of loan growth and inefficiency during a crisis period. Third, to check robustness of the model, this study used only a variation of NPL as a credit risk measure. Further study may use the lag of NPL to capture the impact of previous conditions.

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The Influence of Environmental, Social and Governance (ESG) on Investment Decisions: The Bangladesh Perspective

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ABSTRACT

This paper develops a research model based on the feedback of individual stock market investors in Bangladesh regarding Environmental, Social and Governance (ESG) issues. By applying Theory of Planned Behaviour (TPB) and the positivistic paradigm, this study contributes to the literature on ESG adapting the ESG dimensions from the United Nations Global Compact (UNGC) and Thomson Reuters Corporate Responsibility Index (TRCRI). Preliminary findings from Structural Equation Modelling (SEM) analysis indicates that ESG issues influence investment decisions, while governance issues provide the most remarkable influence on respondents' investment decisions, followed by social and environmental issues. The study has important theoretical contributions and vast practical implications for regulators, business organisations, and most importantly, for stock market investors from developing countries. This study indicates investors' preference for ESG and it may proceed towards the formulation of rules and regulations to improve ESG performance of companies, ESG reporting, and the ultimate introduction of ESG index in Bangladesh, which can ensure stable stock markets as well as overall sustainable growth of the country.

Keywords: Bangladesh, Environmental, Social and Governance (ESG), investment decision, Theory of Planned Behaviour (TPB)

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INTRODUCTION

Investment decisions based on Environmental, Social and Governance (ESG) issues among the stock market investors is gaining attention around the world. Investment that considers ESG issues has broadened its asset base from $3.74

trillion in 2012 to $6.57 trillion in 2014 with a 76% growth rate (The Forum for Sustainable and Responsible Investment [SIF], 2015). The ESG-based investing emphasises different nonfinancial dimensions, such as companies' environmental, social and governance practices into the investment decision-making processes of the stock market investors. The greater focus on ESG issues for social change is apparent from the post-Enron period and the Global Financial Crisis (GFC) that weakened the confidence of investors (Arjalies, 2010; Galbreath, 2013). Shareholders are becoming more concerned about ESG issues because socially irresponsible firms may face potential litigation costs or a loss of reputation and thus destroy long-term shareholder value. Investors can play an important role to safeguard their assets while contributing towards social change by investing in companies with good track records in ESG.

Integration of non-financial criteria, such as environmental, social, ethical, governance, in investment decisions has become a widespread phenomenon, especially in the developed countries (Berry & Junkus, 2013; Crifo, Forget, & Teyssier, 2015; Nakamura, 2013; Perez-Gladish, Benson, & Faff, 2012). In recent years, there have been many studies on this topic focusing on developing countries (Adam & Shauki, 2014; Brimble, 2011; Nair & Ladha, 2014). But, in the context of Bangladesh, research on ESG is relatively scarce.

Bangladesh, with GDP growth rate of 6.6% (World Bank, 2017), is predicted to be the 23rd largest economy in the world by 2050 according to Pricewaterhouse Coopers (PwC) (Islam, 2015). Stock markets in Bangladesh have attracted the attention of investors locally and abroad. Net foreign investment in stocks increased by 93% in 2015 (Chowdhury, 2016). In fact, USA and UK based multinational titans Morgan Stanley, JP Morgan, Goldman Sachs, and Black Rock are investing in the stock markets of Bangladesh (Chowdhury, 2014). Despite such tremendous growth, the country faces problems pertaining to ESG issues. The stock market investors of Bangladesh faced a stock market crash in 2010-2011, where more than 3.5 million investors lost their investments (Tahera, 2014). It was found that there were irregularities in valuations of shares, operating expenses, gross profit and agency commission, anomalies in the revenues and tax (Khaled, Chowdhury, Chowdhury, & Kabir, 2011), which relates to corporate governance issues. Furthermore, Sonali Bank's loan scandal involving US$460 million in 2012 (Sabet & Ishtiaque, 2013) adversely affected the confidence of stock market investors in Bangladesh. In the Environmental Performance Index [EPI] (2016), Bangladesh ranked 172th out of 180 countries for its environmental condition. This is an alarming indicator that illustrates the environmental degradation of the country. As Belal, Copper and Khan (2015) argue, Bangladesh is enjoying tremendous economic growth through its exports but it comes at a price where the natural environment faces degradation due to pollution. Therefore, it is important every community plays it role to protect the environment. In this regard, investors can also play a dominant role in protecting the environment by investing in companies that are concerned about environmental protection and at the same time secure their long-term investment returns. In addition, after the tragic collapse of Rana Plaza in 2013, which caused death of 1,129 people and injuring 2,515 others (Butler, 2013), different stakeholders have begun to ask relevant questions about health and safety issues of workers and employees and how they relate to social practices of the companies. Investors were more pressured after this collapse because they had to bear financial losses, mental agony for the demise of more than a thousand people and which also affected the lives and dreams of thousand more. At the same time, they were accused of seeking profits at the expense of social and community well-being. Therefore, ESG malpractices could affect the investors' sustainable returns which would force them to fulfil their ethical responsibilities.

A number of studies have examined the influence of non-financial criteria, such as ethical, religious, social, environmental and governance in investment decisions (Dorfleitner & Utz, 2014; Nair & Ladha, 2014). Still, little is known about the effect of behavioural factors including attitude, norms and perceptions on individual investors' investment decision making (Pellinen, Tormakangas, Uusitalo, & Munnukka, 2015). This is especially true as ESG cannot be treated separately (Fin, 2012). Renneboog, Ter Horst and Zhang (2008) state corporate responsibility towards the stakeholders is prized by the stock market but it is still an unexplored field of research. Due to divergent philosophies, institutions and cultural values between East and West, many researchers argue for the need of conducting research on ESG issues from different cultural contexts, especially from emerging countries like Bangladesh where there is mounting evidence of ESG malpractices (Diouf, Hebb, & Toure, 2014). The ESG consideration in investment decisions in Bangladesh has vast implications. As Brown (2014) asserts, a remarkably powerful long-term sustainable business model can be created in Bangladesh with sustainable and responsible investment. What is more, globally, there is increased awareness of the role of investors in ensuring good ethical, social and environmental outcomes when conducting business (Escrig-Olmedo, Munoz-Torres, & Fernandez-Izquierdo, 2013). Therefore, the present study aims to fill the gap in the ESG literature through evaluating the individual stock market investors' ESG consideration on investment decisions in Bangladesh.

LITERATURE REVIEW

Environmental, social and governance considerations are paramount for business and investment decision making, especially in the context of long term overall firm performance and risk evaluation (Derwall, 2007). Investors are becoming more concerned with the importance of ESG in achieving sustainable return from their investments (The International Federation of Accountants, 2012). According to Association for Sustainable & Responsible Investment in Asia, (The Association for Sustainable & Responsible Investment in Asia [ASrIA], 2015), sustainable investment assets grew by 22% per year since 2011 and the most commonly adopted sustainable investment strategy in Asia appears to be integration of ESG issues. Therefore, ESG concerns in stock market investment has become significant globally.

Environmental, Social and Governance (ESG) Issues

Environmental issues are subjects associated with the functioning and quality of the natural systems and environment. These include: greenhouse gas (GHG) emissions; waste management; climate changes; stratospheric ozone depletion; energy efficiency; renewable energy; air, water or resource pollution; biodiversity loss; changes to the nitrogen and phosphorus cycles; ocean acidification and changes in land use (United Nations Principles of Responsible Investment [UN PRI], 2015). Environmental issues have been ranked as one of the important aspects to be considered when making investment decisions. These were documented in several prior studies in Japan, India, France and Australia. For example, Nair and Ladha (2014) found that Indian investors voted environmental issues as the most influential element when considering non-economic goals in their investment decision. Nakamura (2013) also reported most of the shareholders in Japan are mainly concerned with the environmental policies of an organisation, which is similar to the findings of Zwaan, Brimble and Stewart (2015) in Australia regarding superannuation fund members' perception of ESG issues. According to Crifo et al. (2015), companies' irresponsible practices or policies regarding the environment reduce investment likelihood by 30.8% among private equity investors in France. In the context of Bangladesh, Belal et al. (2015) mentioned that negligent industrial behaviour contributes towards environmental pollution there. With the heightened awareness of investors around the world regarding environmental issues when making investment decisions, it is of interest to investigate the way investors in Bangladesh consider environmental issues in their investment decision making. This leads to the development of the first hypothesis of the study.

H1: Environmental issues influence investment decisions among stock market investors in Bangladesh.

Social issues are themes pertaining to the well-being, rights and interests of people and communities. These include workplace health and safety; labour standards in the supply chain; human rights; slave, child, and bonded labour; freedom of expression and freedom of association; diversity; employee relations and human capital management; health and access to medicine; relations with local communities; HIV/AIDS; activities in conflict zones; controversial weapons and consumer protection (UN PRI, 2015). Apart from environmental issues, social issues also influence investment decisions (Crifo et al., 2015). Social issues have been one of the dominant parts of ESG consideration by investors in the Australian superannuation fund (Zwaan et al., 2015). Perez-Gladish et al. (2012) found that social issues are preferred over environmental and governance issues in Australia. Among the highlights of social issues are community employee relations, worker and product safety and human rights (Berry & Junkus, 2013; Rakotomavo, 2011). Globally, there is an increasing trend among stock market investors to consider the social issues of companies, especially in developed countries (Zwaan et al., 2015). Therefore, to provide evidence from the developing countries' perspective, this study explores whether investors in Bangladesh consider social issues of companies in investment decision making. Therefore, this leads to the construction of the second hypothesis.

H2: Social issues influence investment decisions among stock market investors in Bangladesh.

Governance issues involve the governance of firms and other investee entities. These include executive pay; board structure, size, diversity, skills and independence; disclosure of information; shareholder rights; business ethics; stakeholder interaction; internal controls and risk management; bribery and corruption; and, in general, issues relating to the relationship between a company's management and other stakeholders (UN PRI, 2015). Corporate governance is an important indicator of investors' economic rationality and they consider corporate governance practice of the companies when making investment decisions (Crifo et al., 2015). Giannetti and Simonov (2006) emphasise that investors restrain themselves from investing in companies that are weak in terms of corporate governance. Zwaan et al. (2015) find that corporate governance is preferred by 64% of the respondents while making their investment decisions. Perez-Gladish et al. (2012) conclude that although socially responsible investors have special consideration for social issues, they are also concerned about their financial returns, which indicates their preference for governance issues of the company. Corporate governance scandals of Enron and Tyco, among others, accelerated the demand for better corporate governance of companies and investors are getting more concerned with incorporating governance issues in their investment decisions. When factoring the importance of governance issues in investor investment decision making around the world to safeguard their investment as well as recent issues on corporate governance in Bangladesh, the third hypothesis of the present study is proposed.

H3: Governance issues influence investment decisions among stock market investors in Bangladesh.

Investment Horizon

Investment horizon refers to the short (less than 1 year), medium (1 to 5 years) or long term (more than 5 years) investment strategy of investors to indicate the target time frame of an investment (Dorfleitner & Utz, 2014). Investment horizon of socially responsible investors significantly affects the percentage of socially responsible investment (SRI) in their portfolio and investor willingness to sacrifice the return from SRI funds, which affects their overall investment decision (Dorfleitner & Utz, 2014). Perez-Gladish et al. (2012) noted that in Australia, if the return is good, the long-term investors are ready to accept a short-term fall in their investment. Non-financial practices (environmental, social and governance) of companies affect the investment values in the long-time horizon (Fin, 2012) and the attention towards these issues depends on the investment horizon of the investors (Sorensen & Pfeifer, 2011). Ironically, socially responsible investment is partly unable to be a driver of social and environmental change because of the poor matches between short term shareholder value and long-term SRI values (Wagemans, van Koppen, & Mol, 2013). To evaluate overall long-term firm performance and risk, ESG issues are intensely important in investment decision making (Derwall, 2007). Therefore, investment horizon plays a significant role in this regard. Using investment horizon as a moderator can be an important addition in the ESG literature and thus, the fourth hypothesis is developed.

H4: Investment horizon moderates the relationship between ESG issues and investment decision.

Investment Decision

Investors invest in stocks mainly for future higher returns. Hirt and Block (1999) define investment as a commitment of the current funds to produce larger future flow of funds. Jagongo and Mutswenje (2014) explain that investors usually conduct fundamental analysis, technical analysis and judgment as tools for investment analysis. Therefore, investment decision is an outcome of investment analysis and involves considering different factors that the investor find essential. As long as ESG investing is concerned, it takes into account the divergent nonfinancial qualitative dimensions (environmental, social and governance) of the firms in investment portfolios (Sairally, 2015). The present research explores the ESG investment decision that is related to the investors' intention to invest in the companies with vigorous environmental, social and governance practices.

METHODS

Theoretical Underpinning

The current study uses Theory of Planned Behaviour (TPB) of Isec Ajzen in that human 'intention' depends on 'attitude toward behaviour', 'subjective norm' and 'perceived behavioural control'; and 'intention' ultimately leads to 'actual behaviour' Ajzen (1985). Two components from TPB, *'attitude'* and '*intention*', are adopted to explain the theoretical model of the present study. To operationalise TPB, the study considers the '*attitudes*' of the stock market investors about ESG issues and ultimately focuses on the '*intention'* towards ESG investing by considering investment decisions. Fishbein and Ajzen (1975) define attitude as an underlying variable which guides or influences behaviour. Investors' attitude is important in making investment decision (Alleyne & Broome, 2011). Intention signifies a person's subjective probability that he or she will perform some behaviour (Fishbein & Ajzen, 1975). Attitude among other constructs can foretell investment decision (East, 1993). Gopi and Ramayah (2007) point out that among the Malaysian investors, attitude has a notable positive relationship towards behavioural intention. Partial adoption of TPB can be noticed from the study of Yang and Jolly (2009) where they examined the effects of consumer perceived value and subjective norm on the adoption of mobile data. In addition, Warsame and Ireri (2016) revealed that attitude has noteworthy impact on behavioural intention among the Islamic bonds investors in Qatar. Jafarkarimi, Saadatdoost, Sim, & Hee (2016) provide additional evidence on the influence of attitude on intention in a study that identifies the salient factors impacting individuals' ethical decision making in social networking sites (SNSs). Attitude toward green products and environmental concern among individuals are the main determinants of purchase intention of green products (Yadav & Pathak, 2016). Hence, TPB is successfully used either wholly or partially by various researchers in diverse fields but there is a significant gap in understanding stock market investor attitude and intention towards ESG investing by using TPB. Furthermore, the theoretical framework is enhanced by injecting the idea of investment horizon in ascertaining the investment decision of Bangladeshi investors. Figure 1 shows the theoretical framework of the study.

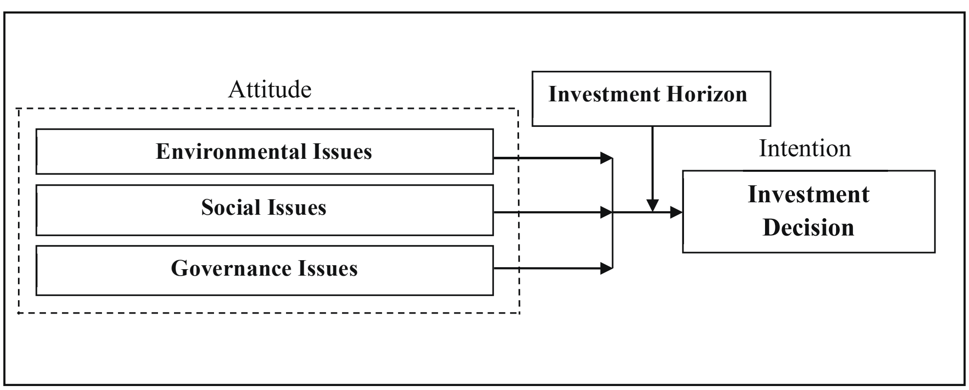

Figure 1. Theoretical framework of the study

Research Paradigm and Method

To gain comprehensive insight into the objectives of the study, a questionnaire survey with individual investors of the stock markets of Bangladesh (Dhaka Stock Exchange, DSE and Chittagong Stock Exchange, CSE) is conducted (Wilson & McLean, 1994). The present study uses the positivist paradigm because this approach to accounting research seeks mainly to reveal law-like regularities that are testable and falsifiable by empirical data sets (Lukka, 2010). Positivism is an epistemological position that describes the goal of knowledge is to describe phenomena that we encounter (Wahyuni, 2012). Positivism in general refers to philosophical positions that emphasise empirical data and scientific methods. Subsequently, this study uses scientific methods to test the hypotheses which are quantitative in manner for the rational explanation of the problem raised in the study.

Research Instrument

The questionnaire contains closed ended questions because this type of question results in a higher response rate and data that are easy to code and analyse (Rowley, 2014). Seven-point Likert scale (ranging from 'strongly disagree' to 'strongly agree') is used and the format is helpful where respondents are asked for accurate mapping of neutral, moderate or extreme attitudes (Krosnick & Presser, 2010). This study uses the dimensions of ESG adapted from UNGC (2004) and from TRCRI (2013) to find out what factors are considered by stock market investors in Bangladesh in relation to ESG issues and practices. UNGC (2004) is considered for the study because United Nations is an internationally recognised body. Moreover, there are 53 participants in the UNGC (2004) from Bangladesh (Bangladesh Investment Climate Statement, 2015). Furthermore, TRCRI (2013) is considered to be recent as well as highly accepted for scoring the companies' ESG practices. More than 4,600 public companies worldwide have already used this index for ESG ratings and rankings (Thomson Reuters, 2015). To measure the investment decision of the investors, percentage of ESG investment in the portfolio is evaluated with one item ordinal scale, taking on from Dorfleitner and Utz (2014); Nilsson (2008); Perez-Gladish et al. (2012).

Preliminary Survey

The questionnaire is first tested with a group of respondents to eliminate errors in content or design (Saunders, Lwis, & Thornhill, 2012) as well as to find out whether the questions are easy and straightforward (Rowley, 2014). Dorfleitner and Utz (2014); Zwaan et al. (2015) initially tested their questionnaire to attain validity and reliability. The preliminary study is conducted among the individual stock market investors and academicians in Bangladesh. In total, 65 questionnaires were distributed among the individual stock market investors and the academicians from Accounting and Finance departments of two eminent universities in Bangladesh. In one-month time, 34 responses were collected. The objective to involve the academicians (Aspara & Tikkanen, 2010) in the preliminary survey was to attain face validity of the questionnaire because ESG research is relatively new in the context of Bangladesh. The demographic background of the respondents is shown in Table 1.

Table 1
Demographic profile of the respondents

Items	Characteristics	Response (%)
Gender	Male	94.10
	Female	5.90
Age	Less or equal 20 years	-
	21 to 30 years	2.90
	31 to 40 years	38.20
	41 to 50 years	44.10
	Above 50 years	14.70
Experience	Less than 5 years	28.10
	5 to 10 years	43.80
	More than 10 years	28.10
Education	Below Secondary School Certificate (S.S.C)	-
	Secondary School Certificate (S.S.C)	-
	Higher Secondary School Certificate (H.S.C)	-
	Bachelor's degree	8.80
	Master's degree	32.40
	PhD	41.20
	Professional Degree	17.60

RESULTS AND ANALYSIS

To analyse data, Structural Equation Modelling (SEM) involving Partial Least Squares (PLS) is used with Warp PLS Version 5.0. In this section, the data from the preliminary survey is analysed as the final survey data is yet to be fully collected, involving a sample size of 384 (Krejcie & Morgan, 1970) with simple random sampling of individual stock market investors from Bangladesh. Kock (2014) states that Warp PLS Version 5.0 is a software for SEM to present PLS algorithms along with factor-based PLS algorithms. Hair, Black, Babin, & Anderson (2010a, p. 643) state that, minimum sample size should be 34 or 35 for SEM. This study runs the software with 34 observations, which also supports the five times per variable requirement of minimum sample size calculation (Hair et al., 2010a, p. 102) excluding the moderating variable. Moderating variable impact is not depicted here due to the small size of observations, which may lead to unreliable analysis if included. Table 2 shows the descriptive analysis: mean minimum, maximum and standard deviation (SD) of the independent variables. In addition, response percentages of the dependent and moderating variables are depicted in Table 3.

Table 2
Descriptive analysis of research indicators (Independent variables)

Independent Variable: Environmental Issues *(E)*		Mean	Min	Max	SD
Items	I wish to invest in the companies that care about:				
E1	The risk of climate changing issues like global warming, greenhouse effect etc.	6.47	5	7	.71
E2	Proper waste management of harmful wastes from the production process.	6.59	4	7	.66
E3	Optimum use of materials, energy or water, and to find more environment-friendly solutions like solar power.	6.56	5	7	.61
E4	Reducing harmful gases (carbon dioxide and chlorofluorocarbons) from the production process.	6.44	4	7	0.96
E5	Producing environment-friendly and durable products.	6.29	3	7	.91
E6	Creating new market opportunities through new environmental technologies and processes.	6.09	4	7	.93
E7	The pressure from civil society to improve performance, transparency and accountability on environmental practices.	5.94	3	7	1.01
Independent Variable: Social Issues *(S)*		Mean	Min	Max	SD
Items	I wish to invest in the companies that care about:				
S1	Workplace health and safety of the employees and workers.	6.59	5	7	.61
S2	Providing higher employment benefits.	6.35	5	7	.65
S3	Main¬taining good relation with the government and general community (local, national and global) by donating cash, goods etc.	5.68	3	7	1.12
S4	Respecting the fundamental human rights conventions (not using child, forced or compulsory labour etc.).	6.47	5	7	.62
S5	Developing the employees' skills, competencies, employability and careers by arranging training and education.	6.29	4	7	.76
S6	Increasing employee loyalty and productivity (by promoting an effective life-work balance, a family friendly environment and equal opportunities regardless of gender, age, ethnicity or religion).	6.29	4	7	.80
S7	Producing quality goods and services considering the customers' health and safety, and providing accurate product information and labelling.	6.38	5	7	.74
S8	The pressure from civil society to improve performance, transparency and accountability on social practices.	5.85	2	7	1.08
Independent Variable: Governance Issues (G)		Mean	Min	Max	SD
Items	I wish to invest in the companies that care about:				
G1	The independence and accountability of board of directors.	6.53	5	7	.62
G2	Setting up an effective board with allocated duties and responsibilities.	6.44	5	7	.71

Table 2 *(continue)*

Independent Variable: Governance Issues (G)		Mean	Min	Max	SD
G3	Financial reporting requirements.	6.44	5	7	.75
G4	Audit committee structure and its functions.	6.38	5	7	.65
G5	Independence of auditors.	6.76	6	7	.43
G6	Attracting and retaining executives with the necessary skills by linking their compensation to individual and/or company-wide financial or extra-financial targets.	6.06	4	7	.81
G7	Taking necessary actions to control corruption and bribery issues in the organisation.	6.65	5	7	.65
G8	Ensuring equal rights and privileges of the shareholders including minority shareholders.	6.65	6	7	.49
G9	Creating and communicating an appropriate vision and strategy into its day-to-day decision-making processes.	6.21	5	7	.73

Table 3
Descriptive analysis of research indicators (Dependent and moderating variables)

Dependent Variable: Investment decision *(Invest)*	Response (%)
The percentage of investment I want to make in the companies that have a comprehensive strategy and practice towards ESG issues and practices is:	
0%	-
1-20%	2.90
21-40%	8.80
41-60%	17.60
61-80%	29.40
81-100%.	41.20
Moderating Variable: Investment Horizon	Response (%)
In which investment horizon you actually invest in the stocks?	
Short term (Less than 1 year)	17.60
Mid-term (1 to 5 years)	52.90
Long term (More than 5 years)	29.40

Reliability and Validity Tests

Cronbach's Alpha, Average Variance Extracted (AVE), Indicator Loadings and Composite Reliability (CR) are important measures to access the reliability and validity of the constructs (Hair, Black, Babin, & Anderson, 2010b). Table 4 shows all these measures of the constructs. In addition, Full Collinearity VIF is also indicated to know whether the constructs have multicollinearity or not.

Table 4
Reliability, validity and multicollinearity test results

Constructs	Items	Factor Loading (FL)	Composite Reliability (CR)	Cronbach's Alpha	Average Variance Extracted (AVE)	Full Collinearity VIF
Environmental Issues (E)	E1	0.888	0.87	0.82	0.50	2.44
	E2	0.677				
	E3	0.235				
	E4	0.800				
	E5	0.680				
	E6	0.715				
	E7	0.785				
Social Issues (S)	S1	0.701	0.86	0.81	0.44	2.48
	S2	0.527				
	S3	0.445				
	S4	0.776				
	S5	0.658				
	S6	0.788				
	S7	0.663				
	S8	0.667				
Governance Issues (G)	G1	0.874	0.89	0.86	0.49	3.04
	G2	0.741				
	G3	0.635				
	G4	0.761				
	G5	0.455				
	G6	0.743				
	G7	0.728				
	G8	0.539				
	G9	0.747				
Investment Decision (Invest)	Invest	1.00	1.00	1.00	1.00	1.43

Convergent Validity

Table 4 shows the factor loading of most of the items are above the minimum acceptance range of 0.50 (Hair, Black, Babin, & Anderson, 2009). Item E3, S3 and G5 have factor loadings below 0.50. However, according to Hair, Hult, Ringle and Sarstedt (2016, p.113) items with weak factor loading can be retained in some cases as benefaction to content validity.

Discriminant Validity

Average Variance Extracted (AVE) should be greater than 0.50 to attain discriminant validity (Hair et al., 2016, p. 115). In this study, Environmental issues fulfils the stipulated value (AVE: 0.50), while Governance issues (AVE: 0.49) and Social Issues (AVE: 0.44) have slightly lower AVE. The small sample size used in this study may have resulted in lower AVE. Hair et al. (2010a) highlight the sensitivity of SEM to sample size, whereby, a small sample size might affect the reflective indicators' average error variance. Therefore, the results from the final study might show stronger discriminant validity due to sample size.

Reliability

Composite Reliability (CR) and Cronbach's Alpha of all scales of the study are above 0.80, which indicates that the scales are sufficiently reliable (Fornell & Larcker, 1981; Nunnally, 1978).

The CR, Cronbach's Alpha and AVE of 'Investment decision' shows 1.00 as the dependent variable being measured by a one item ordinal scale. Full Collinearity VIF values for all constructs are less than 3.3, which indicate there is no multicollinearity in the model (Kock, 2015).

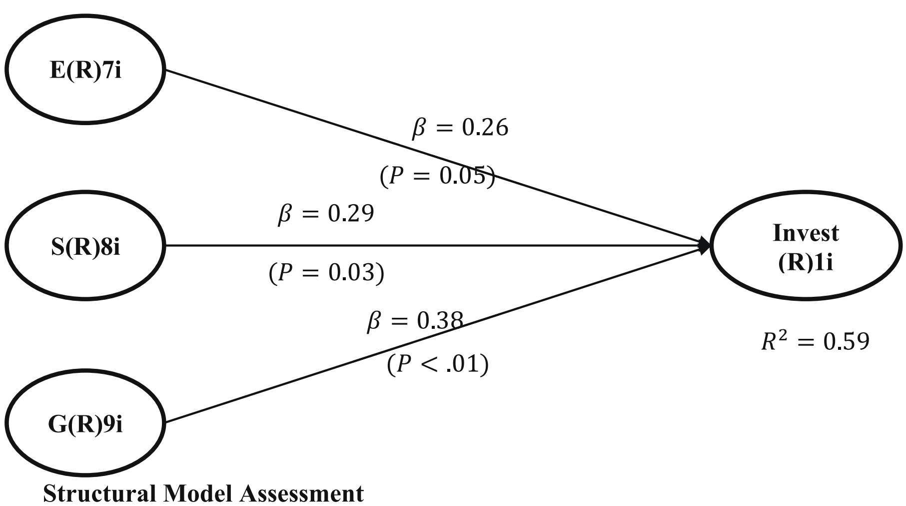

Figure 2. Summary of the research model

Figure 2 shows the causal relationships among independent and dependent variables of the study. Path coefficient (β) describes the hypothesised relationship among the variables. P value assesses the significance level and coefficient of determination (R^2 value) is the measure of the research model's predictive power (Hair et al., 2016). Figure 2 also shows Hypothesis 2 and Hypothesis 3 are supported with P values less than 0.05, meaning Social and Governance issues have significant influence on the investment decision of the stock market investors in Bangladesh. Hypothesis 1 has P value of 0.048 or 0.05 which also means Environmental Issues have an effect on investment decisions. From the path coefficient results, it can be stated that Governance issues has the most significant effect on investment decision (β=0.38), Social issues also affect investment decisions (β=0.29) and interestingly Environmental issues also impact on investment decisions (β=0.26). The R^2 value (0.59) of the model shows this model moderately (Hair et al., 2016) explains the effect of ESG on investment decisions among Bangladeshi investors.

Evaluation of Model Fit and Quality Indices

The Average path coefficient (APC) of the research model is 0.309, P=0.011; Average R-squared (ARS) is 0.593, P<0.001 and Average adjusted R-squared (AARS) is 0.552, P<0.001.

The required fit of PLS-SEM model (Kock, 2015), the model fit and quality indices of the present study model are listed below in Table 5, which indicates acceptability of the model considering the thresholds.

Table 5
Model fit and quality indices

Model Fit Indices	Recommendation	Sources
Average block VIF (AVIF)=1.586	Acceptable if <= 5, ideally <= 3.3	Kock (2015)
Average full collinearity VIF (AFVIF)=2.349	Acceptable if <= 5, ideally <= 3.3	Kock (2015)
Tenenhaus GoF (GoF)=0.601	Small >= 0.1, Medium >= 0.25, Large >= 0.36	Wetzels, Odekerken-Schroder and van Oppen (2009)
Sympson's paradox ratio (SPR)=1.000	Acceptable if >= 0.7, ideally = 1	Kock (2015)
R-squared contribution ratio (RSCR)=1.000	Acceptable if >= 0.9, ideally = 1	Kock (2015)
Statistical suppression ratio (SSR)=1.000	Acceptable if >= 0.7	Kock (2015)
Nonlinear bivariate causality direction ratio (NLBCDR)=1.000	Acceptable if >= 0.7	Kock (2015)

DISCUSSION

Despite the small sample size, the study highlights the concerns for ESG issues on investment decisions. Preference of the respondents towards governance issues indicates their economic rationality to secure their investment return. This finding is consistent with that of Crifo et al. (2015) who looked at investors in France. Inclination towards Social and Environmental issues relate to accountability towards the environment and the society as well as ensuring their sustainable financial returns. Although among ESG aspects, relatively less concern for Environmental issues found in the present study contrasts with the findings of Nakamura (2013). Nakamura

(2013) conducts a study on the investors in Japan which establishes that environmental issues are most influential factor while considering corporate social responsibilities of the companies in the investment decision. In terms of social issues, results of this study are consistent with the findings of Zwaan et al. (2015) where they state that social issues are considered by the superannuation fund investors of Australia. In this study, 'Attitude' has notable effect on 'Intention' with R^2 value of 0.59.

Future research can test the variable 'Investment Horizon'. A larger sample size may enable the findings to be generalised.

CONCLUSION

This study contributes to the ESG literature such as the effect of 'ESG attitude' on 'ESG intention' of Theory of Planned Behaviour (TPB). Methodological contribution of the study is the adaption of the measurement scales from UNGC (2004) and TRCRI (2013) that are rarely used in previous studies on ESG and represent the ESG dimensions from internationally recognised bodies. The study also contributes to ESG literature through proposing investment horizon as a moderating variable. Furthermore, investors' preference for ESG might pave the way in the formulation of rules and regulations to improve ESG performance and ESG reporting and the ultimate introduction of the ESG index in Bangladesh. This is hoped to attract more Foreign Direct Investment (FDI) and foreign stock investors. Therefore, the integrated ESG aspects in investment decisions can contribute to stable stock markets as well as overall sustainable growth of the country with similar cultural settings.

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Environmental Degradation, Trade Openness, and Economic Growth in Southeast Asian Countries

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ABSTRACT

The trade-off between economic growth and environmental quality has long been debated. The aim of this study was to find out if the hypothesis of the Environmental Kuznets Curve (EKC) in five Southeast Asian countries - Indonesia, Malaysia, the Philippines, Singapore, and Thailand – is supported. This study analysed the effect of GDP per-capita and the ratio of trade openness on CO_2 emissions. Using annual data from 1975 to 2014, this study employed the Error Correction Model (ECM) to test the EKC hypothesis for each country and applied the fixed effect panel data model to test the EKC hypothesis for all countries. The results showed that in the long run, the inverted U of the EKC hypothesis was supported in Singapore, without any turning point in Indonesia and in the Philippines, but no evidence was found for Malaysia and Thailand. Except for Singapore, trade liberalisation had positive effect on CO_2 emissions. The results of panel data analysis indicated that, in general, the inverted U of the EKC hypothesis was supported in Southeast Asian countries, while trade liberalisation positively affected the increase of CO_2 emissions.

Keywords: CO_2 emission, economic growth, environmental degradation, error correction model, EKC hypothesis, panel data, trade openness

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INTRODUCTION

Economic growth is the focus of many developing countries but it also leads to negative externalities such as environmental degradation. Todaro (2000) points out that this condition may be a result of exploitation and depletion of the natural resources. For example, economic openness of economic stimulates the economic transformation from agriculture to industry and is suspected to be the cause of the environmental degradation (Huang & Labys, 2002). Moreover, industrialisation tends to increase the CO_2 emission as the use of energy increases (Ekbom & Dahlberg, 2008).

Several developing countries in Southeast Asia whose national development depend on the existence of their natural resources placeless attention on the environmental sustainability issues. The link between trade openness and economic growth in Southeast Asian Countries during 1980 – 2014 is shown in Figure 1.

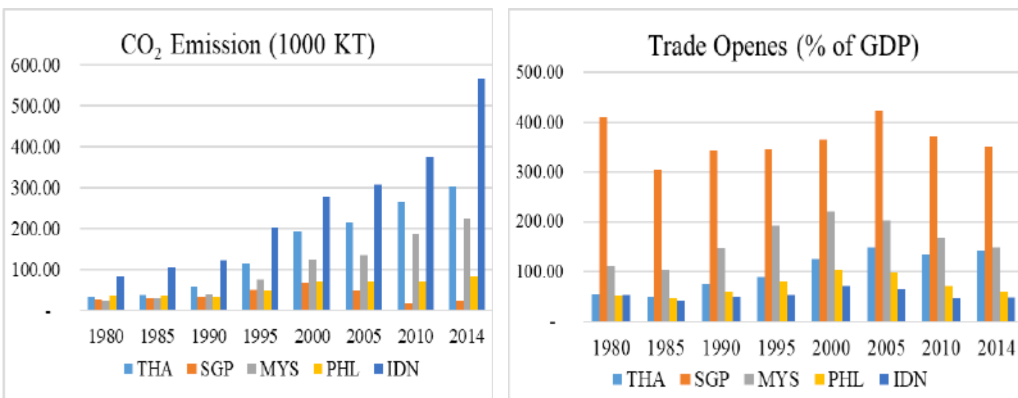

Figure 1. CO_2 Emissions and trade openness in five Southeast Asian countries 1980-2014
Note: THA = Thailand; SGP = Singapore; MYS = Malaysia; PHIL = the Philippines; IDN = Indonesia
Source: World Bank (2016)

The relationship between rate of economic growth and environmental degradation can be explained using Environmental Kuznets Curve hypothesis. This hypothesis explains that when a country's income remains relatively low, the attention of the government will be focused on how to increase the national income through economic growth. The long-run interaction between economic growth and environmental quality resembles an inverted U-curve (Grossman & Krueger, 1991), and this phenomenon is called Environmental Kuznets Curve -EKC.

In the developing countries, economic growth which leads an increase in population often ignores the environmental quality issues. Meanwhile, in the developed countries, the awareness of environment quality has increased as their income has improved in which the environmental degradation and the environmental pollution will be compensated. The demand of the people on environmental quality that could be improved by improving social supervision and government regulation aims to achieve the prosperity of the people (Mason & Swanson, 2003).

Empirically, the trade-off between economic growth and environmental degradation has become academic issues. Researchers have analysed the relationship between environmental quality, economic growth, and liberalisation policies. Given this situation, Huang and Labys (2002) identify the argument focusing on two interrelated issues. The first is following the Kyoto Protocol Agenda of the trend in increasing carbon emission. In the future, one of the most important challenges for environmental policies is the effort to reduce CO_2 emission; it has been realized that formulating the relationship between CO_2 emission and economic growth for the benefit of the public policy is crucial. The second is the trade openness to accelerate the economic growth; yet, increase the pollution level. The international trade as a consequence of globalisation is characterised by economy growth; however, environmental pollution will also potentially increase.

This study examines the influence of growth and trade openness on the environmental quality in Southeast Asian countries by employing the error correction model (ECM), and using panel data regression. Data from 1975 to 2014 of five South East Asian countries, including Indonesia, Malaysia, Singapore, Thailand, and the Philippines was obtained and analysed.

LITERATURE REVIEW

Environmental Degradation and Income

The Environmental Kuznets Curve (EKC) due to its resemblance to Kuznets curve, which is an inverted U-shape curve, can be utilised to describe the relationship between inequality of income and economic growth (Huang & Labys, 2002; Panayotou, 2005). In pre-industrial development stage, as many countries experienced a low level of income per capita, the environment tended to be well preserved (Everett, Ishawaran, Ansaloni, & Rubin, 2010). The EKC describes the degradation of an environment as an inverted U-shape function to explain income per capita (Huang & Labys, 2002). In pre-industrial development stage, as many countries experienced a low level of income per capita, environment tended to be well preserved (Everett et al., 2010). However, the reverse happens when income per capita increases following the development of economic activities.

This situation could be explained using EKC hypothesis of Copeland and Taylor (2004) covering three important issues. First, the increase of negative impact on the environment in developing countries in line with pollution haven hypothesis, while the pollution haven hypothesis is only one of the evidences that affect trade and the environment. Second, revenue increase has a positive impact on the environment through changes in the economic structure. Third, national income grows in tandem with environmental awareness which is driven by stringent environmental regulations and replacement of environmentally unfriendly technologies with clean and friendly ones.

These three important issues can be explained using the inverted U-shape curve of Panayotou (1993) as described below. First, foreign investment flows lead to structural transformation from agriculture to manufacturing. Second, rising income leads to demand for better environmental quality. In developing countries, low level of income per capita poses challenges for the government to protect the environment as a result of rapid industrialisation. However, rising income levels can compensate the environmental damage resulting from economic activities. At this stage, people are willing to sacrifice the consumption of goods for protecting the environment (Andreoni & Levinson, 2001).

There has been no standard environmental protection indicators. Some scholars such as Holtz-Eakin and Selden (1995); Roberts and Grimes (1997), use carbon dioxide emission as an indicator while Grossman and Krueger (1991); Panayotou (1997) use sulphur dioxide. The EKC hypothesis could be described using a linear, quadratic or cubic function (Panayotou, 1994).

Trade Openness and Environmental Degradation

The earliest work on trade and environment is the classical theory of trade which is based on the perfect competitive model (Baumol & Oates, 1993; Krutilla, 1991; Taylor & Copeland, 2004). Several studies apply Ricardian trade model or models that combine the emissions level into Heckscher – Ohlin (HO).

In economic theory, the relation between trade liberalisation and the environment, called the pollution haven effect, is the most controversial point of debate among scholars, as they are yet to reach a consensus on the presence or absence of the pollution haven effect. Baumol and Oates (1993) identify the pollution haven effect as the trade liberalisation among countries having different environmental protection standards and practices; Taylor and Copeland (2004) opine a country should be responsible forpaying the social cost of environmental protection. Trade between countries usually does not involve environmental issues and many developing countries pay a high environmental cost to gain commodity comparative advantage. Therefore, attempts to override the effects of the polluting impact of trade as a possible spill over effect may exacerbate other distortions, namely low production and income levels due to low technological mastery in developing countries, and hence, need comprehensive policy reforms (Antweiler, Copeland, & Taylor, 2001).

METHODS

This study employed time series data from 1975 to 2014 of five Southeast Asian countries, including Indonesia, Malaysia, Singapore, Thailand, and the Philippines. The CO_2 emissions representing environmental degradation were used as the dependent variable. The economic condition represented by the real GDP per capita and the openness represented by trade ratio to GDP was the independent variables.

The ECM model of EKC of five Southeast Asian countries

To examine the EKC hypothesis, this study computes the three of regression equation models as follows:

Linear :$Y_t = \beta_0 + \beta_1 X_t + \varepsilon_{it}$ (1)

Quadratic :$Y_t = \beta_2 + \beta_3 X_t + \beta_4 (X_t)^2 + \beta_5 TL_t + \varepsilon_{2t}$ (2)

Cubic :$Y_t = \beta_6 + \beta_7 X_t + \beta_8 (X_t)^2 + \beta_9 (X_t)^3 + \beta_{10} TL_t + \varepsilon_{3t}$ (3)

Y_t is CO_2 emissions in year t (in kg/ton); X_{it} is the real GDP per capita in year t (in US$); and TL_t is the ratio of exports to GDP in year t (in percent) as the trade liberalisation indicator. The β_0, β_2, and β_3 are constants in equations (1), (2) and (3) successively; β_1, β_3, β_4, β_5, β_7, β_8, β_9, and β_{10}, are the regression coefficients and ε_{1t}, ε_{2t}, ε_{3t} are the error terms for equation (1), (2) and (3) successively in year t.

This study applied Engle-Granger (EG) procedure of Error Correction Model (ECM) to analyse the dynamics of the short-run effect of economic growth on environmental degradation, where the long-run relationships can be performed by estimating the regression of all co-integrated equations (Thomas, 1997). The co-integration of the two (or more) time series variables indicates there is a long-run nexus or equilibrium between the variables, then the short-run disequilibrium relationship between dependent and independent variables can be estimated.

EG test is conducted to test the cointegration of the residual ε_{3t}, using the Dicky-Fuller (DF) stationary test (Gujarati & Porter, 2009):

$$\Delta u_t = \Omega_1 \varepsilon_{3t-1} + v_t \quad (4)$$

The following equations are a brief derivation of ECM model based on equation (3); while, equation (1) and equation (2) are explained using similar procedures. To estimate the ECM model, equation (3) needs to be re-ordered by first adding the lag of independent variables, and the model is autoregressive distributed lag (ARDL) (1,1):

$$Y_t = b_0 + b_1 X_t + b_2 X_{t-1} + b_3 (X_t)^2 + b_4 (X_{t-1})^2 + b_5 (X_t)^3 + b_6 (X_{t-1})^3 + b_7 TL_t + b_8 TL_{t-1} + \mu Y_{t-1} + e_t \quad (5)$$

and the result is,

$$\Delta Y_t = b_1\Delta X_t + b_3\Delta X_t^{\ 2} + b_5\Delta X_t^{\ 3} - (1-\mu)\left(Y_{t-1} - \frac{b_0}{1-\mu} - \frac{(b_1+b_2)}{1-\mu}X_{t-1} - \frac{(b_3+b_4)}{1-\mu}(X_{t-1})^2 - \frac{(b_5+b_6)}{1-\mu}(X_{t-1})^3\right) + e_t \tag{6}$$

From the ADRL (1,1), it is noted that where $\beta_6 = \frac{b_0}{1-\mu}$, $\beta_7 = \frac{(b_1+b_2)}{1-\mu}$, $\beta_8 = \frac{(b_3+b_4)}{1-\mu}$, and $\beta_9 = \frac{(b_5+b_6)}{1-\mu}$. Equation (6) can be referred to a first order model ECM equation with $\left(Y_{t-1} - \frac{b_0}{1-\mu} - \frac{(b_1+b_2)}{1-\mu}X_{t-1} - \frac{(b_4+b_4)}{1-\mu}(X_{t-1})^2 - \frac{(b_5+b_6)}{1-\mu}(X_{t-1})^3\right)$ as an *Error Correction Term*.

Panel Data Regression Model of EKC in Southeast Asian Countries

Fixed Effects Model (FEM) and Random Effects Model (REM) are selected for the fit model used in this study. In this case, FEM assumes the intercept of each individual to have differences caused by special characteristics possessed by each individual. The terminology of the fixed effect shows that despite the fact the intercept varies among the individuals, for each individual, the intercept does not vary over time, called time invariant. It can also be stated that based on FEM models, it is assumed the slope coefficient of regressors does not vary between individuals and over time. The REM intercept is considered as the average of random variables. The intercept is not assumed to be constant, so the model is also popularly known as random error component model (Gujarati & Porter, 2009).

The panel regression equations of the hypothesis of EKC are formulated as follows (in the form of logarithm *Ln* quadratic models):

$$LnCO2_{it} = \beta_0 + \beta_1 LnGDPCAP_{it} + \beta_2(LnGDPCAP_{it})^2 + \beta_3 LnTL_{it} + u_{it} \tag{9}$$

To estimate the EKC hypothesis, the CO_2 emissions is used as a representation of environmental degradation, the Gross Domestic Product per Capita (*GDPCAP*) and the ratio of exports to gross domestic product (TL) are used to represent the macroeconomic condition and trade liberalisation. The subscript i indicate countries.

The fixed-effect model treats the β0 and β_t as regression parameters as they helped capture the countries' specific time invariant factors affecting pollution intensity. The random-effect model treats β_0 and β_t as components of random disturbances. If the correlation between β_0, β_t and the explanatory variables exist, the random-effect model cannot be estimated consistently (Hsiao, 2007). Only the fixed-effect model can be estimated consistently. The Hausman test will be used to determine whether the fixed effect or random effect model is preferred.

RESULTS AND DISCUSSION

For the long run models (Table 1), R^2 values explain the variation of CO_2 emissions more than 90 percent in each of estimation models of Indonesia, Malaysia, Thailand, and the Philippines, except Singapore (the R^2 is 56.4). The figure of the calculated F was found greater than critical F, which pointed to the overall independent variables affecting CO_2 emissions in each country (Table 1).

The long run estimation results indicate the models of EKC inverted U-shaped were empirically proven in Singapore, indicated by the coefficient $\beta_1 > 0$ and $\beta_2 < 0$. Meanwhile, in Indonesia, the model generated $\beta_1 > 0$ and $\beta_2 > 0$ exhibiting an increase in emissions CO_2 along with the increase of its economic growth; although, its per capita income does not statistically significant affect the CO_2 at 10 percent level of confidence (α). Moreover, the estimation model of Malaysia, Thailand, and the Philippines are $\beta_1 < 0$ and $\beta_2 > 0$ meaning that CO_2 emissions decrease when per capita income increases, despite at a certain point, the per capita income increases CO_2 emissions.

Table 1
Estimation result of long run EKC model: Dependent variable Y

Variable	Coefficient and (t-stat)				
	Indonesia	Malaysia	Thailand	Philippines	Singapore
Constant	3.102	34.843	9.050	51.009	-105.567
	(0.552)	(2.978)***	(1.502)*	(1.521)	(-5.938)***
LnX	0.707	-8.118	-1.387	-13.781	23.494
	(0.413)	(-2.767)***	(-0.850)	(-1.453)	(6.650)***
LnX^2	0.062	0.596	0.163	1.076	-0.120
	(0.497)	(3.424)***	(1.435)*	(1.610)	(0.524)***
LnTL	0.298	0.509	0.826	0.829	0.229
	(2.193)**	(3.118)***	(1.502)***	(14.020)***	(0.524)
R^2	0.971	0.985	0.979	0.933	0.563
Adj. R^2	0.969	0.984	0.977	0.927	0.527
F-stat	405.672	787.6747	549.756	165.891	15.501

Note: *** significant at α = 0.01; ** significant at α = 0.05; * significant at α = 0.10

The estimations of the long run model showed trade liberalisation had a positive and significant effect on CO_2 emissions, except in Singapore. Statistically, trade liberalisation in the island state did not significantly affect CO_2 emissions but it pointed to a positive relationship. This finding proves that Singapore economy as a developed country, places great concern on the quality of its environment.

According to ECM estimation (Table 2), the short run model is consistent with the long run one. For Indonesia, the variable of trade liberalisation do not statistically significant affect environmental degradation. For all countries, except the Philippines, the quadratic per capita income significantly affected CO_2 emissions. Based on the estimated coefficients of each country, the EKC hypothesis had only been occurred in Singapore, where $\beta_1 >0$ and $\beta_2 <0$. In the short run, the trade liberalisation variable had significant effect ($\alpha = 0.01$ and $\alpha = 0.05$) on the Philippines and Malaysia estimation models while the Thai model showed a significant effect at $\alpha = 0.1$. The negative sign of ECT explains the discrepancy between the long-run and the short-run estimated CO_2 emissions was corrected by the magnitude of the ECT coefficient within one period.

Table 2
Estimation result of short run EKC model: Dependent variable ΔLnY

Variable	Coefficient and (t-stat)				
	Indonesia	Malaysia	Thailand	Philippines	Singapore
Constant	0.046	0.067	0.070	0.023	0.029
	(2.35)**	(4.279)***	(5.164)***	(2.202)	(0.596)
ΔLnX	1.385	-8.816	-0.873	-9.696	14.553
	(0.291)	(-1.838)*	(-0.312)	(-0.864)	(1.356)
ΔLnX^2	-0.067	0.522	0.045	0.709	-0.789
	(-0.193)	(1.794)*	(0.240)	(0.885)	(-1.457)
ΔLnTL	-0.006	0.635	0.209	0.194	0.743
	(-0.062)	(3.194)**	(1.605)*	(1.503)***	(-3.132)
ECT	-0.370	-0.0535	-0.284	-0.422	-0.406
	(-3.224)***	(5.058)***	(-3.806)***	(-4.450)***	(-3.132)***
R^2	0.256	0.481	0.305	0.387	0.268
Adj. R^2	0.169	0.420	0.223	0.315	0.181
F-stat	2.930	7.874	3.732	5.370	3.106

Note: *** significant at $\alpha = 0.01$; ** significant at $\alpha = 0.05$; * significant at $\alpha = 0.10$

To find out how environmental issues affect Southeast Asian economies, this study applies panel data regression model, which is FEM - which is resulted by the Hausman model selection. The estimation results indicate that coefficient of GDP per capita (in linear and quadratic forms) affect CO_2 emissions in Southeast Asian countries. The coefficient of per capita income and quadratic per capita income are statistically significant affecting CO_2 emissions at level of confidence $\alpha = 0.01$ (Table 3). The coefficient per capita income of 4.830 points to the fact in the early stages of Southeast Asian economic development, 1 percent increase in per capita income increases CO_2 emissions by 4.830 percent.

The estimation of FEM model proves that a priori positive sign of the coefficient per capita income (β_1) and the negative sign of quadratic per capita income (β_2), form the inverted U curve of EKC hypothesis (indicated by $\beta_2 \neq 0$, and if $\beta_1 > 0$ and $\beta_2 < 0$). This finding means that panel data estimation was able to explain the behaviour of CO_2 emissions in the five Southeast Asian countries.

Table 3
Estimation results of the data panel – FEM

Variable	Coefficient	t-Statistic
Constant	-14.907	-12.396***
LnGDPCAP	4.830	15.419***
LnGDPCAP^2	-0.236	-12.758***
LnTL	0.638	7.868***
R-squared	0.922	
Adjusted R-squared	0.920	
F-statistic	326.172	

Note: *** significant at $\alpha = 0.01$

CONCLUSION

This study utilised the dynamic econometric model and the cointegration test to estimate the long-run relationship of trade liberalisation on environmental degradation to prove the EKC hypothesis in the five Southeast Asian countries. In the long run, the estimations indicated that a priori model of EKC was supported in Singapore, and the trade liberalisation had positive significant effect on CO_2 emissions, except in Singapore. In the short run, the estimation results proved the estimated parameters supported the EKC hypothesis, though the effect of income per capita and trade liberalisation on environmental degradation was not statistically significant.

The result shows the differences of national income per capita and trade liberalisation in relation to environmental degradation in developed country i.e. Singapore and in developing countries such as Indonesia, Malaysia, Thailand, and the Philippines in Southeast Asia. This could be due to the dependence of the latter countries on natural resources, the increase in the economies of scale, and the shift of the economic structure from agriculture to manufacture in four Southeast Asian countries, except Singapore.

The estimation of panel data regression of Southeast Asian countries indicated per capita income and trade liberalisation had significant effect on CO_2 emissions. Therefore, it can be concluded that the environmental policies were crucial and must be coordinated in order to reduce their negative impacts on the environment due to rapid development and expansion of trade. Meanwhile, the EKC hypothesis was proven in Southeast Asian countries. The increase in per capita income aggravate environmental degradation in Southeast Asian countries, but the turning point is the increase in income that would reduce environmental degradation due to awareness and the cost of the environmental damages.

Although the findings, to some extent, are conclusive, this study has several limitations including lack of data in a long-time series and the use of environmental indicators, which were limited to CO_2 emissions. This study can be developed using other environmental indicators.

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Conservation and Environmental Performance of Islamic Enterprises in Indonesia

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ABSTRACT

Conservation is very important for Islamic enterprises in their effort to protect the environment. This research examines the effect of conservation on the environmental performance of Indonesian Islamic enterprises from the perspective of legitimacy theory. The relationship between conservation and environmental performance examined and tested using Partial Least Square-Structural Equation Model (PLS-SEM). The results of the study showed positive influence of conservation on environmental performance at Islamic enterprises to guarantee the quality of human life. It was recommended Institute of Indonesia Chartered Accountants (IAI) publish the Environmental Accounting Standards.

Keywords: Conservation, environmental performance, Islamic enterprises, PLS-SEM

INTRODUCTION

Environmental degradation is the outcome of poor management and exploitation of natural resources without conservation. It also decreases both the quality of life and public welfare. In Indonesia, environmental damage leads to air, water, land, river, and sea pollution as well as the destruction of forests. In line with the teachings of Islam, humans are responsible to Allah and as *Khalifah* ohn the earth, they are entrusted to protect the environment (Ismail, Ramli, & Darus, 2014). Ahmed (2012) recommended that environmental management accounting (EMA) be implemented at Islamic companies to ensure conservation of nature to guarantee the prosperity for human and all his creatures.

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There are some reasons for implementing the EMA at Islamic enterprises. First, to eliminate environmental damages as a result of the company's activities (Arfan, 2008). Second, to provide relevant information for environmental management and accountability for environmental performance (Swamy, 2010). Third, to improve the management's adherence to Islamic principles in managing the environment (Johnstone, 2012). Implementing the Islamic principles has positive influence on the performance of Islamic enterprises (Asrori, 2014). This is the main motivation for this research. The Law of Republic Indonesia No. 40 in 2007 on Limited Company at chapter 74, state that: "the companies which run the business activities at the field of or related to the natural resources are obliged to perform the social and environment responsibility". The issuance of laws did not receive any attention from Indonesian Accountants Association (Ikatan Akuntan Indonesia/IAI). The SFAS No. 1, paragraph 14 states that: "the report on environmental management for industrial companies in which the environment played the important role it was specified as the additional report only" (Indonesian Accountants Association, 2009).

Thus, the research question is: Does conservation have a positive influence on environmental performance of Islamic enterprises in Indonesia to guarantee quality of human life and welfare society?

LITERATURE REVIEW

Conservation

Conservation receives critical attention in Islamic civilisation. In line with the Islamic teaching, conservation activities are very important for the Islamic enterprise to preserve the environment (Darus, Yusoff, & Mohd Azhari, 2013; Ismail et al., 2014). Conservation pertains to micro environmental conservation, i.e. preventing, controlling and overcoming the environmental degradation; second the macro environmental conservation, i.e. to prevent, to control and to resolve the global environmental damages; third the environmental conservation aims to preserve and maintain the availability of natural resources; fourth, the environmental conservation maintains and preserves nature to ensure social welfare. Yusoff, Darus and Rahman (2015) show that companies have undertaken initiatives to educate their employees and society by providing environmental and education programmes in order to cultivate good habits to preserve the environment.

Environmental Performance

Ferreira, Moulang and Hendro (2010) confirmed that EMA was required to present relevant information for the company management to improve its environmental performance to ensure the business sustainability. Environmental performance reflects the company's ability to create a good environment for physical, economic and social benefits to guarantee the quality of human life and welfare society (Ferreira, Moulang, & Hendro, 2010; Setthasakko, 2010). The physical benefits relate to decrease in air, water, soil and waste pollution, and the efficiency of energy use. It also improves the economic independence and the public incomes and to improve the development and sustainability of local economic institutions. The social benefit relates to improvement of community solidarity, the prevention of social conflict, and the institutionalisation of social relationships between companies and communities.

The Hypothesis Development

Deegan (2002) in legitimacy theory states that if the company's values were congruent with the social values, then its social contract is legitimate and its survival would be assured. In line with legitimacy theory, implementation of EMA was necessary for the company's management to be more proactive in managing environmental issues (Cassells, Lewis, & Findlater, 2011), and to improve environmental performance (Ann, Zailani, & Wahid, 2006). A number of researches provide empirical support of om the implementation of environmental management in Islamic companies which have a significant effect on the fulfillment of corporate social responsibility to meet the conservation needs and improve environmental performance to achieve sustainable development goals (Ahmed, 2012; Ismail et al., 2014), to create a good environment in obtain the physical, economic and social benefits to guarantee the quality of human life and welfare society (Ferreira et al., 2010; Setthasakko, 2010). Referring to the legitimacy theory and research results described above, the hypothesis of the research was: "conservation has a positive influence on environmental performance at Islamic enterprises in obtaining of the physical, economic and social benefits to guarantee the quality of human life and welfare society."

METHODS

The sample of the study consist of 14 Indonesian public companies covering, namely Islamic enterprises, which are listed in the Jakarta Islamic Index (JII). These companies were selected based on their experience in the field and due to abundance of natural resources which were sensitive to the environment. The unit of analysis of this study includes the annual reports of Islamic companies selected as samples, over the last five years from 2011 to 2015.

The variables of the study consist of conservation and environmental performance. Conservation variable presents the Islamic enterprise efforts to maintain and preserve the environment. The variable was measured by four indicators conservation disclosure, were the micro conservation, the macro conservation, the natural resources conservation, and the public welfare conservation (Darus et al., 2013; Ismail et al., 2014; Yusoff et al., 2015). Environmental performance variable was the result or benefits derived from the company's environmental management. The variable was measured by three indicators in obtaining the physical, economic and social benefits to guarantee the quality of human life and welfare society (Ferreira et al., 2010; Setthasakko, 2010).

Data was gleaned from documentation. Furthermore, to test the hypotheses; the data was analysed by Partial Least Square-Structural Equation Model (PLS-SEM), (see the conceptual model below).

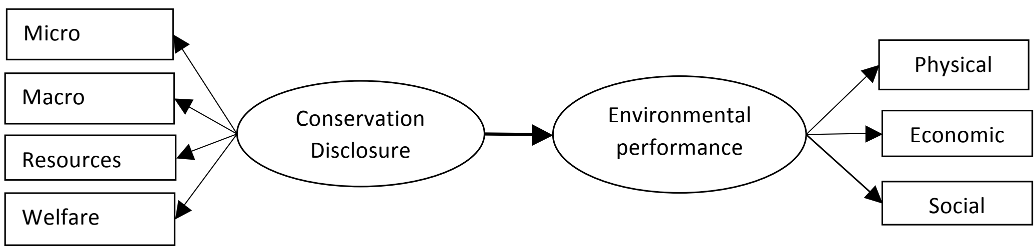

Figure 1. The conceptual model of SEM-PLS influence of conservation disclosure toward the environmental performance of Islamic enterprises

The hypothesis was tested by the significance level of 5% (t count> t table 1.691). If the path coefficient was smaller than the significance level of 5% (that t count> t table 1.691) the hypothesis was accepted; and vice versa.

RESULTS

Descriptive Analysis

The findings of descriptive analysis of conservation and environmental performance at Islamic enterprises in Indonesia described in Table 1 and Table 2.

Table 1
Description of conservation at Islamic enterprises in Indonesia

Indicator	Description	Criteria
Micro conservation	Prevent pollutions of noise, vibration, air, water, soil, odour, waste production, and other environmental pollutions around the company.	Low
Macro conservation	Prevent the global warming, depletion of the ozone layer, pollutions of river and sea, destruction of forests, and other macro environmental damages.	Low
Natural resources conservation	Maintain and ensure the availability and sustainability of water, energy, materials; and other natural resources that are used as raw material production; and efforts to use raw materials from recycled production.	Medium
Welfare conservation	CSR program to improve the quality of human life and welfare society, education and environmental training, the development of environmentally friendly products, environmental sustainability research, participation in reforestation and preservation.	Medium

Table 2
Description of environmental performance of Islamic enterprises in Indonesia

Indicator	Description	Criteria
Physical benefit	The efficient of energy and water uses; reduction of emissions, air and water pollutions, soil contamination and production waste.	Medium
Economic benefit	The increase in community income, community empowerment, institutional establishment of new local economy, and development and sustainability of local economic institutions	Medium
Social benefit	Improvement of community solidarity, social relationships and sustainability between companies and communities, and reduction of the social conflicts between companies and communities.	Medium

The Hypothesis Testing

The empirical model of the hypothesis testing which can be seen in the following figure:

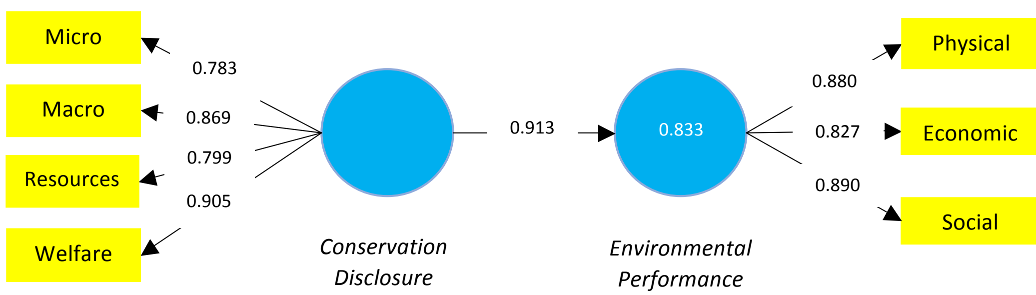

Figure 2. The influence of conservation disclosure on the environmental performance at Islamic enterprises in Indonesia

Based on the empirical model above, path coefficient was used to support the hypothesis (Table 3).

Table 3
The path coefficient of the original sample on the influence of conservation disclosure toward the environmental performance at Islamic enterprises in Indonesia

Path Coefficient	Original Sample	Sample Mean	Standard Deviation	T Statistics (|O/STDEV|)	P-Values
Conservation Disclosure -> Environmental performance	0.913	0.916	0.011	82.893	0000

Based on the table above the hypothesis "conservation has the positive influence on environmental performance at Islamic enterprises in obtaining of physical, economic and social benefits to guarantee the quality of human life and welfare society" was accepted.

DISCUSSION

Conservation disclosure at Islamic enterprises in Indonesia which was observed by four indicators, namely micro environmental conservation, macro environmental conservation, natural resources conservation and public welfare conservation were at the low and medium categories. Environmental performance of Islamic enterprises in Indonesia which was observed by three indicators in obtaining physical, economic and social benefits were at the medium categories. The results of this study provided empirical evidence that conservation has the positive influence on environmental performance at Islamic enterprises in obtaining of physical, economic and social benefits.

This study provides empirical support for the importance of EMA implemented by the Islamic enterprises as recommended by Ahmad (2000) which states that the environmental management accounting should be implemented at Islamic enterprises as the decision-making media and the accountability for performing conservation of nature to guarantee the quality of human life and welfare society. Referring recommendations of Cassells, Lewis and Findlater (2011); Ferreira et al. (2010); Setthasakko (2010) the implementation of EMA is required to improve the management efforts of Indonesian Islamic enterprises to be more proactive in managing conservation to increases environmental performance. Mainly in managing micro conservation to prevent pollutions of noise, vibration, air, water, soil, odour, waste production, and other environmental pollutions around the company; and also in managing macro conservation to prevent the global warming, depletion of the ozone layer, pollutions of river and sea, destruction of forest, and other macro environmental damages, with is still in the low category.

Implementation of EMA is required of Indonesian Islamic enterprises in addition to improving conservation activities, and it is also intended to increase its environmental performance in achieving the benefits of the physical, economic and social to guarantee the quality of human life and welfare society which is still in the medium category. Consistent with the results of this study so it was recommended to Institute of Indonesia Chartered Accountants (IAI) to publish the Environmental Accounting Standards as the guidelines for the company management to fulfil accountability on managing of environmental which was appropriate to the law and regulation.

CONCLUSION

Conservation at Islamic enterprises in Indonesia which was observed by disclosure of micro and macro conservation. Resources conservation and public welfare show the medium categories. Environmental performance of Islamic enterprises in Indonesia which was observed by three indicators in obtaining physical, economic and social benefits was in the medium categories. This study gives empirical support that conservation has positive influence on environmental performance at Islamic enterprises in obtaining physical, economic and social benefits to guarantee the quality of human life and welfare society. Consistent with the results of this study was recommended for Institute of Indonesia Chartered Accountants (IAI) to publish the Environmental Accounting Standards.

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Management Control Systems and Firm Performance: The Mediating Role of Motivation, Market Orientation and Organisational Learning

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ABSTRACT

Management control systems (MCS) is a set of formal and informal systems used to help management to direct the company toward its goals. In particular, this study applied Simon's Levers of control (beliefs systems, boundary systems, interactive control systems and diagnostic control systems) to reveal the role of MCS in generating motivation; in clear market orientation; in facilitating organisational learning; and in increasing firm performance. This study aims to examine the effect of MCS on motivation, market orientation, organisational learning, and firm performance. The population in this study was all 32 Conventional Rural Bank (in Indonesia, BPR) in Riau Province, - Indonesia. Data was collected through questionnaires which were distributed to 116 respondents consisting of the top- and middle- management of BPRs. Data of this study was analysed by using WarpPLS 5.0. The results showed that management control system have an influence on motivation, market orientation and organisational learning. Further analysis found that motivation, market orientation and organisational learning mediate the relationship between MCS and firm performance.

Keywords: Firm performance, management control systems (MCS), motivations, market orientation, organisation learning, partial least squared (PLS), rural bank

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INTRODUCTION

Micro-finance institutions in the Indonesian economy, as well as in other developing countries, is important for communities and for small and medium enterprises to provide funding. One type of microfinance institutions in Indonesia is rural banks (in Indonesian, termed Bank Perkreditan Rakyat - BPR). The number of BPRs in 1.635 BPR, with 6.024 offices spread throughout Indonesia. In 2016, 71% of BPRs were unhealthy and only 29% showed good performance. This requires serious attention, not only from BPRs but also from the Indonesian government, to improve their performance.

Management control systems (MCS) have an important function within the firms. Failures in implementing MCS will lead to great economic loss and damage to reputation, and can even cause failure of a firm (Merchar & Van der Stede, 2014). Therefore, every company has to design and implement MCS in order to produce a good performance (Lekatompessy, 2011). Simons (1995) was the first to introduce the concept of MCS, which is known as levers of control. It is composed of four dimensions: beliefs system, boundary system, diagnostic control system, and interactive control system. These four dimensions of control have different objectives, and to produce an effective overall control, all four systems must be applied together (Simons, 1995). On the other hand, market orientation and organisational learning also plays an important role in enhancing firm performance (Henri, 2006). In addition, the theory of motivation emphasises the importance of motivation as a driver for better performance (Guo, 2007).

Based on the above and the important role of the rural bank in assisting SMEs, it is important to study the performance of BPRs. In particular, it is important to see the effect of MCS on the performance of the firms and the role of motivation, market orientation, and organisational learning as variables that mediate the relationship between MCS and firm performance.

LITERATURE REVIEW

Management Control System

Management control systems (MCS) are the formal, information-based routines and procedures used by managers to maintain or alter patterns in organisational activities (Simons, 1994). It has four levers of control. The first lever is called beliefs systems. These systems are used by top managers to define, communicate, and reinforce the basic values, purpose, and direction for the organisation. The second lever, boundary systems, is used by top managers to establish explicit limits and rules that must be respected. Diagnostic control systems, the third lever, are used to monitor organisational outcomes and correct deviations from pre-set standards of performance. Interactive control systems are the last of the levers. This lever is used by top managers to regularly and personally involve themselves in the decision making activities of subordinates (Simons, 1994). The implementation of levers of control in the organisation can provide motivation to all its members to learn various things in the organisation cooperatively to achieve high organisational performance and is ultimately able to reach the goals of the organisation.

MCS and Motivation

In the process of control, management must generate interaction among members/ employees wherein there is communication that creates important information in making decisions. Such control can thereby provide motivation to employees. In the self-determination theory of motivation, in terms of creating and maintaining a proactive, innovative and happy workforce, the management must adopt an organisational design that fosters employee motivation autonomously (intrinsic) and in a controlled manner (extrinsic) (Ryan & Deci, 2000). Intrinsic motivation is defined as the performance of an activity for inherent satisfaction and not for some separable consequences (Ryan & Deci, 2000). Extrinsic motivation is a related concept, that is, whenever an activity is performed in order to achieve some separated results (Ryan & Deci, 2000). It can be concluded that motivation is an encouragement of the self both because of internal factors (such as pleasure and satisfaction derived from self) as well as external factors (such as rewards, incentives, maintainance of self-esteem and considering oneself important). Where the combination of the two will produce positive motivation and an equal desire to show high self-will, it thus creates proactivity and invokes resources to seek better practices. With the implementation of MCS integrated into the belief system levers of control employees are given motivation to continue to work towards the main goal, achieve the mission, and seek opportunities (Ismail, 2011). The boundary system provides an opportunity for all members of the company to be motivated to seek new opportunities (Lekatompessy, 2011). With diagnostic control, employees are motivated to perform and align employee behaviour with organisational goals (Ismail, 2011). The use of diagnostics provides motivation and direction for achieving goals by focusing on correcting deviations from predetermined performance standards (Henri, 2006). Furthermore, interactive implementation will trigger employee motivation for involving themselves in the activities of decision-making. Thus, the management control system participates in the process to guide employee behaviour with motivation (Matei, Tole, & Nedelescu, 2012). According to Christiani and Hatane (2014), a strong MCS within the organisation will produce good employee motivation. Therefore, the following hypothesis is proposed:

H1: The implementation of MCS has a positive effect on motivation

MCS and Market Orientation

The belief system that is part of the MCS allows companies to find and investigate what consumers want. Therefore, market orientation becomes more focused both on behavior and corporate culture (Lekatompessy, 2011). Managers use strategic limits to convey to their employees activities deemed acceptable or prohibited, so that the latter do not waste organisational resources (Schaltegger & Burrittt, 2010). Furthermore, the diagnostic control system is one of the systems in MCS, monitoring the results achieved by the company. This diagnostic control system can determine customer needs and number of customers in the future, as well as measure level of customer satisfaction. In an interactive control system, managers focus more on the uncertainty of strategies, such as the nature of the customer, so as to provide an understanding of the needs of customers both now and in the future. According to a resource-based view, MCS is a system that can help and direct the company to achieve its objectives by controlling its resources and ability in choosing and defining market orientation clearly. The following research hypothesis is proposed as follows:

H2: The implementation of MCS has a positive effect on market orientation

MCS and Organisational Learning

Organisation learning involves an organisation skilled at creating, acquiring, and transferring knowledge, and modifying its behaviour to reflect new knowledge and insights. (Garvin, 1993). Organisations with high learning levels are usually accompanied by a high commitment to learning. For that, every member of the organisation must be controlled by beliefs system so that organisational learning becomes a culture for the company (Sinkula, Baker, & Noordewier, 1997). Management that implements a boundary system by setting constraints in avoiding risk provides an overview for individuals and management for setting of these limits and also to create strategies to minimise risk. The diagnostic control system gives management the ability to minimise deviation by learning and updating the knowledge gained from experience and then creating new strategies. Managers engage in subordinate decision activities with the aim of encouraging learning and strategic considerations or alternative goals (Cuganesan & Donovan, 2011). The interactive control system basically illustrates the positive pressure of the MCS used to expand the search for opportunities and learning (Lekatompessy, 2011). Utilising resource-based view theory, MCS helps and directs a company to its goals by controlling the resources and capability to choose and define market orientation clearly. Therefore, the following hypothesis is proposed:

H3: MCS has a positive effect on organisational learning

MCS and Firm Performance

The MCS is designed to assist managers in planning and controlling organisational activities (Institute of Chartered Financial Analysts of India, [ICFAI], 2006). According to Armes and Salarzehi (2010), MCS is a system that collects and uses information to evaluate the performance of different organisational resources such as human, physical, and financial, and also the organisation as a whole, by considering organisational strategy. A good MCS ensures success for an organisation (ICFAI, 2006). The MCS should be designed to support the company's chosen strategy in order to gain competitive advantage and high performance (Gani & Jermias, 2010). Lekatompessy (2011) failed to prove the existence of direct influence of MCS on company performance. Meanwhile Christiani and Hatane (2014); Henri (2006) reported the implementation of MCS had an influence on firm performance. Thus, the following hypothesis is proposed:

H4: MCS has a positive effect on firm performance

Motivation and Firm Performance

Attaining better employee performance, and subsequently better organisational performance requires high employee motivation, both of the intrinsic and extrinsic type. Organisational performance depends on individual performance. In other words, individual performance will contribute to organisational performance, meaning that the behavior of member organisations both individually and in groups gives strength for organisational performance (Brahmasari & Suprayetno, 2008). If employees are highly motivated, they will perform well. This combination will result in superior company performance (Fey, Morgulis-Yakushev, Park, & Bjorkman, 2009). According to the theory of motivation (self-determination theory), it (motivation) is the most important factor that drives an individual's performance as reflected in the company's performance. Hence, the following hypothesis is proposed:

H5: Motivation has a positive effect on on firm performance

Market Orientation and Firm Performance

Market orientation is the most decisive factor for achieving firm performance (Narver & Slater, 1990) and it is often used as a strong foundation for improving performance (Jaworski & Kohli, 1993). With the ability of the company to understand the needs of customers on an ongoing basis, be it for existing customers or new customers, the company can expand its business, seek new opportunities, and set strategies to deal with threats. Thus, the goals or targets that have been set can be achieved and reflect on the performance of the company. Some of the earlier researchers who examined the effect of market orientation on corporate performance reported inconsistent results. Jaworski and Kohli (1993); Panigyraski and Theodoridis (2007); Slater and Narver (2000) found that market orientation had an influence on firm performance while different results were documented by Jimenez and Cegarra-Navarro (2007). The latter could not prove the effect of market orientation on firm performance. Based on the above discussion, the following hypothesis is proposed:

H6: Market orientation has a positive effect on firm performance

Organisational Learning and Firm Performance

According to Slater and Narver (1995), organisational learning is very important to improve company performance. With organisational learning, the company will gain new knowledge both from within and outside so that this knowledge can be used in an effort to improve organisational performance (Lekatompessy, 2011). Previous studies that examined the effect of organisational learning on firm performance concluded differently such as Hernaus, Skerlavaj and Dimovski (2005); Ismail (2016); Jimenez and Navarro (2007); Widener (2007). Hernaus et al. (2005); Ismail (2016); Jimenez and Navarro (2007); Widener (2007) and found that organisational learning has a positive effect on firm performance, while Jimenez, Valle and Espallardo (2008) failed to prove the effect of organisational learning on firm performance. To reconfirm the effect of organisational learning on firm performance, the following hypothesis is proposed:

H7: Organisational learning has a positive effect on firm performance

MCS, Motivation and Firm Performance

Based on the above discussion, it is assumed that MCS will affect firm performance if they can encourage strong motivation from members and the management. When MCS is designed in accordance with organisational objectives and defined boundaries, has considered the risks of the strategy selected, and considers the uncertainty of the firm's strategy, it will generate encouragement both internally and externally for members of the organisation as well as management, to demonstrate better performance. This in turn will yield optimal company performance. A comprehensive MCS is needed to ensure employees are motivated to be efficient and effective (Christiani & Hatame, 2014). Until now, studies that discuss the role of motivation as a mediating variable that mediate MCS with firm performance are still limited. Christiani and Hatane (2014) could not prove the role of motivation as a mediating variable that relates MCS to firm performance. The following hypothesis is proposed to re-examine the role of motivation as a mediating variable.

H8: The effect of MCS on firm performance is mediated by motivation

MCS, Market Orientation and Firm Performance

Several previous studies have examined the effect of MSC on market orientation. Some have also examined the effect of market orientation on firm performance. In this study, we hypothesise that market orientation can mediate the influence of MCS on firm performance. This hypothesis is proposed with reference to the resource-based view. According to the theory of resource-based view (RBV), the competitiveness of an organisation is a function of its uniqueness and value of resources and capabilities possessed by it (Lekatompessy, 2012). A well-managed and systematised MCS can assist management in directing the firm to its objectives by controlling the firm's resources and capabilities to choose and define market orientation, both clearly and appropriately. This will have an effect on improving firm performance. Therefore, the following hypothesis is proposed:

H9: The effect of MCS on firm performance is mediated by market orientation

MCS, Organisational Learning and Firm Performance

Several previous studies have examined the effect of MCS on organisational learning. Earlier research (Ismail, 2011) has also examined the influence of organisational learning on the performance of the company. The present study argues organisational learning can mediate the effect of MCS on firm performance. According to resource-based view (RBV) theory, competitiveness is a distinctive function of valuable resources and capabilities controlled by the firm. Innovation, organisational learning, market orientation, and entrepreneurship are recognised as key capabilities for achieving competitive advantage, as well as creating and adapting to market changes (Henri, 2006). It can be concluded that MCS is basically designed to meet organisational needs and contribute to firm performance (Dent, 1990; Ismail, 2011; Samson et al., 1991). Understanding organisational needs appropriately is a learning process for the organisation. Therefore, the following hypothesis is proposed:

H10: The effect of MCS on firm performance is mediated by organisational learning

MCS, Motivation, Market Orientation, Organisational Learning and Firm Performance

Based on the theory of motivation and resource-based view theory, it can be surmised that MCS plays a role in communicating company goals, providing restrictions or rules in the firm's activities, analysing the achievement of goals, and making some decisions or steps taken in the firm's activities. This can create employee motivation both intrinsically and extrinsically. The MCS are also proactively and innovatively capable of managing existing resources as well as providing the ability to set clear market targets and continuously learning from experience, thereby promoting improved firm performance. Therefore, it can be argued MCS will lead to motivation, market orientation and organisational learning which in turn can result in good company performance. Thus, the following hypothesis is proposed:

H11: The effect of MCS on firm performance is mediated by motivation, market orientation and organizational learning

METHODS

Population, Sample and Data Collection

The population in this study was the Conventional Rural Bank (BPR) in Riau Province - Indonesia. All of the BPR in Riau Province (32) were selected as a sample. Data for this study was collected through questionnaires distributed to 160 respondents consisting of top- (such as directors) and middle-managers (such as head of operations, marketing, credit, finance, and internal audit). The number producing final data was 116. The hypotheses ofthis study were analyzed using WarpPLS 5.0.

Research Variables and Method of Measuring

The research studied four construct: First, MCS (consisting of beliefs system, boundary systems, diagnostic control systems and interactive control systems). MCS was measured using 22 items from Chen, Lill and Vance (2014); Simons (1995); Widener (2007). Secondly, the motivation (intrinsic motivation and extrinsic motivation) was mesuared using the 8 items adopted from Chen et al. (2014); Guo (2007). Third, market orientation was measured by using 12 items from Henri (2006); Narver and Slater (1990). Fourth, organizational learning was measured by using 4 items from Garvin (1993) and Henri (2006). Finally, firm performance was measured by using 4 items from Roth and Jackson (1995); Widener (2007). All variables were measured by 9-point Likert scale. Data was analyzed by using stuctural equation modeling (using WarpPLS 5.0) with hierarchical analysis as two out of four contructs are second-order construct. In testing the indirect effect (mediation effects) we used variance accounted for (VAF).

RESULTS

Descriptive Statistic

Respondents who participated in the study consisted of 59 men (51%) and 57 women (49%). The educational backgrounds of the respondents were: diploma (20%), undergraduate (77%), master (3%), and doctorate (1%). The average age of respondents was 34 years. On average, the respondents had worked in the BPR for 7 years. Respondents who participated in this study were: directors (17%), financial managers (9%), operational managers (22%), marketing managers (10%), credit managers (9%), internal audit (22%), and others (10%). The respondents had more than 2 years' experience in their current positions. The following table (table 1) presents the descriptive statistics of variables being studied.

Inferential Statistic Analysis

Inferential statistics help researchers to find out whether the results obtained from a sample can be generalized to the population. Therefore, in this research, the analysis of inferential statistical data is measured using the WarpPLS 5.0 (warp partial least square) program starting from model measurement (outer model), model structure (inner model) and hypothesis testing.

Outer Model

In a test of the outer model, tests of common method bias, convergent validity, and reliability were conducted. In the test of common methods for bias (table 1), all of the variables used were free from the problem of colinearity, specially, ranging between 1.241 - 2.947 < 3.3 (Ghozali & Latan, 2014; Sholihin & Ratmono, 2013). To test the convergent validity it could be seen from loading an indicator value ranging between 0.743 - 0.966> 0.70, and then the value of AVE was obtained ranging between 0.611 - 0.900> 0.50, it proved instruments/ indicators used in this study may explain each variable construct with a degree of validity. Furthermore, for a reliability test (Table 1), the values of Cronbach's alpha ranged between 0.745 - 0.963 and composite reliability values ranged between 0.887 - 0.973> 0.70. This shows that all the instruments used were free of errors and consistent on each the variables of construct with a high level of reliability.

Table 1
Descriptive statistic, outer model

	MCS	MOT	MO	OL	FP
Theoretical Score	22 - 198	8 - 72	12 - 108	4 - 36	4 - 36
Actual Score	116 - 198	45 - 72	63 -108	20 - 36	10 - 36
Mean per Indicator	7.62	7.59	7.29	7.43	6.06
Standar Deviasi per indicator	0.75	0.76	0.77	0.85	1.58
Full Collin. VIF	2.262	1.907	2.947	2.388	1.241
Avg. Var. Extrac	0.830	0.797	0.611	0.691	0.900
Cronbach's Alpha	0.918	0.745	0.942	0.851	0.963
Composite Reliab.	0.942	0.887	0.950	0.899	0.973

In Figure 1 below, seen R-square value of variables of MOT, MO, and OL consecutive are equal to 0.38 (38%), 0.51 (51%) and 0.46 (46%) could be affected by variable MCS while the rest influenced by other variables. Furthermore, the R-square value the variable of FP is 0.22 (22%) and could be affected by variables MCS, MOT, MO, and OL while the rest influenced by other variables.

Inner Model

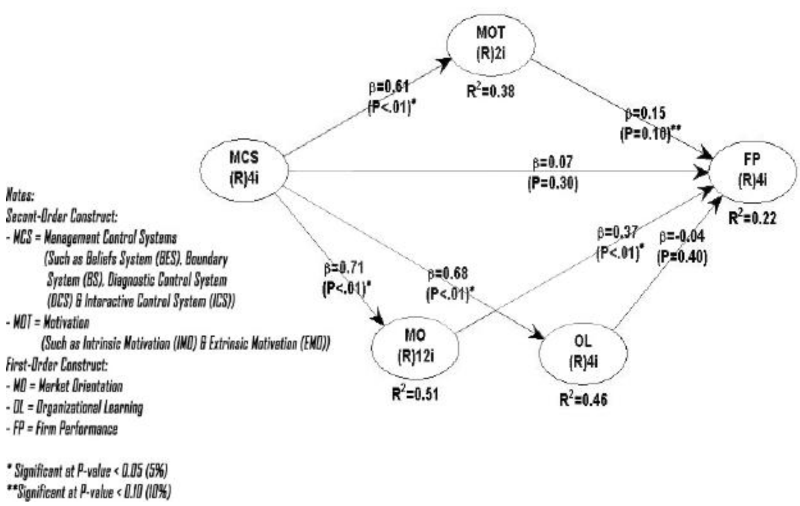

Figure 1. Full structural equation model

Direct Effect

Figure 1, above, indicates the results of testing the direct effect. They are as follows: MCS has a positive and significant effect on motivation (β = 0.614; PV<0.001); MCS has a positive and significant effect on market orientation (β = 0.713; PV<0.001); MCS has a positive and significant effect on organizational learning (β = 0.697; PV<0.001); MCS has no effect on firm performance (β = 0.065; PV = 0.295); motivation has a positive and significant effect on firm performance (β = 0.148; PV 0.096); market orientation has a positive and significant effect on firm performance (β = 0.375; PV<0.005); and organizational learning does not significantly influence firm performance (β = -0.039; PV = 0.40).

Indirect Effect

Table 2
Score of Variance Accounted For (VAF)

Path	a x b (1)	(a x b) + c (2)	VAF= (1)/(2) x 100	Effects
MCS --> MOT --> FP	0.614 x 0.148 = 0.091	0.091 + 0.287 = 0.378	20%<24.07%<80%	Partial Mediation
MCS --> MO --> FP	0.713 x 0.375 = 0.267	0.267 + 0.287 = 0.544	20%<48.19%<80%	Partial Mediation
MCS --> OL --> FP	0.679 x -0.039 = -0.026	-0.026 + 0.287 = 0.261	-9.96%<20% or 0%	No Mediation
MCS --> MOT --> MO --> OL --> FP			Significant and small mediation	
Path Coefficient= 0.332 ; P–Value= 0.010 ; Effect Size = 0.095				

Notes:
a = path coefficient value of predictor variable to mediator, with the significance of P <0.05
b =path coefficient value of mediator variable to criterion, with the significance of P <0.05
c =path coefficient value of the predictor variable on criterion before the mediator variable included in the model, with a significance of P <0.05 (PV or β = 0.287; P Value < 0.01)

DISCUSSION

Figure 1, above, shows the results of hypothesis testing that has formulated direct effect. H1, H2, H3, H5, and H6 are statistically supported, while H4 and H7 are not statistically supported. H1 indicates that a well-managed MCS can form motivation and encourage members of the organization to carry out organizational activities. H2 indicates that conducive MCS can control firm ability in determining market orientation. H3 indicates that MCS can provide learning for the company. H4 indicates that, although MCS has been well-managed, it cannot indicate that it is well-connected to the company's performance. This may be due to the company being unable to predict the environment quickly and appropriately, resulting in overall company performance such as profitability, market share, and service being decreased or poor. H5 indicates that the existence of motivation shows the performance of BPR in managing and running the company's activities. H6 indicates that, with a clear and well-targeted market orientation, this will potentially result in a good firm performance. H7 indicates that the learning of organization has no impact on improving company performance. This may be due to the company's limited human resources in setting a strategy, e.g. in terms of seeking customers. Where there exist limitations of knowledge and low employee and management experience in projecting the risk that will occur, the company will experience losses that can reduce performance.

Table 2, above, shows the results of hypothesis testing of indirect effect. Statistically, H8 and H9 are partially supported, while H10 does not get statistical support. H8 indicates that the presence of MCS will encourage motivation in carrying out the control, so that it can improve the performance of the company. H9 indicates that the presence of MCS will encourage management to determine market orientation that is clearly and precisely targeted, which will impact the performance of the company. H10 indicates that the presence of MCS will trigger the spirit of management to learn, but the learning does not produce results that are reflected in the performance of the company. Limited resources owned by the company in terms of providing education/training to its employees result in improper handling of risks that will occur in the future. Simultaneously, H11 is statistically supported, indicating that MCS will motivate management to determine a clear and precise market orientation, create a desire to improve skills and learn, and develop new things that will support the achievement of company performance.

CONCLUSION

This study reveals that the implementation of MCS could not directly influence the performance of the firm. This means that there are other variables that mediate the relationship between MCS and firm performance. The implementation of MCS has motivated managers to focus on market orientation and organisational learning which in turn leads to improved firm performance. The results of this study are expected to strengthen and support the theory of resource-based view and theory of motivation, as well as previous research. This study was built upon previous researches, namely Christiani and Hatane (2014); Henri (2006); Ismail (2016); Lekatompessy (2011); Widener (2007). By building one model that simultaneously studies MCS, motivation, market orientation, organisational learning, and firm performance, this study provides a comprehensive description of the effect of MCS on firm performance.

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Renminbi Exchange Rate and Capital Flows Interactions in China

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ABSTRACT

The RMB's exchange rate plays a very important role in China's economic development, more so as the country relies heavily on foreign trade. As RMB's exchange rate regime changes from a fixed exchange rate regime to a completely free floating one, China's plan to open capital accounts is in the pipeline. Evidence point to a relationship between RMB's fluctuation and capital flows. This paper uses vector auto-regression (VAR) model to evaluate the relationship between RMB's fluctuation and capital flows. Combined with the actual situation in China, this study introduces the exchange rate expectations (NDF), Gross Domestic Product (GDP) growth, and interest rate factors into the model. In the past two years, RMB's rate regime reform has moved fast, and the benchmark interest rate and repo-bond's rate are not reflective of the market's true rate. Therefore, the currency market's rate gap between China and the USA is used in the VAR model as rate variables. The results show that the rate variable has a high degree of influence on both exchange rate and capital flow. RMB exchange rate's fluctuation has an influence on capital flow, however, it is not considered significant, especially in relation to the spot exchange rate. This phenomenon is largely due to the intervention of the Central Bank of China in the RMB exchange rate. Under China's special conditions, the spot exchange rate's fluctuation is the government's goal. In this case, the Central Bank's intervention is efficient, but the costs involved are still increasing as the exchange rate regime reform moves forward.

Keywords: Capital flows, Central Bank of China, exchange rate, fluctuation, GDP growth, non-delivery forward, RMB, VAR

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INTRODUCTION

China is the third largest economy, after the United States and the European Union. China's economic structure makes it more dependent on foreign trade and it also faces the issue of large of cross-border currency payments and asset allocation. Therefore, it is imperative to understand the relationship between China's exchange rate and the impact of capital flows not only in the context of China itself, but in relation to the rest of the world.

Before the Central Bank of China implemented the exchange rate system reforms in 2005, the exchange rate of RMB was basically tied to the US dollar, with controlled fluctuations. During this period, the influence of cross-border capital flow on the RMB exchange rate fluctuation was very small, or almost negligible. When the exchange rate system was reformed, the RMB exhibited a steady appreciation of the trend, but the extent of its volatility as affected by capital flow remains unclear. In order to stabilise the market, the government must understand the mutual influences of exchange rate and capital flow.

Many articles have focused on this issue (Cai, 2008; Cheung & Fujii, 2014; Funke & Rahn, 2005; Glick & Hutchison, 2008; Ljungwall & Zijian, 2008; Tian, 2016) but most used FDI as the variable (Glick & Hutchison, 2008; Janciková, Raneta, & Braga, 2016; Zhu & Liu, 2010). Others used the Garch model and some analysed the relationship between exchange rates and stock prices (Kai, 2011; Liu, 2007; Tian, 2016). The FDI is a very important capital flow, and it is easy to these its effect on the exchange rate. However, this data is not easily available. Therefore, this study introduces the concept of capital flow, which is equivalent to capital reserve minus the FDI. This study will identify the interaction between the exchange rate of the RMB and capital flow between January 2006 and December 2015. In order to fully understand the influence of the variables, other variables, such as interest rate caps between China and the USA, non-deliverable RMB forward exchange rate, and gross domestic product growth rate, are introduced into the VAR model.

This paper uses the gap of the China-US currency market interest rate to establish a model that better reflects the real market supply and demand, as previous work in this area only adopts the benchmark interest rate or bond market interest rate of the Central Bank of China. It is argued that this approach is not representative of the real market interest rate levels. This is because much of the research data is contained in the appreciation cycle and therefore cannot reflect the effect of reverse trend fluctuations. This is important when considering that the RMB ended its unilateral appreciation trend in 2014, entering into the two-way volatility; an even entered into the trend of devaluation. This paper used data from this occurrence to fully reflect the impact of changes in the RMB exchange rate.

The relevant theories and research results on exchange rate fluctuation and capital flow are summarised in Section 2. Section 3 discusses data and methods used, while the results of the analysis will be presented in Section 4. The paper is summarised and concluded in Section 5.

LITERATURE REVIEW

Fisher (1907) was the first to study the interest rate drivers of short-term international capital flow based on David Ricardo's comparative advantage theory. In modern international economics, Fleming (1962) argued that interest rates have an impact on short-term international capital flow from the perspective of international balance of payments in the 1950s, while the interest rate parity theory explains international capital flow from the perspective of both interest rates and exchange rates in the 1960s. The asset-driven theory suggests that short-term international capital flows are not only affected by the level of interest rates, but also by domestic and international risk level and risk appetite of investors in the 1950s. In addition to interest rate drive theory, interest rate exchange rate combined drive theory and assets (Kim, 1999), the theory of monetary policy (the thirties of last century), and so on, . This study analyses the driving factors of short-term international capital flows.

Fleming (1962) found that the exchange rate and price levels affect trade in retailers of international capital flows while Eichengreen and Fishlow (1998); Krueger and Yoo (2002) found that there were substantial inflows of international capital before a crisis in Mexico and other countries. The reason for this is national exchange rate of these countries is tied to the US dollar, making the exchange rate level relatively fixed. Therefore, investors ignore the existence of exchange rate risk, resulting in a large number of international capital flows into these countries. Lipschitz, Lane and Mourrnouras (2002) point out that the exchange rate of a country and its changing trends affect the flow of short-term international capital in their study of countries in transition in Central and Eastern Europe.

Zhou and Sornette (2006) analysed monthly data of international speculative capital inflows out of China between January 1999 and September 2006, and confirmed that the flow of international capital is determined by interest and exchange rates. Zhang and Fung (2007) constructed the triple arbitrage model of interest rate, exchange rate, and asset price. On this basis, using annual data from between 1996 and 2005, this study concludes that China's short-term international capital inflows are in addition to "arbitrage", but also for the "arbitrage" and "set price" of these two motives. Chen, Wang and Cheng (2009) used the ARDL-ECM model to test the relationship between the RMB exchange rate and China's short-term capital flows based on monthly data from January 1999 to June 2008, and concluded that the expected changes in the RMB exchange rate and the difference in interest rates are important influencing factors of short-term international capital flow.

Zhu and Liu (2010) reported short-term international capital inflows would lead to the appreciation of the RMB exchange rate, which would further influence inflow of short-term international capital. Fan, Morck, Xu and Yeung (2009) used the sample of monthly exchange rate data of China gathered between January 1999 and June 2008, and concluded that arbitrage for exchange rates or interest rates is the main motivation for short-term international capital inflows into China. Their study was based on a construction of a vector auto-regressive distribution hysteresis model. In recent years, scholars have studied the relationship between exchange rate marketisation and short-term international capital flow from the perspectives described below.

First, the relationship between exchange rate system and short-term international capital flows. Liu and Liu (2004) pointed out that, under the further opening of capital projects, China can only choose a managed floating exchange rate system. Further, Chinn and Ito (2006) analysed the impact of the reform of RMB exchange rate mechanisms on financial capital flow and trade capital flow, concluding that it would promote the inflow of short-term foreign capital. They also concluded with the RMB nominal exchange rate gradually edging closer to the real interest rate, the RMB exchange rate fluctuations in the dynamic adjustment is conducive to achieving China's international long-term balance of payments.

Wang (2015) concluded the relationship between the RMB exchange rate formation mechanism and the international capital flow is strong. Ding, Tse and Williams (2014) who analysed Malaysian "exchange reform", concluded that exchange reform is conducive to foreign exchange market price discovery. When the market exchange rate is close to the balance of the case, opening up capital accounts can minimise the devastating impact of capital speculation. Similarly, Dong et al. (2012) noted a certain degree of exchange rate flexibility is an effective instrument for resisting excessive short-term capital flow after the capital account is opened.

The second focus of modern scholars is the impact of RMB appreciation on short-term international capital flow after the exchange rate marketisation reforms. Maziad and Kang (2012) argued the exchange rate market-oriented reforms would lead to the further devaluation of the RMB. Jin et al. (2004) used the general equilibrium analysis, concluding that after the improvement of RMB exchange rate formation mechanisms, the appreciation of the RMB would have a certain attraction for short-term international capital flow. Shu, He and Cheng (2015) further posited the appreciation of the RMB is expected to attract short-term international capital into China's market arbitrage activities, and that when the flow surpasses a certain size, it would adversely affect China's macro-economics.

Most published empirical analysis in this area focused on the influence of exchange rates and the appreciation of the RMB on short-term international capital flow. However, the impact of exchange rate market reforms and exchange rate fluctuation on short-term international capital flow is analysed from a qualitative point of view, involving less empirical content. This study however, will construct a VAR model to analyse the impact of exchange rate and capital flow on short-term international capital flow. In addition, most studies in this area were conducted prior to 2010; this empirical analysis is not reflective of the impact of China's accelerated exchange rate market reform on short-term international capital flow. Therefore, the period of the present is between January 2006 and December 2015, using monthly data, in order to generate more accurate conclusions.

METHODS

For the purpose of this study, we first determined the choice of exchange rate variables and capital flow variables: the central parity of the RMB exchange rate, announced daily by the central bank. Capital Flows = Incremental Foreign Exchange Reserves - Current Trade Foreign direct investment (FDI). This data was obtained from Central Bank of China. Non-deliverable RMB Forward Rate- monthly data on the forward exchange rate between RMB and the US dollar is due in one year. This data also comes from Central Bank of China. Gross Domestic Product Growth - the monthly data of China's GDP growth rate comes from China's Statistical Office. China and the United States money market interest rate level difference was obtained from Central Bank of China. The scope of the study period is from January 2006 to December 2015, using monthly data. Since the VAR (Vector Autoregressive) model used in this study was based on its 1970 model, all the variables are regarded as endogenous variables. The initial model coefficient does not impose any constraints, that is, each equation has the same explanatory variable, which is the lagged value of all explanatory variables in a number of periods. The VAR model is a powerful analytical tool in economic analysis that involves multivariate and constrains that affect each other. Both the prediction and corresponding analysis of the pulse show great advantages. Therefore, in this study, the VAR model was selected to analyse the interaction between capital flow and exchange rates.

RESULTS

Step 1: Unit Root Test

The first step is to confirm stability of data, as the VAR model relies on this. Prior to this, the unit root test is used to verify the exchange rate of the RMB, the difference between the US and Chinese money markets (rgap), the NDF, the gross domestic product growth rate (GDP), and the stability of five-time series data of capital flow. In order to prevent the pseudo-regressions that may occur in time-series data after the stationary test, (if a non-stationary phenomenon occurs) the differential processing on the time-series data will be performed.

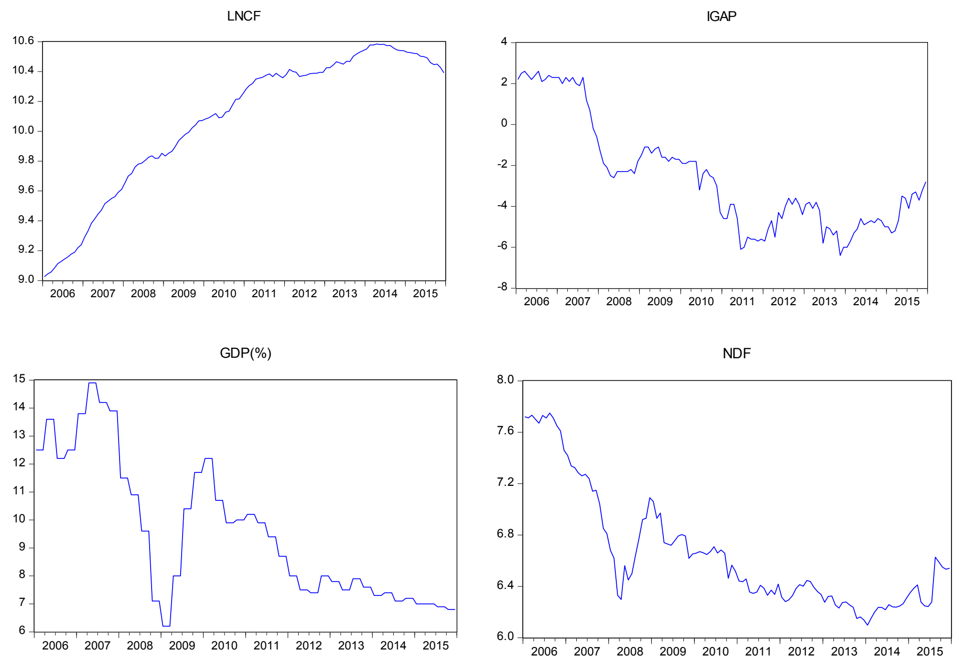

Figure 1. Graph of capital flow; Gap of interest rate; GDP growth; NDF

Table 1
P value of I (0) and I (1)

Variables	I (0)		I (1)	
	T-Statistics	P-Value	T-Statistics	P-Value
RGAP	-1.812816	0.3728	-11.18045	0.0000
lnRATE	-3.379162	0.0136	-2.436460	0.0041
lnNDF	-2.325910	0.1656	-10.22684	0.0045
lnGDP	-1.365056	0.5970	-4.633863	0.0002
CAPITAL FLOW	-1.856967	0.3516	-13.01571	0.0000

Step 2: Selection of Lag Order

Taking the AIC as the final selection criterion, this paper selected the lag order as the fourth order.

Table 2
Lag order

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-11.55675	NA	9.27e-07	0.298320	0.420371*	0.347832*
1	26.74421	72.46129	7.30e-07	0.058663	0.790968	0.355738
2	48.36461	38.95568	7.78e-07	0.119557	1.462117	0.664193
3	89.81608	70.95296	5.82e-07	-0.176866	1.775948	0.615333
4	126.3081	59.17618	4.80e-07*	-0.383929*	2.179140	0.655832
5	140.7560	22.12746	5.93e-07	-0.193802	2.979522	1.093522
6	174.3942	48.48758*	5.24e-07	-0.349446	3.434132	1.185440
7	195.7918	28.91564	5.85e-07	-0.284537	4.109296	1.497911
8	217.9529	27.95085	6.54e-07	-0.233385	4.770703	1.796626

Step 3: VAR Model Stability Verification

A unit root test was performed on the VAR model, and the reciprocal of the roots of all the models' characteristic equations were obtained. The sum of squares of each set of roots is less than one, which confirms the established VAR model is stable. This is shown in Figure 2, where the roots of the characteristic equation are within the unit circle.

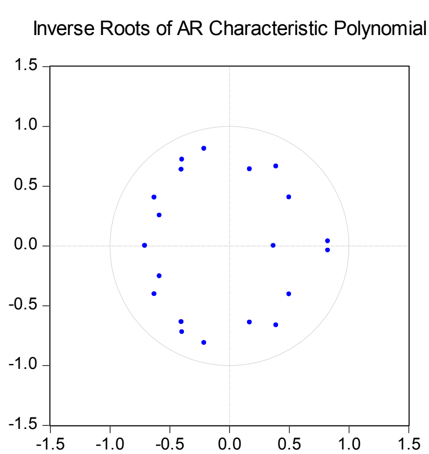

Figure 2. Inverse roots of AR characteristic polynomial

Step 4: Johansen Co-integration Test and Granger Causality Test Results

Table 3 and Table 4 contain the results of Johansen co-integration test and Granger causality test. From Table 3, it is seen that there are, at most, three co-integration relationships between these variables. The Granger causality test results of RMB capital flows can be seen from the Granger causality test of the flow of capital. If the joint test of exchange rate, exchange rate expectation, interest rate differential of China and US money market, and GDP growth rate are at 10%, the null hypothesis will be rejected. With regard to the Granger test, the fluctuation of capital flows is affected by fluctuation of the aforementioned factors, whereas the interest rate difference of the China and US money markets has a significant Granger effect on capital flow. The probability of exogenous fluctuations of RMB spot exchange rate fluctuations and the impact of NDF on the volatility of capital flow is 0.1815 and 0.3570 respectively, which indicates that the expected effect of RMB exchange rate on capital flows is weaker than that of the spot exchange rate. At the same time, the fluctuation of GDP growth rate has little effect on the fluctuation of capital flow.

Furthermore, the fluctuation of the central parity of the RMB exchange rate is affected by the fluctuation of the aforementioned factors, where the interest rate differential of the China-US money markets is also very significant for the central parity of the RMB exchange rate. In terms of the Granger influences, in particular the fluctuations in capital flow and NDF exchange rate fluctuations on the RMB exchange rate fluctuations, the impact of its exogenous fluctuations in the central parity of the RMB exchange rate is 0.4725 and 0.5983 respectively. Often, exchange rates are expected to have a strong guiding effect on the spot rate. However, the above empirical analysis shows that the fluctuation of the RMB non-deliverable forward exchange rate is not significant in terms of the Granger test of the RMB spot exchange rate causality. This phenomenon is likely to be related to China's RMB exchange rate regime, which is heavily regulated by Central Bank of China, as well as their intervention in the RMB spot exchange rate. It is likely that this leads to the disruption of the non-deliverable forward exchange rate to the spot rate of RMB exchange rate, making the fluctuations less affected by exchange rate volatility. The GDP growth rate fluctuations, in the Granger test, have little effect on the central parity of the RMB exchange rate fluctuations.

Table 3
Unrestricted co-integration rank test (maximum eigenvalue)

Hypothesised No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.263892	107.0214	69.81889	0.0000
At most 1 *	0.229386	72.70698	47.85613	0.0001
At most 2 *	0.213013	43.52337	29.79707	0.0007
At most 3 *	0.120351	16.69456	15.49471	0.0328
At most 4 *	0.020611	2.332524	3.841466	0.1267

Max-eigenvalue test indicates 4 co-integrating eqn(s) at the 0.05 level
*denotes rejection of the hypothesis at the 0.05 level

Table 4
Granger causality test results

Dependent variable: DCAPITALFLOW			
Excluded	Chi-sq	df	Prob.
DLNGDP	3.390276	4	0.4948
DLNNDF	4.380434	4	0.3570
DLNRATE	6.245557	4	0.1815
DRGAP	15.34168	4	0.0040
All	24.01770	16	0.0891
Dependent variable: DLNRATE			
DCAPITALFLOW	3.535579	4	0.4725
DLNGDP	2.713329	4	0.6069
DLNNDF	2.762805	4	0.5983
DRGAP	21.47943	4	0.0003
All	27.51993	16	0.0361

Step 5: Impulse Response Function

The depreciation of spot exchange rate (using the direct quotation method of RMB exchange rate) will bring about a positive impact on capital flow in the second period. This was analysed from two perspectives, first, from the interest parity perspective. In this respect, the exchange rate remains the same and the domestic asset rate of return to attract arbitrage capital inflows positively affects capital flow. Second, the current exchange rate changes on the impact of capital flows did not show any peak between current period and the second period. There is a certain time lag effect with capital accounts, indicating the need for investors to have time to respond. From both short and long-term perspectives, the impact of spot exchange rate on capital flow is both positive and negative. After combining the two, there are no significant trends to be noted.

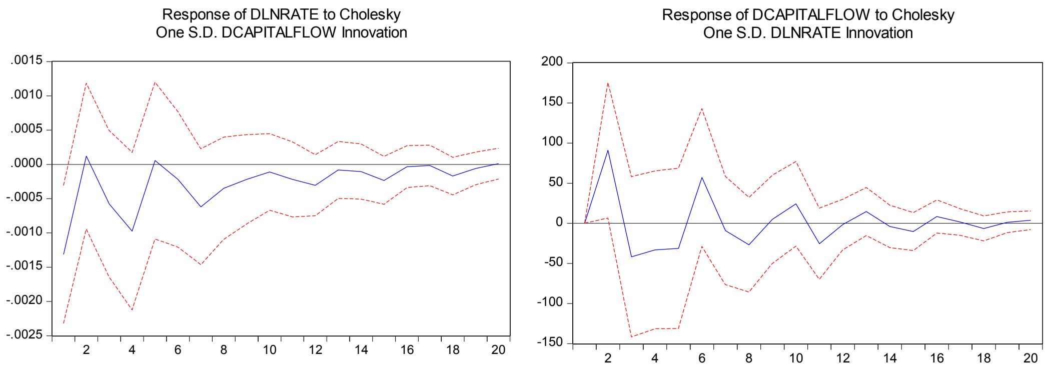

Figure 3. Response of D-capital flow and D-lnrate

Innovation

As shown in Figure 3, the positive impact of capital flows has a negative impact on the expected RMB exchange rate, which is expected to cause the exchange rate to appreciate. The impact of the peak in the first period indicates that the impact of capital flow on the RMB exchange rate is expected to come about quickly. Additionally, the impact of rapid reduction result in the small fluctuations that stabilise to 12.

Step 6: Variance Decomposition Results

Variance decomposition is an analysis of the impact of each structure on the contribution of capital flow, focusing on the relative importance of the central parity of RMB and an expected impact of exchange rate movements on capital flow. Since the variance analysis results for capital flow stabilised after the 20th period, the variance decomposition results for the period of up to 20 are shown in Table 5. From Table 5, it can be seen that capital flow is affected by the impact of its own large impact; the first phase of 100%, with a decline evident in the second phase, with ultimate stabilisation at ~81%. The contribution rate of the change of RMB exchange rate (NDF) is only 0.24% and 0.75% in the second and third phases respectively, with an increase to 1.3% in the third period, and a final rise to 1.4%. Overall, the expected change in the RMB exchange rate has little effect on capital flow. While there is a significant lag effect, the impact of delay is about one quarter (3 to 4 months). The impact of the rate of change in RMB exchange rate on the rate of change in capital flows in the second phase of the contribution rate is 3.04%. This slowly increased over time, ultimately stabilising at ~5.46%. This indicates that the central parity of RMB changes have a certain impact on capital flows. This explains the 5% in capital flow changes.

Table 5
Variance decomposition results

Variance: D- CAPITAL FLOW						
Period	S.E.	DCAPITALFLOW	DLNGDP	DLNNDF	DLNRATE	DRGAP
1	415.4148	100.0000	0.000000	0.000000	0.000000	0.000000
5	545.3138	87.55357	3.992377	1.290649	4.073214	3.090191
10	569.7330	81.95004	4.395476	1.387018	5.172065	7.095400
15	571.8761	81.45573	4.480473	1.400167	5.434944	7.228684
20	572.2444	81.39001	4.513178	1.401789	5.468192	7.226825
Variance: D- LN RATE						
1	415.4148	5.762955	0.023665	25.65204	68.56134	0.000000
5	545.3138	6.935890	1.085839	22.06604	56.68268	13.22955
10	569.7330	7.661359	1.680935	22.10858	54.95233	13.59680
15	571.8761	7.837728	1.877277	21.91727	54.59253	13.77519
20	572.2444	7.870695	1.917147	21.96802	54.45325	13.79088

From the result of the variance decomposition of RMB central parity, it can be seen that capital flow fluctuation has a certain impact on the RMB central parity. The first phase of the impact equalled ~5.76%, which gradually increased over time, ultimately stabilising at 7.8%. This 7.8% of the RMB exchange rate changes in the central rate of capital flows can be explained by those changes. At the same time, the RMB exchange rate expectations (NDF) also has an impact on the RMB central parity changes. This effect explains more than 20% of the changes, indicating that the fluctuation of the RMB central parity and forward exchange rate fluctuations are more consistent.

CONCLUSION

This research has shown the spot rate of RMB is less affected by fluctuation than by the other factors, mainly due to the regulation of Central Bank in China. This also proves that the intervention of the PBOC on the spot exchange rate is effective, but the frequent exchange rate intervention will likely place great pressure on the Central Bank (with regard to base money supply and foreign exchange reserve passive volatility). Therefore, policy recommendations continue to gradually push market-oriented reform of the exchange rate, as the market has become the subject of RMB exchange rate volatility. There is still a strong expected guidance effect on market participants in the spot exchange rate changes. This research can be used in the development of policy, utilising the effects explained above to manipulate the spot exchange rate to achieve stability.

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The Effect of Tax Aggressiveness on Debt Policy with Independent Board as Moderating Variable

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ABSTRACT

This research aims to examine the effect of tax aggressiveness and independent boards on debt policy as well as the effect of independent boards as a moderating variable on the effect of tax aggressiveness on debt policy. The sample of this research is 632 non-financial firms listed on the Indonesian Stock Exchange between 2010 and 2015. The result of this research shows that tax aggressiveness has no effect on debt policy. It also shows that tax implications do not have an influence on the financing decisions of the company. Independent boards however have a positive effect on debt policy. This means that control of an independent board will increase if the company has high levels of debt. An independent board does not moderate the effect of tax aggressiveness on debt policy. When the companies requested approval for financing, the board did not consider the tax implications. Therefore, it can be concluded that an independent board has no impact on the decision-making process of company financing, particularly relating to tax aggressiveness. Seven controlled variables were used in this research; two of them have a positive effect on debt policy, one showed a negative effect while the rest have no effect on debt policy.

Keywords: Company financing , debt policy, independent board, Indonesian stock exchange, tax aggressiveness

INTRODUCTION

Financial decisions are one of the most important decisions made by a company. There are two sources of finances - internal and external. Some examples of external sources of finance include debt policy and equity raising. Debt financing is often preferred over equity raising because it has a lower cost and is more effective at reducing inter-agency conflict. Debt is categorised by a company as part of its financial risk as it is an ongoing liability that

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is not affected or reduced by the company being in a good financial situation. If the company decides not to use the debt, or the financing is done internally, the company will have no obligation to pay the debt. When making debt financing decisions, a company is limited in how much it can borrow, based on the benefits that can be obtained from the debt. The ratio of debt should not be exceeded and if it is based on this standard, then the borrowing capability will increase rapidly, and this will affect the company's capital structure (Indahningrum & Handayani, 2009).

Companies that rely on debt will increase face increasing interests which raises the likelihood that a company will face a default, whereby it cannot fulfil its debt obligations on time. However, if the company only uses its own capital (retained earnings) this will limit the opportunity to generate a larger profit. It is therefore necessary to determine the optimal amount of debt a company can incur (and the benefits obtained from doing so) in relation to the cost to be paid (Ryzkiria, 2014). Agency conflict refers to conflict between managers and owners of a company (Jensen & Meckling, 1976). Based on earlier research by Richardson et al. (2014), there are several variables that influence debt policy, namely tax aggressiveness and the existence of an independent board. Tax aggressiveness refers to minimising the tax to be paid by a company by maximising on certain loopholes contained within the tax regulations. In this case, higher levels of tax aggressiveness will increase the amount of debt that can be incurred by the company. A higher debt increases the interest that needs to be paid by the company. Tax aggressiveness may come from within the company itself, whereby the company has rules regulating the internal supervision of management. The role of an independent board is important to prevent the manipulation of financial reporting. Independent boards can supervise the performance of management because they do not have vested interests in the company. An independent board can assist in preventing tax aggressive procedures within the company. Based on this, the research questions are: (1) does tax aggressiveness affect debt policy? (2) does an independent board affect debt policy? (3) does an independent board moderate the effect of tax aggressiveness on debt policy?

LITERATURE REVIEW

Pecking Order Theory

According to Gitman and Zutter (2015), Pecking Order Theory refers to the hierarchy of financing that starts with retained earnings, debt and finally equity. This hierarchy is based on the lowest risk. Keown, Martin, Petty and Scott (2005) state that internal financing is preferable than external financing. Pecking Order Theory argues that a company's financing structure follows a hierarchy based on a sequence of risks, starting from the cheapest source of funds, internal funds, to stocks that are the last source of funding (Myers & Majluf, 1984). This is consistent with the findings of Indahningrum and Handayani (2009).

When viewed from the Pecking Order Theory, it is clear a company needs new capital to finance its investment. A financial manager adheres to two important rules when determining the source of corporate financing - use of internal corporate sources and issue securities first. External financing is sourced only if internal financing measures do not generate sufficient income. It is the responsibility of the manager to minimise problems and costs arising from debt financing.

Agency Theory

According to Godfery, Hodgson, Tarca, Hamilton and Holmes (2010), in Agency Theory, the management of a company is the agent and the investors are the principal. Agents and principals have different interests. This difference often creates agency conflicts. According to Jensen and Meckling (1976), agency relationships are defined as a contract between one or more persons, in this case it is the owner and the managers who work for the owners. As a result, managers sometimes work against the wishes of the owners. Jensen and Meckling (1976) argue that agency conflict is divided into two types. Type 1 is the conflict between shareholders and managers, that arise when managers make self-profitable policies that largely ignore the interests of shareholders. Type 2 is the conflict between the majority shareholders and the minority shareholders. The majority shareholder holds the rights to the company and as a result, they often make self-profitable policies that ignore the interests of minority shareholders.

Trade-off Theory

According to Arilyn (2016), the manipulation of a company's capital structure is not able to change the value of the firm. The Trade-off Theory states that increasing the use of debt will increase the value of the company, but only to a certain extent. After that limit is reached, the use of debt will begin to lower the value of the company because the increase in profits from the use of debt is not comparable with the increase in financial distress. Financial distress is a condition where a company experiences financial difficulties and faces the potential of bankruptcy. If a company goes into bankruptcy, they will incur certain bankruptcy costs as a result of the sale of assets below the IR market price. In other words, there is a trade-off which needs to be measured against the benefits of using debt financing (Arilyn, 2016). The trade-off theory explains the optimal corporate capital structure as the balance between tax benefits and bankruptcy costs (Surya & Rahayuningsih, 2012). As long as the benefits of using debt are greater, using additional debt is allowable. However, once the benefits of using debt are outweighed by negative consequences, the use of debt should be reduced or ceased altogether. In order to establish an equilibrium, the company must look for debt levels where the costs incurred are offset by profits generated or the tax benefits generated (Karadeniz, Yilmaz, Balcilar, & Beyazit, 2009).

Debt Policy

Most companies will require finance in order to meet its operational needs. Debt refers to the financial obligations of a company to other parties that have not been fulfilled. This debt is considered an external funding source. Company-owned debt can be divided into two parts: current debt and long-term debt. Current debt, or short-term debt, is financial obligations of the company that are discharged in the short term using assets owned by the company. Long-term debt refers to financial obligations of the company with a repayment term of more than one year.

Debt policy is created by management in order to meet the financing needs of the company. The funding policy is one of the important decisions in determining the amount of funding that a company needs. Gitman (2000) argues that short-term debt is better when compared to long-term investments. The latter type of funding certainly has an impact on the company's capital structure and the company's capital structure will have a major impact on the value of a company. To determine the structure of a company's capital requires a detailed analysis such as determining the proportions of debt and equity held by the company. The more sophisticated the capital structure of an enterprise, the better the value of the firm. A higher company value will also maximise shareholder value.

Capital structure is strongly influenced by the company's external sources of funding, obtained from the internal structures of the company. If a company has insufficient funding, its shareholders will usually prefer to engage in debt financing. This type of financing does not reduce shareholders' rights or control over the company. However, company managers do not favour debt financing because it carries a high risk. Management often aims to maximise profits and reduce the outgoings of the company (Indahningrum & Handayani, 2009). In contrast to this, the use of debt increases the risk of the company (Destriana, 2010).

Tax Aggressiveness

Tax aggressiveness is the action of decreasing the tax paid by a company. It can be both legal and illegal. Legal tax aggressiveness refers to taking advantage of loopholes in the tax regulations and illegal tax aggressiveness refers to tax avoidance measures. The main purpose of tax aggressiveness is to reduce the tax paid by the company. The form of tax aggressiveness used in this study refers to when the company's management minimises the value of taxable profits using debt reductions (non-debt tax shield). This can also be legal or illegal. Richardson, Lanis and Leung (2014) found tax aggressiveness can reduce the value of debt. Tax aggressive measures used in this study refers to the actions of management to reduce taxable profits.

Independent Board

Independent boards are also regulated in the Financial Services Authority Regulation No. 33 of 2014 in Article 20 paragraph (2) (Government of Indonesia, 2014) which states that, in the case where the board of commissioners consists of 2 (two) or more members, 1 (one) of them must be an independent commissioner. Paragraph (3) of the same article states the board should consist of at least 30% independent commissioners. Further, article 21 of the Financial Services Authority Regulation No. 33 of 2014 states that an independent commissioner must meet the following requirements:

(1) They must not be a person who is employed or has not had the authority and responsibility to plan, direct, control or supervise the activities of the issuer or public company within the last 6 (six) months, except in the case of re-appointment as an independent commissioner of the issuer or public company in the following period;

(2) They must not hold shares directly or indirectly in the issuer or public company;

(3) They must not have an affiliation or other relationship with the issuer or public company, be a member of the board of commissioners, be a member of the board of directors, or major shareholder of the issuer or public company; and

(4) They must have no direct or indirect business relationship relating to the business activities of the issuer or public company.

Under the Rules of the Financial Services Authority, the above requirements shall be met during the term of office.

HYPOTHESIS

Tax Aggressiveness and Debt Policy

Tax aggressiveness is an attempt by the company to reduce its taxes. Tax aggressiveness is divided into two forms. The first is to minimise the tax burden by exploiting loopholes within tax laws. The second is to avoid the tax burden that should be paid by the company. In this case, higher levels of tax aggressiveness can increase the debt taken by a company. Richardson et al. (2014) theorises that non-debt tax shields include depreciation as substitutes for debt (interest) deductions. Graham and Tucker (2006) observe that tax shelters can be a substitute for debt tax shields (interest deductions). They also conclude that tax-aggressive firms use less debt than non-tax-aggressive firms. A company's debt will also be reduced when a company engages in tax aggressiveness. It is also attractive to firms because of the high corporate profit. Graham and Tucker (2006) also state that tax aggressiveness has a negative effect on debt policy.

Ha_1: Tax aggressiveness has a negative effect on debt policy.

Independent Board and Debt Policy

Harford et al. (2008) states that corporate debt plays an important role in monitoring management, and thus in reducing agency costs. Accordingly, the positive influence between independent boards and debt policy reflects that the higher the proportion of independent board members, the higher the debt of a company. This is because the investors want to protect themselves by increasing the company's debt. The higher the company's debt, the higher the levels of supervision within the company. In accordance with the Pecking Order Theory, the decision to use either debt or equity financing should begin with the lowest risk and cost-efficient choice. Therefore, an independent board will be more likely to approve debt financing because it has a lower risk than equity and will not reduce the control of the shareholders in the company.

Ha_2: The proportion of independent board members has a positive effect on debt policy.

In using tax aggressiveness, a company is trying to maximise their profit. Profit generated by the company will increase the bonus received by its members. Reducing the tax paid by the company will increase the company's profits. According to Fama and Jensen (1983); Richardson et al. (2014), independent board members can provide advice on the company's capital structure without the influence of others. Based on this theory, it can be hypothesised that the proportion of independent board members strengthens the influence of tax aggressiveness on debt policy.

Ha_3: The proportion of independent board members strengthens the influence of taxation aggressiveness on debt policy.

METHODS

The population used in this research are non-financial companies listed on the Indonesian Stock Exchange between 2010 and 2015. The sample selection techniques used in this research is the purposive sampling method. The respondents in this research are 632 companies. To test the hypotheses, a multiple regression method is used.

Research Framework

Based on the research objectives, the effect of tax aggressiveness and the proportion of independent board members on debt policy as well as the proportion of independent board members as moderating variable are examined. The controlled variables in this model are the median of debt ratio, operating income, size, depreciation and amortisation, fixed assets, growth and age.

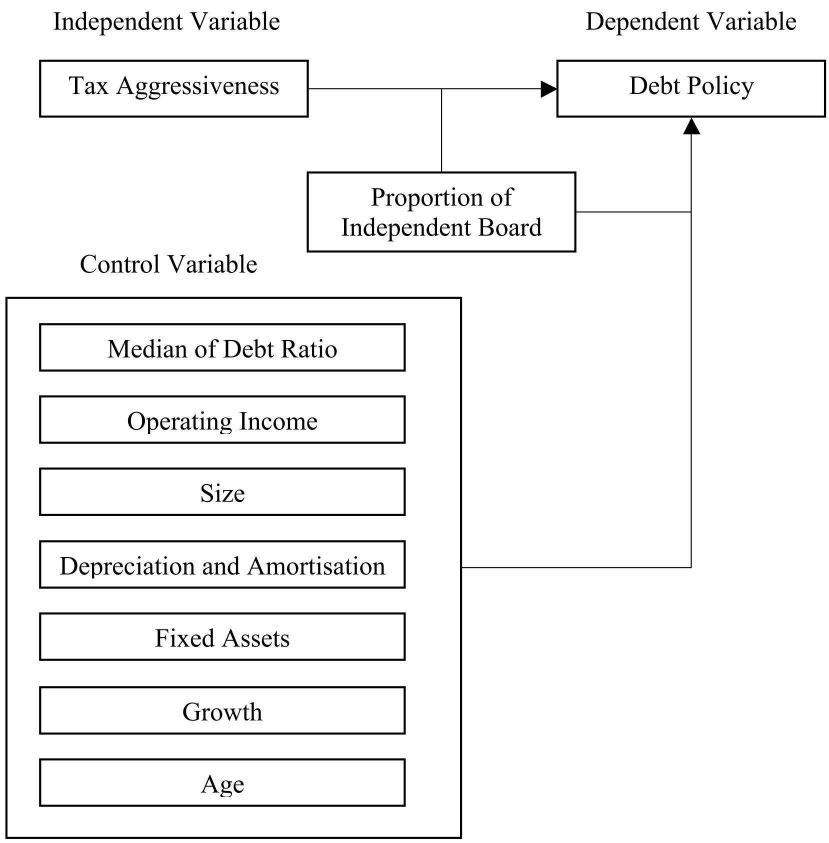

Figure 1. Research framework

Research Model

The research model is an adaptation of Richardson et al. (2014) with some modifications relating to the controlled variables. The regression models use the following equation:

DEBT it = α0 + β1TAGit + β2MEDit + β3OIit + β4Sizeait + β5DEPit + β6FAit + β7GROWTHit + β8AGEit + ε it

The second model examines the relationship between the proportion of independent directors and the company's debt policy, while a third hypothesis tests whether the proportion of independent directors strengthens the relationship between aggressiveness of tax and debt policy of the company. The research model used is as follows:

DEBT it = αo + β1TAGit + β2INDCOMMit + β3INDCOMM * TAG it + β4MEDit + β5OIit + β6SIZEit + β7DEPit + β8FAit + β9GROWTHit + β10AGEit + ε it

Description of symbols in the research model:

DEBT	Debt ratio of the company
TAG	Tax aggressiveness
INDCOMM	The proportion of independent board
MED	Median of debt ratio
OI	Operating income
SIZE	Size of the company
DEP	Depreciation and amortisation
FA	Fixed assets
GROWTH	Growth of the company
AGE	Age of the company

RESULTS

The descriptive statistic and hypothesis results are shown in Table 1 and Table 2 below.

Table 1
Descriptive statistic

Variable	N	Minimum	Maximum	Mean	Standard Deviation
DEBT	632	0.0656	2.1432	0.4450	0.1992
CETR	632	0.0017	2.2682	0.3490	0.2978
INDCOMM	632	0.1666	0.8000	0.4055	0.1069
MED	632	0.1013	1.7580	0.4593	0.1503
OI	632	-0.1898	0.7105	0.1305	0.1126
LnA	632	19.5534	26.2138	22.5664	1.224
DEP	632	0.0010	1.1013	0.0563	0.0716
FA	632	0.0020	2.5517	0.6239	0.3598
GROWTH	632	0.4379	4.2436	1.2284	0.3220
AGE	632	1	156	33.71	22.297

Table 2
Hypothesis result (Model 1)

Variable	Coefficients	t-statistic	Sig
Constanta	0.108	0.750	0.453
CETR	0.044	1.749	0.181
MED	0.619	12.345	0.000***
OI	0.117	1.764	0.078*
LnA	0.000	-0.024	0.981
DEP	0.120	1.031	0.303
FA	-0.073	-3.109	0.002***
GROWTH	0.022	0.974	0.330
AGE	0.000	0.585	0.558

Table 3
Hypothesis result (Model 2)

Variable	Coefficients	t-statistic	Sig
Coefficient	t-statistic	Sig	0.453
Constant	0.001	0.005	0.996
CETR	0.192	1.875	0.161
INDCOMM	0.338	2.150	0.032**
CETR*INDCOMM	-0.335	-1.382	0.168

DISCUSSION

Table 2 shows that tax aggressiveness has no effect on debt policy. It also indicates tax implications do not have an influence on the financing decisions of the company. The variable median of debt ratio, operating income, has a positive effect on debt policy and fixed assets has a negative effect on debt policy. If the median of industry debt ratio increases, the debt will increase. Median of debt ratio is dependent on the type of industry of the company. A high income will increase the debt of the company because the taxes will be high as well. The company will then use the interest paid as a tax saving strategy. The higher the debt of a company, the higher the cost of interest expenses, which is one of the factors considered when claiming tax deductions. High debt is also one of the best ways to prevent losing control of the company. The negative effect of fixed assets on debt policy means that the company does not require other forms of financing because it has large assets. The other variables, such as size, depreciation and amortization, growth and age have no effect on debt policy.

Table 3 shows that the proportion of independent board members has a positive effect on debt policy. This means that control of an independent board will increase if the company has high levels of debt. Higher company debt will also increase the supervision within the company. The proportion of independent board members does not moderate effect of tax aggressiveness on debt policy. When companies requested approval for financing, the board did not consider the tax implications. Therefore, it can be concluded that an independent board has no impact on the decision-making process of company financing, particularly relating to tax aggressiveness.

CONCLUSION

This research has shown first, tax aggressiveness has no effect on debt policy, second, the proportion of independent board members has a positive effect on debt policy and third, the proportion of independent board members does not moderate the effect of tax aggressiveness on debt policy. Seven controlled variables were used in this research; two of them had a positive effect on debt policy, one showed a negative effect while the rest had no effect on debt policy.

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Moderating Effect of Audit Probability on the Relationship between Tax Knowledge and Goods and Services Tax (GST) Compliance in Malaysia

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ABSTRACT

On 1st April 2017 was the second year Goods and Services Tax (GST) in Malaysia was implemented. Though Royal Malaysian Customs Department (RMCD) has recorded good tax collection, the signs of non-compliance have increased. Using the Responsive Regulation Theory, this study investigates audit probability and tax knowledge determination on GST compliance among businesses in Malaysia. In order to do this, a survey was conducted from April 2016 until the end of August 2016 and the Respondents were business operators registered with RMCD, under the GST System. The results show that both audit probability and tax knowledge contribute significantly to the compliance level among businesses. These findings are important for tax regulators (RMCD specifically) in promoting tax knowledge through continuous programmes and workshops, as GST is still at an early stage of implementation.

Keywords: Audit probability, Goods and Services Tax, Goods and Services Tax compliance, moderating effect, tax knowledge

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INTRODUCTION

Goods and Services Tax (GST) has been implemented in Malaysia for about two years. In the first year of its implementation, the government saw a high compliance rate of more than 90%. However, it slowly declined as the Royal Malaysian Customs Department (RMCD) began to meticulously check transactions and noticed that the 90% compliance rate reported was only based on submissions of tax returns. It did not consider other aspects of GST implementations, such as transaction disclosure, GST payment, input on tax credit refund and so on. Hence, it is important to find out how to achieve compliance among taxable entities, factors contributing to their tax-paying behaviour, and how to improve compliance among them.

Factors that need to be considered include attitude of tax payers, tax rate, cost of living, trust in the government, as well as audit and tax knowledge. Theory of Responsive Regulation has shown that self-regulation and enforced regulation from regulators enhance compliance level but this may not be possible in developing countries which have limited regulatory capacity (Braithwaite, 2006).

Individuals in developed countries have high reading aptitude which means they gain more knowledge than those from emerging countries (Annamalai & Muniandy, 2013). Audit help improves level of compliance in Malaysia. Hence, this study investigates the relationship between GST knowledge and GST compliance with the interaction of audit by RMCD.

CONCEPTUAL DISCUSSION AND HYPOTHESIS DEVELOPMENT

Goods and Services Tax Compliance

The GST compliance can be defined as taxpayers' readiness to obey all the rules and regulation with regards to GST, declare an accurate amount of tax, and hand over tax payments to the tax officer before the due dates (Palil & Mustapha, 2011). It is widely used by many tax organisations such as the Internal Revenue Service (IRS) USA, the Australia Tax Office (ATO), and Inland Revenue Board of Malaysia (IRBM). As part of a self-assessment system, GST requires taxable businesses to submit their own tax assessment before the due date as a part of their obligations under the Goods and Services Tax Act (Isa & Pope, 2011).

Non-compliance among taxable persons may lead to tax evasion or tax fraud (Yusof, Ling, & Wah, 2014). Tax evasion may be defined as an intended misrepresentation of material fact created by a person or business with the purposes of avoiding a tax (McLisky, 2011; Ritsatos, 2014). Therefore, tax compliance will always be an area of concern for the government and policy makers (Loo, Evans, & McKerchar, 2010; Mohd Isa, 2012). Tax compliance is important to sustain a high level of tax collection in order to achieve government's fiscal and social development (Sanusi, Noor, Omar, Sanusi, & Alias, 2016). Benk, Budak, Yüzba and Mohdali (2016); Isa (2014);

Palil (2010) highlighted the importance of tax compliance in Malaysia and have noticed that tax compliance is a main concern for the government as it affects revenue collection.

Goods and Services Tax Knowledge

A taxable person's knowledge is usually positively related to compliance (Muehlbacher, Kirchler, & Schwarzenberger, 2011). Tax knowledge has a negative relationship with tax evasion. A taxable person's behaviour is affected by his or her level of education (Brindusa & Constantin, 2015). Basic education, qualification, and training attended by GST preparers and managers in understanding the GST Act will help improve compliance (Palil, 2010). Several studies have highlighted a positive relationship between knowledge and tax compliance (Nor, Ahmad, & Saleh, 2010; Palil, 2010; Yusof et al., 2014).

Saad (2014) examined 30 taxpayers' views on tax knowledge and perceived complexity of the income tax system in New Zealand. Data was gathered through interviews and analysed using thematic analysis. She found that taxpayers have inadequate technical knowledge and this has led to non-compliance among them.

The results from the abovementioned studies shows a positive relationship between tax knowledge and tax compliance; however, these results are inconsistent with that of Harris (1989) and a current study by Fauziati, Minovia, Muslim and Nasrah (2016). Both studies indicate that there is no relationship between tax knowledge and compliance. Difference in tax jurisdictions and different measurement used can cause inconsistency in the results. Therefore, it is hypothesised that:

H1. The impact of tax knowledge on Goods and Services Tax is positive.

Audit Probability

An audit is an important activity handled by RMCD to ensure that taxable persons comply with all rules and regulations related to GST, assure that GST collection is accurate, and mitigate occasions of irregularities and GST fraud. Joulfaian (2000); Palil (2010); Yusof et al. (2014) in their studies claimed that tax compliance is positively related to the probability of being audited. Since GST is new in Malaysia, tax auditors should use tax audit as an avenue to educate and assist taxpayers in tax compliance (Yusof et al., 2014). Desk and field audits are regular audits conducted by the customs department. While desk audit is performed at the customs office by referring to a taxpayer's file field audit is an on-site inspection by customs officers who will inspect the taxpayer's office. The compliance level might improve through frequent audits by tax auditors (Gómez & Mironov, 2015). Hence, taxpayers will be more aware of their actions.

Alm and Mckee (2006) using experimental methods with regards to individuals' response to their tax compliance, explain that audit plays an important role in their decision making. They used humans as subjects in a controlled laboratory environment. The subjects have to decide how much income given in the experiment shall be reported to a tax agency. The design had addressed the varying prior information concerning audit probabilities and by varying the output of the audit to the subjects. Some individuals were informed that their returns would be audited and while some would not be. The researchers found that the announcement of audit increased the compliance rate among those who were told that they would be audited and vice versa. The findings also indicated increased audit effectiveness when the subjects expect to be audited. In this regard, it is hypothesised that:

H2. The impact of audit probability on Goods and Services Tax is positive.

Maciejovsky, Kirchler and Schwarzenberger (2007) believed that an audit would may influence taxpayer's intention to avoid tax. It may happen when an audit fails to detect any non-compliance issues. Or taxpayers assume that auditors will only perform a one-off audit. Therefore, it is hypothesised that:

H3. The association between tax knowledge and GST compliance is more significant when the audit probability from RMCD is high.

METHODS

This research employed a survey questionnaire method and duration of study was from April 2016 until the end of August 2016. Respondents were business operators who are registered with RMCD, under the GST System. They were required to answer the questions using the Likert scale of 7, which ranges from 1 for strongly disagree to 7 for strongly agree. The questionnaire items were adapted from Mohd Isa (2012) as well as from the Attitude and Behaviour-Tax and Compliance Ireland for 2013. The actual data was analysed using IBM's Statistical Package for Social Science (SPSS) for a descriptive analysis and Smart PLS for an inferential analysis. The research has performed the bootstrap resampling method with 5000 iterations of resampling and $p<0.05$ to obtain the results for the hypotheses.

DATA ANALYSIS AND RESULTS

A total of 404 responses were received from the 1200 surveys distributed. The response rate is about 31.7%. Based on the initial expectation of 384 responses (Sekaran & Bougie, 2011) from the total sample, the number of respondents should be adequate to proceed with the descriptive and inferential analyses. However, only 379 samples were available for further analysis after some cleaning process.

Descriptive Analysis

More than half (62.8 %) of the companies were medium in size, 29.6% were small, and 7.7% were micro. Most of the companies' yearly income were above RM3 million, 8.7% with income below RM500, 000, and 30.3% within the range of RM500, 000 to RM3.0 million. Almost half of the companies (47%) were in the industry for less than 15 years. About 37.3 % of them were between 16 and 30 years, 14% between 31 and 60 years, and only a handful of companies (1.3%) have been in operation for more than 60 years (4.3%). Two thirds (60.4%) of the respondents were female. Among them, close to one third were below 30 years old (26.9%), another one third (37.7%) were aged between 31 to 40 years, and the rest were 41 years and above. Table 1.0 shows details of respondents for the study.

Table 1
Respondents' details

			Frequency	Percentage (%)
1.	Company period	Less than 15 years	178	47
		16 to 30 years	143	37.7
		31 to 45 years	37	9.8
		46 to 60 years	16	4.2
		More than 60 years	5	1.3
2.	Yearly turnover	below RM300k	33	8.7
		RM300,001 to RM500k	55	14.5
		RM500,001 to RM3M	115	30.3
		RM3,000,001 and above	176	46.4
3.	Gender	Male	150	39.6
		Female	229	60.4
4.	Age	Below 30	102	26.9
		31to 40	143	37.7
		41 to 50	96	25.3
		Above 50	38	10
	Total		379	100

Measurement Model

The measurement model was assessed for convergent validity and discriminant validity (Djajadikerta, Roni, & Trireksani, 2015; Hair, Hult, Ringle, & Sarstedt, 2014). As shown in Table 2.0, all items possess loading above the recommended value of 0.6 (Chin & Newsted, 1999) while each construct's Cronbach's alpha and composite reliability is greater than 0.7. The average variance extracted is also above the minimum acceptable value of 0.5 (Henseler, Ringle, & Sinkovics, 2009), which indicates sufficient convergent validity that a latent variable is able to explain more than half of the variance of its indicators on average.

The discriminant validity was analysed using Fornell-Lacker criteria. Table 3.0 contains the square roots of the AVE in bold along the diagonal, verifying the condition of being greater than the correlation between constructs (Fornell & Larcker, 1981). The measurement model results indicate that the model has good reliability and validity to proceed with the structural model test.

Table 2
Convergent validity

Construct	Item	Loading	Composite Reliability	Average Variance Extracted	Cronbach Alpha
Audit probability	AC1	0.624	0.932	0.634	0.916
	AC2	0.742			
	AC3	0.819			
	AC4	0.838			
	AI1	0.884			
	AI2	0.839			
	AI3	0.773			
	AI4	0.820			
GST Compliance	CD1	0.846	0.955	0.640	0.947
	CD2	0.859			
	CD3	0.900			
	CD4	0.835			
	CR1	0.805			
	CR2	0.878			
	CR3	0.767			
	CS1	0.614			
	CS2	0.771			
	CS3	0.788			
GST Knowledge	KK1	0.830	0.933	0.584	0.92
	KK2	0.857			
	KK3	0.679			
	KK4	0.827			
	KK5	0.841			

Table 3
Discriminant validity

Construct	1	2	3
Audit probability (1)	0.796		
GST Compliance (2)	0.414	0.800	
GST Knowledge (3)	0.456	0.681	0.764

Structural Model and Hypothesis Testing

The analysis of constructs relationships was based on the examination of a standardised path. The path's significance level was estimated using the bootstrap resampling method with 5000 iterations of resampling (Becker & Ismail, 2016). The results are summarised in Table 4.0. The result shows no potential of multicollinearity in the model as the variance inflation factor (VIF) value is less than the stringent threshold of 3.3 (Diamantopoulos, 2009). On the other hand, the effect size of the predictor construct indicates f2 value of 0.586 which is considered a large effect size (Cohen,1992).

The model explains 47.5% of variation in GST compliance which indicates a substantial mod. Both tax knowledge and audit probability were found to be statistically significant in explaining GST compliance with $p<0.05$, thus supporting hypotheses H1 and H2. The moderating effect of audit probability was also found to be statistically significant with T value of 3.530, thus supporting hypothesis H3.

Table 4
Structural model and hypothesis testing

Hypothesis	Description	Path coefficient	VIF	T value	P value	R square	F square	Decision
H1	Audit probability -> GST Compliance	0.158	1.323	3.751	0.000			Supported
H2	GST Knowledge -> GST Compliance	0.578	1.405	12.115	0.000	0.475	0.586	Supported
H3	AP*GTK -> GST Compliance	-0.091		3.530	0.000			Supported

DISCUSSION

The structural model evidences a causal relationship between audit probability and tax knowledge on GST compliance, with an R-squared value of 47.5%. This value explains that there is a 47.5% variation of the two independent variables in GST compliance behaviour. Significant T-values of 3.751, 12.115, and 3.530 for each variable support the hypotheses generated from the study. Hence, the findings support H1, H2 and H3 of the research.

The research model validates two direct relationships of variables on GST compliance, namely audit probability and tax knowledge. The findings of H1 are consistent with those of earlier studies (Bidin & Marimuthu, 2014; Brindusa & Constantin, 2015). On the other hand, the findings of H2 also support those of previous studies on the effects of audit on tax compliance (Bătrâncea, Nichita, & Bătrâncea, 2012; Yusof et al., 2014), which would increase the compliance level among taxable individuals. The compliance level among low knowledgeable persons may improve by imposing thorough audits on them, which supports H3.

CONCLUSION

This study focused on factors affecting GST compliance among taxable entities in Malaysia. Generally, the study affirms the applicability of the Responsive Regulation Theory which is widely accepted in developed countries. For example, the Australian Taxation Officers has adopted this theory as a guideline in their compliance programmes. However, this theory was seldom used in developing and third world countries like Malaysia. Hence, audit and tax knowledge are important in ensuring and increasing level of compliance among taxable businesses. The study also contributes to the literature in terms of analysis used. Previous studies use SPSS software to analysis data. Due to advancement of technology, the present study attempted to extend the use Smart PLS which is seldom applied in this area of research.

The model shows that both factors significantly influence GST compliance among taxable businesses in Malaysia; however, this model only explained 47.5% of the theory, suggesting that other determinants could influence GST compliance.

These findings are important for tax regulators (RMCD specifically) in promoting tax knowledge through continuous programmes and workshops, as GST is still at an early stage of implementation. From the results, audit performed on taxable entities could improve the compliance level with those with low tax knowledge. However, audit activities are not seen as favourable actions in the public's eyes as they are viewed as a part of enforcement by regulators. Cooperation and flexibility between enforcement agencies and taxable businesses are important to achieve high compliance.

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Managerial Ownership, Corporate Governance and Earnings Quality: The Role of Institutional Ownership as Moderating Variable

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ABSTRACT

The purposes of this study are first, to analyse the influence of corporate governance structure and ownership structure on earnings quality and second, to examine the role of institutional ownership on the causal relationship between managerial ownership and market outcomes. The sample of the study was 242 companies from 430 companies listed on the Indonesia Stock Exchange (IDX) using purposive sampling technique. Data analysis technique used moderating variables regression with institutional ownership. The results showed board composition of directors and managerial ownership significantly affected market outcomes. The number of audit committees did not affect significantly market outcomes while institutional ownership did not affect significantly the profit but as a moderating variable, institutional ownership significantly improved the effects of managerial ownership on earnings quality. Accounting-based profit quality is reflected by the solid profit persistence and predictability.

Keywords: Corporate governance, earnings quality, institutional ownership, managerial ownership

INTRODUCTION

International Financial Reporting Standards (IFRS) states that the objective of financial statements is to provide information related to financial position, performance and changes in financial position of an entity that is useful for the users in making economic

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decisions (Epstein & Jermacowicz, 2009). Information about earning triggers various responses from investors which indicate the presence of market reaction towards earning disclosure (Boediono, 2005). Moreover, strong market reaction on earning as reflected in higher Earnings Response Coefficient (ERC) shows quality of earnings (Francis, Olsson, & Schipper, 2006).

Basically, earnings quality is determined by accounting process (Francis et al., 2006). Preparation of financial reporting involves management and board. There are policies and decision regarding income by management which affect financial reporting process. Therefore, earnings quality can be influenced by earnings management and corporate governance mechanism. Furthermore, Boediono (2005) found that institutional ownership, managerial ownership and composition of Board of Commissioners have effect on earnings quality.

Jensen and Meckling (1976) stated that managers are more aware of internal information and company prospects than the shareholders. Moreover, managers tend to be opportunistic and thus they may provide different information to the shareholder. This condition creates information asymmetry, which can be minimised via corporate governance. Corporate governance provides the structure that facilitates the determination of company objectives and becomes a medium to determine performance monitoring techniques (Deni, Khomsiyah, & Rika, 2004).

However, there are two conflicting theories on reducing conflict of interest between managers and shareholder. According to managerial entrenchment hypothesis, managers have so much power that they have opportunity to utilize the firm to further their own interests rather than the interests of shareholders in the accounting reporting context (Niu, 2006). Therefore, when managerial ownership exists, monitoring will be more difficult as well. On the other hand, based on interest alignment hypothesis, stock ownership by either Board of Commissioners or management can effectively motivate managers to perform well. Furthermore, Jensen and Meckling (1976) argued that managers with lower ownership manipulate financial statements in order to eliminate barriers imposed on compensation contract based on accounting. Meanwhile, Board of Commissioners with small ownership are not monitoring the managers effectively. In fact, many companies are asking their commissioners to increase their stock ownership (Hambrick & Jackson, 2000).

A closely related issue of managerial ownership is institutional ownership. Nevertheless, there is a debate on the effect of institutional ownership to earnings quality (Jiang & Andarajan, 2009). On one hand, the managers' tendency to manage reported earnings may be reduced by the effectiveness of external monitoring by institutional investors. However, institutional investors may direct managers to make accounting decisions that improve short-term profits at the expense of long-term value (Jiang & Andarajan, 2009; Jones, 1991; Porter, 1992). Some institutional investors are "temporary owners" and too focused on current profit. Short-term institutional ownership drives managers to reduce their investment in R & D to generate higher earnings (Jiang & Andarajan, 2009). Jiang and Anandarajan (2009) found that strong shareholder rights leads managers to report higher earnings quality. On the contrary, when most stocks are owned by short-term institutional investors, shareholders' attempt to reduce the aggressiveness and earning management will be ineffective to generate higher earnings

The purpose of this study is to provide insight on these ongoing debates by examining the relationship between corporate governance mechanism, managerial ownership and earnings quality. In addition, accounting-based measure of earnings quality is examined to see if it has a correlation on market-based earnings quality. This study proposes institutional ownership to moderate the effect of managerial ownership on earnings quality. Overall, the findings of previous researches regarding the problem studied remain inconsistent. Furthermore, while most research related to earnings quality have been focused on developed countries, this study looks at Indonesia as an emerging country. Moreover, most Indonesian firms have concentrated ownership and there is a lack of investor protection (Utama, Utama, & Amarullah, 2017). Thus, these characteristics may create different market reaction (here is earnings quality) than those in developed countries.

LITERATURE REVIEW

Nitkin (2007) stated that company with better governance mechanism will have better earnings quality. He argued that high quality governance produces Commissioners who effectively monitor management performance in financial reporting to ensure high-quality earnings report. Moreover, Board of Commissioners is responsible to ensure the integrity of accounting process, provide an independent oversight of management performance and report their activity to shareholders (Skinner & Sloan, 2002). According to the agency theory, monitoring is essential to minimise manipulation by managers (Jensen & Meckling, 1976). Monitoring can be maximised by employing non-executive on board or independent board. They are expected to act objectively and protect stockholder interest including the minority. Independent board can be a watchdog to control the managers (Ramdani & Witteloostuijin, 2010).

Earlier studies (Al-Abbas, 2009; Benkraiem, 2009; Huang, Louwers, Moffit, & Zhang, 2007; Niu, 2006; Petra, 2007) have examined the connection between corporate governance mechanisms related to board characteristics (namely board independence, board size, board expertise and board ownership) and earnings quality. However, the findings are inconsistent. Most of the studies found that the board is more effective in monitoring the management when there is an independent member. Independent commissioners will reduce the possibility of fraudulent financial reporting (Niu, 2006). Similarly, Klein (2002) revealed that companies with independent commissioners are less likely to report abnormal accruals. Furthermore, a study conducted by Niu (2006) in a public company in Canada showed that board composition is negatively related to the level of abnormal accruals, and positively related to earnings. Thus, independent commissioners on the board may ensure that firms provide high-level earnings quality.

Based on the description above, the following hypothesis is proposed:

H1: Independent board has positive effect on earnings quality.

Another element of governance that affect board monitoring activity of managers is board or managerial ownership. There are two different views in the literature on managerial ownership and earnings quality. Generally, large ownership leads to moral hazard and information asymmetry between internal and external investor. According to managerial entrenchment hypothesis, managers may receive more incentive to manipulate financial statement and monitoring will be more difficult if there is managerial ownership in the company (Niu, 2006). On the other hand, agency theory predicts that managers with lower stock ownership have a greater incentive to manipulate accounting numbers in order to eliminate barriers imposed on accounting-based compensation contract (Jensen & Meckling, 1976). In addition, outside board with small stock ownership in the company cannot effectively monitor the managers. However, interest alignment hypothesis believes that ownership by board and management can effectively motivate manager performance and create incentives for independent board to monitor the management.

Niu (2006) and Nitkin (2007) found that managerial ownership can improve earnings quality. Managerial ownership is negatively associated with earnings management, and thus provide higher financial reporting quality and higher earnings quality as well (Alzoubi, 2016). Furthermore, Kamardin (2014) concluded that managerial ownership improves firm performance and entrenchment effect of managerial ownership at the high level of ownership is not supported in Malaysia. Taking on from Kamardin (2014), this study proposes interest alignment hypothesis. Therefore, ownership by board or management is expected to motivate the performance of managers. It also motivates the board to put more effort in monitoring managers' actions. Consequently, managers will work at their best to produce higher earnings quality.

Based on the above, the second hypothesis is proposed:

H2: Managerial ownership has positive effect on earnings quality.

Financial reporting depends on independence and integrity in audit process. The audit committee has a duty to assists Board of Commissioners to monitor financial reporting process by managers and boost the credibility of financial statements (Al-Abbas, 2009). The existence of an audit committee is to monitor and minimise asymmetric information between principal and agents in agency theory concept. Empirical studies generally support the positive impact of audit committee. Xie et al. (2003) reported a negative correlation between earnings management and audit committee independence. In addition, Niu (2006) found size of the audit committee affects financial reporting. Furthermore, quality internal and external audit processes improve financial statements' accuracy, which in turn earns them investor trust (Anderson & Reeb, 2003).

McMulen (1996) revealed that audit committee is associated with fewer shareholder lawsuits for fraud, fewer correction of quarterly earnings, fewer illegal acts, and fewer changes in auditors when there is different opinion between client and auditor. These results indicate that firms with reporting errors, violations, and other indicators of unreliable financial reporting could be due to poor audit committees. Klein (2002) showed a negative correlation between independent audit committee and abnormal accruals. Lin et al. (2006) found a negative relationship between audit committee size and earnings restatement as a measure of earnings quality. However, other characteristics of audit committee, such as independence, financial expertise, activity and stock ownership, have been found not to significantly affect earnings quality.

Based on these, the third hypothesis is proposed:

H3: Audit committee has positive effect on earnings quality.

Institutional investors have a role in managerial decisions. When institutional ownership increases, institutional investors become more actively involved in the company (Jiang & Anandarajan, 2009). They give more consideration on firm performance to increase stockholder value. Moreover, agency theory states fraud among managers can be prevented by implementing effective monitoring mechanisms, such as increasing institutional ownership (Jensen & Meckling, 1976). This theory is supported by Gillan and Starks (2000) who opined that "institutions that hold large equity positions in a company have been motivated to actively participate in the company's strategic direction". Meanwhile, Chung et al. (2002) found that institutional investors will be able to control management of earnings. Nevertheless, Cornett et al. (2007) concluded that control by institutional investors may encourage the managers to be more focused on their attention on firms' performance and reduce their opportunistic behaviour. Furthermore, Ajinkya, Bhojraj and Partha (2005) suggested that firms with greater institutional ownership prefer publishing forecast analysis and the forecast tends to be more specific, accurate, and has minimum bias.

Thus, it is expected that institutional investors have more effective monitoring power over the managers. In addition, institutional and managerial ownership are expected to improve earnings quality because institutional investors are expected to effectively perform their monitoring activities. Therefore, the following hypothesis is proposed:

H4: Institutional ownership strengthens the effect of managerial ownership on earnings quality.

Investors considered earnings disclosure in financial statements before making an investment decision, including to assess firm's ability to pay dividends. Petra (2007) found that investor's confidence regarding the information reported in net income can be measured by the magnitude changes in stock prices or the magnitude of abnormal market returns at the time when market gives responses to net income. Moreover, Arifin (2005) stated that the investor's perception depends on information quality which is disclosed by the company. Therefore, companies are required to provide clear, accurate, timely and comparable information. Some empirical studies generally support that quality of accounting-based earnings affect market-based earnings y which is measured by earnings response coefficient, expected return and abnormal return. Francis et al. (2006) reported that expected return is affected by accruals quality, earnings persistence, earnings predictability, income smoothness, value relevance, timelines, and conservatism. Boediono (2005) noted the same that that earnings quality is significantly but weakly affected by earnings management, ownership structure, and composition of Board of Commissioners.

A correlation between accounting-based earnings quality and market-based earnings quality can be explained using signalling theory. This theory explains the behaviour of two parties (individuals or organisations) when they have access to different information. Sender requires to choose how to communicate the information, and the receiver has to decide how he interpret signals provided by sender (Connelly, Certo, Ireland, & Reutzel, 2011). In this case, firms give signal about earnings quality in their financial statements (accounting-based earnings quality) and then the signal will receive responses from investors (market-based earnings quality. Finally, good accounting-based earnings quality, which is measured using earnings persistence and earnings predictability, is expected to receive good responses from the investors.

Based on the above, the following hypothesis is proposed:

H5: Earnings persistence has positive effect on earnings quality.

H6: Profit predictability has positive effect on earnings quality.

METHODS

Research Design

The population of this research was 430 companies listed on the Indonesia Stock Exchange (IDX). The number of companies listed on the Indonesia Stock Exchange

(IDX) is based on data as at June 30, 2011 (when the research was conducted) by retrieving from IDX database (http://www.idx.co.id/). The sample companies were selected based on certain criteria (purposive sampling). The criteria that serve as the basis of sample selection are:

1. Being listed in Indonesia Stock Exchange (IDX) before 2005.
2. Publishing financial report from 2005-2010, and
3. Data that is required for the measurement of research variables comprising the composition of the board of directors (board composition), managerial ownership (shareholders by manager/director), institutional ownership (institutional investors), the audit committee, the earnings quality, and stake price during the period of observation.

A purposive sampling technique was employed.

Table 1
Research sample

Criteria	Total
Companies that are listed in Indonesia Stock Exchange as at 30 June 2011 (source: www.idx.co.id)	430
Companies are listed on the Stock Exchange since 2004	(133)
Companies whose annual report are not found between 2005 and 2010 during the period of data collection (July 2011)	(23)
Unavailable data on stock price in the period of data collection	(32)
Total sample	242

Source: Processed research data

Data Analysis

Data was analysed using descriptive statistical analysis and inferential statistical analysis. This research employs regression analysis with moderating variables / Moderated Regression Analysis (MRA) (Ghozali, 2011). In addition, to produce a research model that is BLUE (Best, Linear, Unbiased Estimator) multicollinearity test, autocorrelation, heteroscedasticity test, normality test and the linearity test are performed.

Illustrations

Research model below is proposed based on Francis et al. (2006) and previous researches:

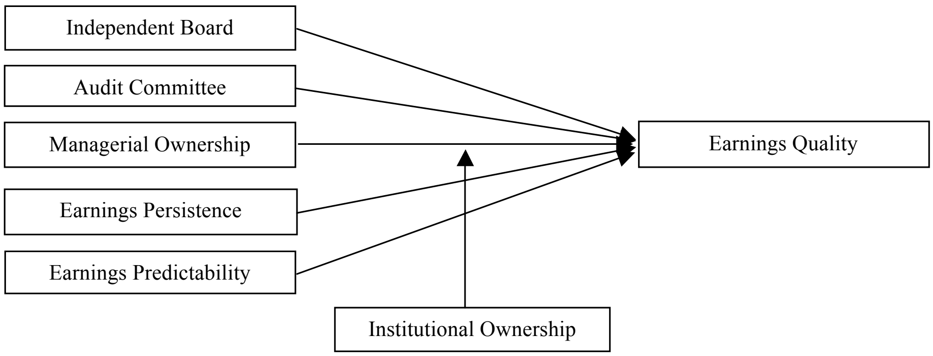

Figure 1. Empirical Research Model
Source: Developed for this research

RESULTS

Based on the MRA, here is the equation:

MO = $\alpha + \beta 1KD + \beta 2KM + \beta 3KA + \beta 4KI + \beta 5PERS + \beta 6PRED + \beta 7 (KM * KI) + \beta 8size + \varepsilon$

Where:

EQ = Quality of profit with the persistence measurement and profit predictability

MO = Market outcome with the size of cumulative abnormal return

KD = The composition of the board of commissioners

KM = The ownership by the management or the directors

KA = Audit Committee

KI = Institutional Committee

Size = The size of the company as a control variable that is measured from the total assets

The descriptive statistics for each variable is presented in Table 2 below:

Table 2
The result summary of research hypothesis test

Research Variable	Mean	Mode	Std. Deviation	Minimum	Maximum
KOM_DK	42.01	33.33	11.67	16.67	100.00
KEP_MAN	1.83	0.00	5.66	0.00	43.58
KO_AUD	3.15	3.00	0.60	2.00	6.00
KEP_INST	65.32	0.00	24.69	0.00	99.89
PERSIST	0.27269	0.00001	0.29513	0.00001	0.97094
PRED_LB	242,448,275,220	286,114,793	571,671,530,537	286,114,793	3,992,325,287,634
MAR_OUT	0.01338	-0.68022	0.16464	-0.68022	0.88595

KOM_DK : The Composition of the Board of Commissioners
KEP_MAN : Managerial Ownership
KO_AUD : Audit Committee
KEP_INST : Institutional Ownership
PERSIST : Profit Persistence
PRED_LB : Profit Predictability
MAR_OUT : Market Outcomes

Table 3
The F Test

Model		Sum of Squares	Df	Mean Square	F	Sig.
1.	Regression	6.539	8	.817	22.434	.000[a]
	Residual	8.490	233	.036		
	Total	15.029	241			

a. Predictors: (Constant), ASET, KEP_INST, PERSIST, interaksi, KOM_DK, KO_AUD, PRED_LB, KEP_MAN
b. Dependent Variable: MAR_OUT

The table below is a summary of hypothesis testing and its results.

Table 4
The result summary of research hypothesis test

Research Hypothesis				t-value	Sign.	Conclusion
H1	KOM_DK	→	MAR_OUT	1.553	0.122	Refused
H2	KEP_MAN	→	MAR_OUT	4.569	0.000	Accepted
H3	KO_AUD	→	MAR_OUT	-1.172	0.242	Refused
H4	KEP_MAN * KEP_INST	→	MAR_OUT	3.057	0.002	Accepted
H5	PERSIST	→	MAR_OUT	2.069	0.040	Accepted
H6	PRED_LB	→	MAR_OUT	5.620	0.000	Accepted

Source: The data processed result

DISCUSSION

Profit quality which is the dependent variable is based on market outcomes (market-based profit quality). This model influences the composition of the board of directors, audit committee, managerial ownership, institutional ownership, and profit persistence, predictability of profit, moderating institutional and managerial ownership on market outcomes. To obtain the Best Linear Unbiased Estimator (BLUE), the model in the regression equation is tested through several classical assumptions. The test results have confirmed that the present model is free from classical assumptions. Table 2 shows that overall predictor consisting of variables such as composition of board of directors, audit committee, managerial ownership, institutional ownership, profit persistence, predictability of profit, the interaction between managerial ownership and institutional, and assets as control variables significantly affect the quality of profit-based market that is measured by market outcomes in the form of cumulative abnormal return. The magnitude of the variation of the overall ability of the independent variables (the composition of the board of directors, audit committee, managerial ownership, institutional ownership, profit persistence, predictability of profit, the interaction between managerial ownership and institutional) in explaining the variation in the dependent variable (market-based earnings quality) can be seen from Table 3 on the model summary.

Based on the hypothesis monitoring, the high quality of governance will produce directors who effectively monitor the work of management in the company's financial report to ensure high-quality profit report. When monitoring hypothesis suggested a causal connection, matching hypothesis shows that the quality of governance and the quality of profit are together determined by several variables, which will result in better quality governance and profit. The company management will appreciate the responsibility of its shareholders who choose the quality of governance and the quality of profit together.

One of the important factors that influence the integrity of the financial accounting process is the involvement of the board of the directors that is responsible enough to provide an independent oversight of management performance and after that account for this activity to the shareholders. Based on the agency theory, the monitoring effort is essential to minimise the manipulation of managers' behaviour (Jensen & Meckling, 1976). Therefore, one suggestion is to hire directors from outside of the company (independent directors). Independent commissioner is expected to act objectively, protect all owners of the company, including the minority owners.

Previous research (Al-Abbas, 2009; Huang et al., 2008; Niu, 2006; Petra, 2007) has examined the link between corporate governance mechanisms related to the board of the directors (e.g. independence of the board, board size, the expertise of the board of the directors and board members stake ownership) and profit manipulation. The results were inconsistent. The results of this study showed that institutional ownerships did not significantly affect the quality of profit, for the three models of empirical research. However, institutional ownership variable significantly strengthens the effect of managerial ownership on profit quality. Despite the fact institutional shareholders did not directly affect the quality of profit, the managerial ownerships strengthened market outcomes.

CONCLUSION

This study found composition of board of commissioners and audit committee have no significant impact on market outcomes. However, managerial ownership and the quality of accounting-based profit with the size of the persistence of profit and profit predictability are proven to positively and significantly affect market outcomes. Moreover, institutional ownerships do not significantly affect the quality of profit, for the three models of empirical research. Institutional ownership variable significantly strengthens the effect of managerial ownership on profit quality. The existence of institutional shareholders does not directly affect the quality of profit but, the owner is able to strengthen the influences of managerial ownerships on market outcomes.

There are some limitations in this study, as institutional ownerships in this research are defined as ownership by the institutions, without restricting to banking institutions and financial institutions. Additionally, this research has not revealed the behaviour of institutional owner. Thus, future research must reveal the behaviour of institutional owners; different types of institutional ownership between the temporary owner and the permanent owner are thought to have differences in monitoring activity. The temporary owner tends to prioritise short-term profit, while the permanent owner is more concerned with the long-term profit.

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Board of Commissioner's Effectiveness on Politically Connected Conglomerates: Evidence from Indonesia

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ABSTRACT

This paper aims to examine the effect of political connection and board of commissioners (BOC) effectiveness on the performance of conglomerates. The sample of this research is all 66 conglomerates listed on Indonesia Stock Exchange from 2006 to 2014. Regression panel data with General Least Square was used for analysis. It was found that the effectiveness of the BOC as measured by independence, activity, the number of commissioners and competency have a different effect on the conglomerate's performance. Findings show that independence does not affect market and accounting performance, activities of the board of commissioners have a negative effect on the market performance and accounting performance, the number of commissioners has positive effect on the market performance and accounting performance, whereas education and experience of commissioner have a positive effect on market and accounting performance. However, the results of the board of commissioners' effectiveness on politically connected conglomerates show they have a positive and significant effect on market performance and accounting performance. The presence of independent board of commissioners and their activities in the conglomerate is not so effective, but the presence of commissioners, especially ones who are officials (both active and inactive) and their activities in the conglomerate are very effective and have a positive impact on the conglomerates' performance both in short and long term. Conglomerates that ignore good corporate governance practices are heavily monitored by their BOC and serves as a means of political rent-seeking.

Keywords: Board of commissioners' effectiveness, conglomerates' performance, political connection

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INTRODUCTION

Conglomerates in Indonesia contribute substantially to the country's GDP. They represent only 0.01% of the total companies in Indonesia, but contribute 44.4% to Indonesia's GDP. In fact, of the total 510 companies listed on the Indonesia Stock Exchange in 2014, the 116 conglomerates control more than 70% of the total market capitalisation of the Stock Exchange (Wati, Rachmat, & Erie, 2016a).

Faccio (2006) documented that political connections are more common in countries like in Indonesia which are very corrupt and impose restrictions on foreign investments. Goldman, Jorg and Jongil (2009) on their analysis of the US economy showed that after the announcement of a Republican victory, there were differences between companies connected to the Republican Party and those connected with the Democratic Party. There was a positive return for the portfolios related to the Republican Party, and a negative one for the Democratic portfolio. Goldman et al. (2009) refuted the findings Faccio (2006), where political connections are not only common in developing countries with high levels of corruption, but can be observed in countries with strong rule of law.

Political connections can offer preferential treatment and services such as access to funds (Boubakri, Guedhami, Mishra, & Saffar, 2012; Claessens et al., 2008; Faccio, 2006; Johnson & Mitton, 2003; Khawaja & Mian, 2005; Leuz & Gee, 2006; Tian & Cheung, 2013; Yeh et al., 2010) access to government procurement contracts (Goldman et al., 2009), public policy (Bunkanwanicha & Wiwattanakantang, 2009), trade licensing (Mobarak & Purbasari, 2005) as well as access to the company's IPO (Francis, Hasan, & Sun, 2009). Studies have shown that political connections affect the performance and value of companies (Ang, Ding, & Thong, 2013; Boubakri, Cosset, & Saffar, 2008; Do, Lee, & Nguyen, 2013; Faccio, 2006; Fan, Wong, & Zhang, 2007; Fisman, 2001; Goldman et al., 2009; Leuz & Gee, 2006; Wong, 2010).

Wati, Primiana and Sudarsono (2016b) report political connections possess adverse effects on the company, namely, high leverage, followed by overinvestment (Wu et al., 2012) a decline in stock prices and stock returns (Fan et al., 2007; Fisman, 2001), a decline in the company's performances (Leuz & Gee, 2006; Li & Xia, 2013; Xu & Zhou, 2008), and poor quality financial reports (Chaney et al., 2011).

According to Wati et al. (2016a), there is strong evidence that former Indonesian president Soeharto sought to protect companies that had political connection with his regime, especially the conglomerates. Strong political connections and the role of the family controlling the conglomerates in Indonesia become an indication of poor corporate governance, so it is not surprising that many people have attributed the 1997 economic crisis that engulfed Indonesia and other Asian countries to their poor corporate governance practices (Johnson, Boone, Breach, & Friedman, 2000).

The global financial crisis began to be felt in the US in the summer of 2007 (sub-prime mortgage crisis) and by mid-2008, it had spread to most countries in the world. It was also touted as evidence of disruption to the stability of the financial system as a result of weak implementation of corporate governance (Kirkpatrick, 2009).

Indonesia is classified as a model user in the Continental European corporate governance practices that adopt a two-tier board system. In such a system, the company has two separate bodies, namely the board of commissioners and board of directors. The board of directors is authorised and fully responsible for the management of the company in accordance with its purposes and objectives, whereas the board of commissioners aim to supervise the general or special counsel to the board of directors.

Commissioners have an important role in the implementation of good corporate governance to oversee policy and implementation carried out by the management. They also give value to the company and benefits to stakeholders. The effectiveness of BOC is influenced by several factors, namely their independence, activities, size and competences (education and experience).

There are a number of studies on conglomerates but to the best of the present author's knowledge, there is a lack research on conglomerates in Indonesia. The result of this research showed that political connection has a positive and significant effect on firm value (Tobin's Q and Return on Assets). The BOC's effectiveness on conglomerates that are politically connected shows more effect on their value than those which are not (BOC Activity).

The rest of this paper is structured as follows: After the introduction, Section 2 discusses important literature on this topic while Section 3 is an examination of relevant theories as well as hypotheses development. Section 4 elaborates on the research methodology whereas Section 4 discusses major findings of the study. The paper is summarised and concluded in Section 5.

LITERATURE REVIEW

Political Connection

The theory of political connections was originally developed by North (1990) and Olson (1993) who proposed that politicians or government leaders establish relationships with companies to achieve their agenda that benefits their supporters. As a recognition of their contributions via their votes, the politicians who successfully won their seats provide the companies with benefits, such as profitable contracts or subsidies. This however, result in the firms with political networks to be inefficient because of their "protected" status. Shleifer and Vishny (1994) found that government intervention in the economy is driven by the need to provide jobs, subsidies and other privileges to its supporters, who are expected to return the favour in the form of votes, funding and bribery.

Political connections also support the logic of resource dependence theory (Hillman, 2005) where companies overcome interdependency and uncertainty by establishing connections to sources of the interdependency and uncertainty, namely the government. Thus, by creating a political connection, they can provide benefits for the company and impact on the firm's value.

Political connections would be more valuable in situations where there are high levels of corruption and weak regulations (Do et al., 2013; Faccio, 2006). A review of literature found more positive influence of political connections on firm value (Ang et al., 2013; Boubakri et al., 2007; Cooper, Gulen, & Ovtchinnikov, 2010; Do et al., 2013; Faccio, 2006; Goldman et al., 2009; Johnson & Mitton, 2003; Wong, 2010). This is confirmed by Li, He, Lan and Yiu (2012) which showed a strong positive correlation between political connections and company diversification.

Cooper et al. (2010) examined the political contributions of public companies in the United States from 1979 – 2004. Using data from the Federal Election Commission (FEC), they found that companies which contributed to politics positively and significantly earned a good return. Similarly, Wong (2010) in Hong Kong found political connection improved the performance of the company. Wong found that the company had increased their ROE and MBV (Market to Book Value) ratios after joining the Electoral Committee.

Furthermore, Li et al. (2012) examined the influence of political connections on diversification of Chinese public enterprises in 2002 – 2005. The results showed a strong positive relationship between political connections and the diversifying companies. The results of this study indicate that political connections in conglomerate companies are more significant than non-conglomerate ones. Findings of Li et al. (2012) was consistent with those of Deng, Tian, Li and Abrar (2012) who examined the diversification effect of companies which are politically connected and its influence on corporations in China. They found that political connections have a positive and significant effect on companies' performance.

Board of Commissioner's Effectiveness

Corporate governance monitoring can be carried out through internal and external mechanisms. Internal control mechanism reduces agency problem where corporate governance is expected to improve the monitoring of management actions. Internal mechanisms of control are via by BOC.

Zhou and Chen (2004) report the effectiveness of BOC is influenced by several factors, namely independent boards, board activities, board size and board competence (Zhou & Chen, 2004). Yeh and Woidtke (2005) found that an independent board has positive effect on firm value. Similarly, Lefort and Urzua (2008) documented that an independent and professional board has a positive effect on firm value. These was confirmed by Vania and Supatmi (2014) who examined the financial institutions in Indonesia and found a growing number of independent directors which meant the company's value in the proxy by Tobin's Q was higher. Ma and Tian (2014) affirmed that an independent board will be able to improve the company's performance effectively. Nevertheless, Bhagat and Black (2000) did not see a link between independent boards' number on company performance measured by Tobin's Q and ROA. There is a strong correlation between poor performances and an increase in independent boards. Hermalin and Weisbach (1991) also did not find any effect of the proportion of independent board on Tobin's Q as a measure of market performance. Their finding was supported by Agrawal and Knoeber (1996), who showed a negative and insignificant effect of the independent boards on corporate performance.

García-Ramos and García-Olalla (2011) found that board meetings have positive effect on the company's performance, but this effect is weakened when the family business is run by its founder. Brick and Chidambaram (2010) found that the activity of the board through board monitoring increased the firm value (Tobin's Q). Vafeas (1999) had different results, where the number of annual board meeting is inversely proportional to the firm value. He noted increasing activity as measured by the frequency of board meetings decreased stock price.

Yermack (1996) observed that the board's ability to monitor will be reduced by its large size due to problems in coordination, communication and decision-making. The company with a smaller board shows better financial performance. Jensen (1993) and Beasley (1996) concluded that a smaller board would be more effective in monitoring and their findings are supported by Cheng, Evans and Nagarajan (2008); Eisenberg, Sundgren and Wells (1998) who found a negative relationship between the size of the board with the company's performance. Cheng et al. (2008) said the smaller the board, the better, and these conditions further improved the company's performance. Guest (2009) also documented that a large board size at big companies has a negative relationship with the company's performance.

However, Chtourou, Bedard and Courteau (2001) reported that larger boards provide better and effective financial reporting. Dalton, Daily, Johnson and Ellstrand (1999) showed that there is a positive relationship between board size and corporate performance. Large board size is expected to perform better advisory functions for the CEO. Large companies such as conglomerates have a high complexity and hence, the function of advising and monitoring requires a larger board size (Coles et al., 2008). García-Ramos and García-Olalla (2011) found a positive effect between board size and company performance in the family company which is not led by its founder, and found a negative effect between the size of the board and company performance when the company is managed by its founder.

Beasley (1996) showed that the competence of the board members is affected by their experience, knowledge, and understanding of the financial statements and the financial information of other companies. Their competence will affect the ability of the board of commissioners in performing their control function optimally.

Jeanjean and Stolowy (2009) found that accounting expertise on average adversely affected the type of board (two-tier versus one-tier) and growth opportunity, but positively affected the independence of the board, ownership concentration and institutional ownership.

Many officials who are both active and non-active functioning as board of commissioners of conglomerates have political connections with the authorities in order to obtain access to various benefits, and ease of access to funding, government procurement contracts, large subsidies and waivers of tax rates, trade licence, security guarantees on investment companies among others. All these conveniences will ultimately affect firm value.

Government officials who function as independent commissioners or commissioners can also provide useful information related to government policies, especially during regime changes that can result in insider trading.

Research Hypotheses

Literature review of previous studies on mechanisms of corporate governance showed no study has been undertaken that focuses on the role and influence of political connection and effectiveness of the board of commissioners on the performance of conglomerates. Therefore, the following hypotheses are proposed:

H_1: Political connections affect positively the value of the conglomerates;

H_2: There is positive effect of board of commissioners' effectiveness, namely independence, board size, board meeting, board experience and board education on the conglomerate's value;

H_3: The effectiveness of board of commissioners (independence, board size, board meeting, board experience and board education) on conglomerates which are politically connected has greater effect on their value.

METHODS

The sample of this research is all conglomerates listed on the Indonesia Stock Exchange between 2006 and 2014 and who have published their financial reports every year and have never been delisted from the capital market. Based on these criteria, the total conglomerates are 66 companies (2006 – 2014). A total of 594 companies were studied.

The variables used in this research were conglomerate performance consisting of accounting and market performance as dependent variable, and political connection, and board of commissioners' effectiveness as independent variables. Market performance indicators used Tobin's Q as proxy and accounting performance used Return on Assets as proxy.

Political connection as used in this study is defined by Faccio (2006); Fisman (2001); Leuz and Gee (2006); Wati et al. (2016b). Thus, politically connected is when a shareholder of the company or the top management is a member of parliament, minister or head of state, or who have a close relationship with them as political party officials, army and police officials. The former members of parliament, ministers, or heads of state are included because they still have political connection with the government. Table 1 below explains the operationalisation of the variables:

Table 1
Description of variables

Variables	Description
Performance measure (Dependent):	
Return on assets	Ratio of profit after tax to total assets
Tobin's Q	Ratio of the market capitalisation plus debt divided the total assets.
Independent: Political connection	The shareholders of the companies (ownership 10%) or the top management of the company is a member of parliament, ministers or heads of state, or who have a close relationship of them as political party officials, the army and police officials. The member of parliament, ministers, or heads of state former Dummy Variable: 1 = politically connected 0 = not politically connected
Board of commissioners effectiveness variables:	
Independence board	The number of independence commissioners in the board
Board activity	The number of board meetings
Board size	The number of commissioners in the board
Experience	The proportion of commissioners' experience
Education	The proportion of commissioners' education
Control variables:	
Firm size	Log of total assets
Growth	Ratio of Δ total sales to total sales
Firm age	Number of years since incorporation

Source: Literature

To test the hypotheses of the study, we used the following regression model:

$$
\begin{aligned}
Tobin'sQ_{it} = {} & \alpha_1 + \beta_1 Pol_{it} + \beta_2 Indep_{it} + \beta_3 Actv_{it} + \beta_4 BdSize_{it} + \beta_5 Exprc_{it} + \beta_6 Educ_{it} + \beta_7 Pol * Indep_{it} + \beta_8 Pol * Actv_{it} + \\
& \beta_9 Pol * BdSize_{it} + \beta_{10} Pol * Exprc_{it} + \beta_{11} Pol * Educ_{it} + \beta_{12} Size_{it} + \beta_{13} Growth_{it} + \beta_{14} Age_{it} + \varepsilon_{t1}
\end{aligned} \tag{1}
$$

$$
\begin{aligned}
ROA_{it} = {} & \alpha_2 + \beta_{15} Pol_{it} + \beta_{16} Indep_{it} + \beta_{17} Actv_{it} + \beta_{18} BdSize_{it} + \beta_{19} Exprc_{it} + \beta_{20} Educ_{it} + \beta_{21} Pol * Indep_{it} + \beta_{22} Pol * Actv_{it} + \\
& \beta_{23} Pol * BdSize_{it} + \beta_{24} Pol * Exprc_{it} + \beta_{25} Pol * Educ_{it} + \beta_{26} Size_{it} + \beta_{27} Growth_{it} + \beta_{28} Age_{it} + \varepsilon_{it2}
\end{aligned} \tag{2}
$$

RESULTS AND DISCUSSION

Data from 2006 to 2014 is shown in Table 2 as below.

Table 2
Descriptive statistic of the variables from 2006 – 2014

Variable	Panel A			Panel B		
	Politically Connected N=406			Not Politically Connected N=188		
	Min	Max	Mean	Min	Max	Mean
Independence	1	7	2.60	1	4	1.85
Activity	1	123	12.25	1	46	5.63
Board Size	2	12	5.84	2	8	4.42
Experience	0,5	1	0,94	0,67	1	0,99
Education	0	1	0,82	0,5	1	0,90
Tobins Q	0,11	17.94	1.91	0,07	11.13	1.77
ROA (%)	- 30.35	82.25	8.15	-29.37	46.49	5.65
Size (Log)	5.2	8,9	7.09	4.3	8.2	6.41
Growth (%)	-90	1071	32.7	-90	34830.9	1993.7
Age	3	32	15.91	1	64	16,41

Source: Data IDX processed, 2016

Based on Table 2 above, mean of independent commissioners in politically connected firms is 2.6 and 1.85 for those which are not. The results indicate the number of independent commissioners and board of commissioners in a politically connected firm is greater than the number of commissioners in firm which is not. The number of meetings in a firm politically connected is more frequent while the experience and education of the commissioners are lower than firms which do not have political connections. This result is not surprising because there are a lot of active and non-active officials who are commissioners without relevant educational background and experience.

The average of Tobin's Q, Return on Assets and firm size of firm politically connected are larger while the average of firm growth which is indicated by sales performance is lower. Firms which are politically connected also tend to be younger and the higher value of Tobin's Q and Return on Assets in conglomerate politically connected indicates that political connections are beneficial to the company.

Table 3
Regression analysis of market and accounting performance

	Prediction	Research Model		Robust Model	
		Tobin's Q	ROA	Tobin's Q	ROA
Constant		2.633***	-0.776***	2.076	-0.559***
PC	(+)	2.740**	0.841***	2.330*	0.759***
INDP	(+)	0,003	-0.011	-0.0001	-0.002
ACT	(+)	-0,024***	-0.002***	-0.023**	-0.002**
BS	(+)	0.20***	0.024***	0.243***	0.024***
EXPR	(+)	0.998	0.382**	2.09	0.454***
EDUC	(+)	1.048**	0.098***	0.507	0.064**
SIZE	(+)	0.193**	0.039***	-	-
GROWTH	(+)	0.001***	0.001	-	-
AGE	(+)	0.005	0.001***	-	-
*PC*INDP*	(+)	-0.053	0.004	-0.025	-0.016*
*PC*ACT*	(+)	0.033***	0.004***	0.027**	0.002***
*PC*BS*	(+)	-0160**	-0.019***	-0.238***	-0.017***
*PC*EXPR*	(+)	0.413	-0.372**	-0.815	-0.599***
*PC*EDUC*	(+)	-1.048**	-0.098***	-0.507	-0.065**
*PC*SIZE*		-0.292***	-0.057***	-	-
*PC*GROWTH*		-0.057	0.005	-	-
*PC*AGE*		0.029***	0.004***	-	-
R^2		20.03%	39.96%	13.40%	23.16%
Adjusted R^2		17.66%	38.18%	11.76%	21.71%
Fstat		8.442***	22.434***	8.161***	15.897***

Source: Data IDX processed, 2016
***Significance at 1%, ** 5%, and * 10%

The table above is summary of test result on the effectiveness of board of commissioners to firm value which was proxied by *Tobin's Q* and *Return on Assets*. *Tobin's Q* is ratio of the market capitalisation plus debt divided by total assets. *Return on Assets* is Ratio of profit after tax to total assets. Political Connection used dummy variables, 1 = political connected and 0 = non-political connected. *Indep* is the number of Independent commissioners, *Actv* is the number of commissioners' board meeting. BS is the number of commissioners' board. *Exprc* is the commissioner's experience, *Educ* is commissioner's education. Size is Log of Total Assets, *growth* is Ratio of ΔTotal Sales to total sales, and *age* is number of years since incorporation.

Based on Table 3 above, political connections have positive effect on the conglomerates performance both at the market and accounting level. The results of this test support the political connection theory proposed by North (1990) and Olson (1993). They developed the theory that politicians or government leaders build relationships with the company to achieve an agenda favourable to government or to support politicians or such government, as well as resource dependence theory (Hillman, 2005). He company will overcome the interdependency and uncertainty to establish a connection to the source of interdependency and uncertainty of such government. Results of this study are consistent with that of previous studies whereby companies with political connections have a positive effect on firm value (Ang et al., 2013; Boubakri et al., 2008; Cooper et al., 2010; Do et al., 2013; Faccio, 2006; Goldman et al., 2006; Johnson & Mitton, 2003; Wong 2010). The results of this study are also in agreement with Li et al. (2012) and Deng et al. (2012), who indicate that there is a strong positive influence between political connections and conglomerate.

The existence of political connections in the conglomerate indicates level of corruption in Indonesia is considered high[1], and political connection provides lubrication to achieve the objectives of the company. Therefore, they will make significant efforts to foster political connections in order to achieve the company's growth and they also realise that political connections are valuable for the company.

[1]Indonesia ranks 107 out of 174 countries in 2014 (Corruption Perception Index, 2015)

The influence of independent board does not support the hypothesis either on market performance or accounting performance. Board of independent commissioners in politically connected conglomerate has no significant effect either on the market or accounting performance. This shows that the number of independent commissioners has no effect neither on the short-term nor long-term performance both on the company politically connected and the conglomerate as a whole. These results are consistent with those of Agrawal and Knoeber (1996); Bhagat and Black (2000); Hermalin and Weisbach (1991) who found that an independent commissioner has no effect on the company's performance. This indicated independent commissioners on the conglomerate failed in representing the interests of other stakeholders other than the interests of the majority of shareholder. Independent commissioners in carrying out their duties must truly be independent and always pay attention to the interests of the company and other stakeholders above personal or group interests. The existence of a majority of independent boards in the company is only as a rubber stamp for decisions already made by the management.

Commissioners' activities are proxied by the number of meetings which have significantly negative effect both on market and accounting performance. These results indicate that the meetings held by the board of commissioners of the conglomerate as a function of the monitoring of the management has not been effective. However, activities of BOC in the company which is politically connected has different outcome in which the commissioners' activities in those companies has significantly positive effect both on market and accounting performance. These results indicate that the presence of the commissioners as well as meetings conducted by the board of commissioners are effective and has a positive impact on the company. This could be an indication that the various issues and lobbying discussed at meetings have served mutual interests. The results of this study are consistent with that of García-Ramos and García-Olalla (2011) as well as Brick and Chidambaram (2010) who found that monitoring activities of the board has increased the value of the company.

The number of commissioners has significant positive effect on market and accounting performance. This means the more the number of commissioners, the greater the performance of the company. The results of this study are consistent with those of Dalton et al. (1999) and Chtourou et al. (2001), who show a positive relationship between board size and corporate performance. These results indicate that the ability to monitor the company's board of directors will increase with corresponding with the size of the BOC. The number of commissioners in politically connected conglomerate showed different outcome where the number of commissioners in politically connected conglomerate has significantly negative effect both on market and accounting performance. This means that the bigger the board size, the less effective is the performance of the company. The results of this research support the findings of Guest (2009) who showed the board size affect negatively the company's performance. Likewise, Cheng et al. (2008); Eisenberg et al. (1998) and stated the board size, the better and this would further improve the company's performance. These results indicate that the ability to monitor the commissioners will be reduced if the BOC size is larger as it will cause problems in coordination, communication and decision-making.

The commissioners' experience has insignificant effect on market performance, while the commissioners' experience has significant positive effect on accounting performance. These results indicate that the commissioners' experience has no significant effect on long-term performance of the company but has significant effect on short-term performance of the company. The more experienced the commissioners, the better the short-term performance of companies. The commissioners' education has significant positive effect both on market and accounting performance. The results of this study show educated commissioners will lead to better both short term and long term performance of the company. The result of the commissioners' competence test on the political connected company is contrary to prior commissioners' competency testing. However, analysis on education and experience of the BOC in politically connected conglomerates showed different result. Education has positive effect but insignificant to company's long-term performance. Education has a significantly negative effect on the company's short-term performance, and so does experience of the commissioners on the company's performance both short term and long term. This is not surprising because, there are many commissioners who have experience and educational background which are incompatible, where commissioners are much politically connected with the military, police or others who lack appropriate experience in their respective field.

Control variables in this research have positive effect on short-term and long-term conglomerate performance. Meanwhile, only age of the firm has positive effect on the politically connected conglomerate. On the other hand, firm size on has a negative effect on the company's performance.

From the findings of this research model, it can be concluded that the presence of independent board and the activities of the board of commissioners in conglomerate is not adequately effective but the activities of the board of commissioners in the conglomerate politically connected is sufficiently effective and have an impact on company's value both short term and long term.

CONCLUSION

The results of this suggest the activities of politically connected conglomerates have positive and significant effect on market and accounting performance. Meanwhile, it is found that the size of BOC and the individual commissioner's competence have negative effect on market and accounting performance.

From the findings of this research, it can be concluded that the presence of officials as in the BOC benefits the conglomerates since it can be a source of information about government policies. They ignore good corporate governance in which the board of commissioners should perform monitoring functions for management instead of acting as a political rent-seeking. It is proven by the presence of officials. So, it is not surprising that good corporate governance in Indonesia persistently has the lowest score in Asia in terms of law enforcement (ACGA, 2016).

The low rating of good corporate governance in Indonesia and the lack of effective control functions of the BOC as the company's internal control mechanisms demonstrate the ineffectiveness of good governance.

The results of this study provide useful information for investors, corporate and government management. The existence of a positive influence of political connections on the value of conglomerate companies in Indonesia means the investment in the company is profitable. Yet, investors are advised to take it into consideration about the negative consequences of politically connected conglomerates. For corporate management, the positive influence of political connections on corporate performance does not necessarily mean that the companies are there to establish political connections. There are benefits gained by having political connections, but there is also a tremendous cost to it.

For the government, the positive influence of political connections on the performance of the company should be seriously taken into account since it can adversely impact the reputation of the country in various aspects. The existence of political rent-seeking results in poor corporate governance. The activities of the BOC have been proven to improve the value of the company. Therefore, it is necessary to revise the existing regulations, namely Law of Limited Liability Companies (*Undang-undang Perseroan Terbatas*) and the laws which regulate the business or the law that regulates the dual position of officials as board of commissioners both in public companies and state companies. The government is also advised to revise existing laws and regulations concerning the qualifications of the BOC so that the company appoints only truly professional BOC for the benefit of the company and its stakeholders. It is expected the company's tendency to seek political rents with the ruler can be minimised and thus it is able to compete fairly.

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The Influence of Effective BOC on Choice of Auditor

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ABSTRACT

The role of board of commissioner in choosing an auditor has increased significantly as a result of 2008 global financial crisis of 2008. This paper examines whether the effectiveness of the BOC (BOC) affects the choice of an auditor. Past research related to the internal mechanisms of Good Corporate Governance (GCG) used the number of commissioners, the proportion of independent commissioners and the number of board meetings as indicators. However, this paper measures the effectiveness of board of commissioners (BOC) by conducting content analysis technique based on the level of independence of the commissioners, board activity, and the number of members, expertise and competence. A sample of 218 companies listed on the Indonesia Stock Exchange between 2013 and 2014 were selected. In this study, descriptive statistics and linear regression models were used for the purpose of revealing the significance of the variables. The results show that companies listed on the Indonesia Stock Exchange have an effective BOC in accordance with related administrative regulations. In addition, the effectiveness of the BOC has a positive effect on the choice of auditor.

Keywords: Auditor, Board of Commissioners, effective, good corporate governance, Indonesia

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INTRODUCTION

Background

The ASEAN Development Bank (ADB, 2014) revealed that Indonesian companies had poor corporate governance practices.

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The results of the Corporate Governance (CG) Scorecard in ASEAN between 2012 and 2013 places Indonesia in 5th place after Thailand, Malaysia, Singapore and the Philippines. Hence, it is clear that, Indonesian companies must improve their corporate governance practices, to enable them to compete with companies in Southeast Asia.

Based on agency theory, Good Corporate Governance (GCG) is essential for a company to avoid conflicts between managers and shareholders or investors (Jensen & Meckling, 1976). In addition, corporate governance allows related parties to ensure managers and other internal parties execute their duties to protect stakeholder interest (Sanda, Mikailu, & Garba, 2005). A company implements GCG in many ways, for instance, by presenting financial statements to the public to promote transparency in their dealings. These point to management accountability in resource allocation that they have entrusted to stakeholders (Elzan, Manzilathfiah, Pupung, & Harlianto, 2015). However, there is controversy surrounding how to properly obtain financial statements with a high-level of reliability.

Yesemin (2013) argues there is a substitution or complementary relationship between corporate governance and audit quality. Based on the substitution effect, Williamson (1983) states that better corporate governance mechanisms may replace higher quality external audits, hence, the need for qualified auditors will decrease. Otherwise, in accordance with the complementary relationship, better corporate governance mechanism will drive the need for more qualified auditors to ensure quality of financial reporting. In accordance with the insurance hypothesis, the company will consider being audited by a qualified auditor in any case to improve the quality of their reporting (Wallace, 2004). The insurance hypothesis also drives companies to choose big, well-known auditors (DeAngelo, 1981) to provide a fair and accurate financial report to investors. Stakeholders are more confident when the company is audited by a publicly trusted audit firm. Francis (2004) analyses the comprehensive prior theory and finds the Big Four auditors provide better assured services to their clients.

Independent auditors, one of the corporate governance external mechanisms, mitigate agency problems and reduce information asymmetry (Darmadi, 2016). Hassan, Hassan, Iqbal and Khan (2014) state that audits aim to achieve accountability within a company. Therefore, a high-quality audit is very important to corporate governance. Furthermore, independent auditors play a role in monitoring the relationship between managers and shareholders in order to minimise conflicts of interest that naturally occur between those parties (Elzan et al., 2015). Elzan et al. (2015) report that most auditors in Indonesia are cost focused instead of brand/quality focused. This is aggravated by the fact most companies in Indonesia place considerable weight on audit fee when choosing their auditor. This finding is consistent with that of Khan, Muttakin and Siddiqui (2015) in Bangladesh.

Generally, a company will consider various things before selecting a public accounting firm. Based on the framework of good governance, companies should prioritise the quality of the auditor during the selection process. There have been extensive studies on the effect of corporate governance mechanisms on auditor quality, in China (Leung & Cheng, 2014; Lin & Liu, 2009) and Bangladesh (Karim, Zijl, & Molah, 2013; Khan et al., 2015) while in Indonesia, Maharani (2012); Markali and Rudiawarni (2012); Trisnawati and Hermawan (2013); Putra (2014). These studies used a proxy of board size, family ownership, capital ownership and audit committee effectiveness as a mechanism for the implementation of corporate governance. Meanwhile, the effectiveness of corporate governance focuses on internal mechanisms, such as the effectiveness of board of commissioners. This study attempts to address the limitations of previous studies (Putra, 2014; Lin & Liu, 2009) that only use the size of the board of commissioners (BOC) as a measurement when it is unable to completely describe the performance of the board as a whole. Other measurements that are commonly used in previous research include the proportion of independent commissioners in a company (Marakali & Rudiawarni, 2012).

Most studies measure audit quality by using a dummy variable (Karim et al., 2013; Lin & Liu, 2009; Maharani, 2012; Markali & Rudiawarni, 2012). Nevertheless, this study uses the auditor's rankings to measure auditor quality. All public accounting firms (PAF) in Indonesia, both international and local affiliated, are ranked according to their revenue. Firm size is measured based on annual income earned for services provided to audited enterprises. This measurement refers to the study of DeAngelo (1981) which describes the correlation of audit quality and PAF, the bigger the PAF, the higher the perceived audit quality.

Agency Theory

Agency theory is frequently associated with corporate governance. Suhartati (2013) states that agency theory is important in understanding of corporate governance. Jensen and Meckling (1976) define managers as the agent and the shareholders as the principal. Shareholders therefore delegate decision-making to the manager as agent. Conflicts between the agent and principal gives rise to agency problems. Jensen and Meckling (1976) argue that agency problems eventually lead to agency costs. Agency cost include monitoring costs, bonding cost, and residual losses. Monitoring costs represent expenditures used to control the divergent activities of agents, for example, audit fees, budgetary constraints and operating regulations.

Corporate Governance

Corporate governance is a popular good governance concept and is widely applied in the management of modern organisations. According to Hasan and Butt (2009), corporate governance is defined as the philosophy and mechanisms related to value creation for shareholders. Abor (2007) states that corporate governance refers to how companies should run, organise and regulate the management. In this case, corporate governance will contribute to the goodwill of the company and an increase in trust of the investors. Meanwhile, Rocca (2007) defines corporate governance as a system for making decisions that can be used by the company to solve any conflicts that occur between existing stakeholders. Corporate governance mechanisms include internal and external controls that monitor management activity, corporate policies, the implementations and decisions of companies, their agents/branches, and affected stakeholders. Internal corporate governance can be achieved by implementing monitoring activities and taking corrective actions, for example, using the board of commissioner, internal auditors, managerial ownership, and remunerations. External corporate governance controls on the other hand come from outside of the company, and include the use of the government regulations, debt covenants, media pressure and competition.

How BOC influences the choice of an Auditor

In Indonesia, the structure of BOC is based on a two-tier system, like in Europe. This system consists of the board of directors that manages the company and the BOC responsible for supervising the management of the company. As its duty is to monitor company activities, the BOC is an effective internal control mechanism of corporate governance. It plays an important role in providing reliable financial reports of the companies. The existence of a BOC influences the quality of their financial reporting. It is also used to measure fraudulent statements by managers. Furthermore, Suhartati (2013) argues that in the selection of public accounting firms, commissioners may establish audit committees to assist in their duties and functions and to provide credible financial statements. The commissioner should be responsible for selecting a qualified and independent auditor. According to Putra (2014), a company with a larger number of commissioners is most likely to choose one of the top 10 auditors. Lin and Liu (2009) find a positive and significant relationship between the number of supervisory board members and the selection of a high-quality auditor. This finding is consistent with previous studies (Maharani, 2012; Markali & Rudiawarni, 2012) which found independent commissioners positively affect the choice of high-quality auditors. From the above, the following hypothesis is proposed:

Ha: The effectiveness of the BOC has a positive effect on the choice of auditor.

METHODS

The populations in this study comprised companies listed on the Indonesia Stock Exchange between 2013 and 2014. The sample size of 218 companies are described in Table 1.

Table 1
Sample selection

No	Criteria	2013	2014	Total
1	Company listed in Indonesia Stock Exchange	528	528	1.056
2	Company that did not disclose data regarding the research (Incomplete data)	(391)	(348)	(739)
3	Outlier data*	(38)	(61)	(99)
Total of analysis unit		99	119	218

*Base on z-score test with z score = 3.00 – 4.00 (Hair, 1998)

Dependent Variable: Auditor's Choice

The measurement of audit quality remains a debatable issues (Ianniello, Mainardi, & Rossi, 2013). DeAngelo (1981) describes audit quality as the auditor's ability to detect anomalies (errors or fraud) and reports them to the public in an audit report. Previous studies have used income/accounting firm size as the proxy of auditor quality (Farag & Elias, 2011; Hoitash, Markelevich, & Barragato, 2007; Karim et al., 2013; Lin & Liu, 2009; Nazri, Smith, & Ismail, 2012; Solikhah, 2016). This research measures auditor quality based on the accounting firm's annual income. This measurement refers to DeAngelo (1981) who states that audit quality can be drawn from an auditor's firm size as the bigger the accounting firm, the higher the audit quality. Maharani (2012) reveals that larger public accounting firms as measured by their revenue, will have a higher audit quality. Annual income data of the public accounting firm is obtained through the Financial Professional Development Centre of the Ministry of Finance of the Republic of Indonesia.

Independent Variable: The Effectiveness of Board of Commissioners

To determine the effectiveness of the board of commissioners, this paper adopts a list of statements (checklist) developed by Trisnawati and Hermawan (2013) which includes: independence, commissioners' activities, the number of commissioners', expertise and competencies that have been adapted to the conditions in Indonesia. The statement list consists of 17 statements using three categories of assessment, excellent (given a score of 3), good (given a score of 2) and poor (given a score of 1). There are six statements relating to board independence; six statements relating to board activities; one statement regarding board size and four statements relating to board expertise and competency.

Data Analysis Technique

Data was analysed using a descriptive statistical technique, while the hypothesis was analysed using ordinary least squares. Before the data was analysed using OLS, it was tested using a classical assumption consisting of normality, multicollinearity, heteroscedasticity and autocorrelation. The data has met all requirements, so the regression model has satisfied the best linear un-bias estimation.

RESULTS

Table 2
Auditor's choice by Indonesian listed companies 2013 - 2014

No	Criteria	Frequent	Percentage
1	Audited by Big 4 auditor	129	59.1%
2	Audited by Non-Big 4 auditor	89	40.8%
Total		218	100%

From the results presented in Table 2, a high quality of PAF which is categorised as the Big 4 PAF is selected by most companies listed on the Indonesian Stock Exchange. There were 59.1% companies in any given year that chose one of the Big 4 PAFs and this was greater than non-Big 4 PAF (40.8%). This indicates most companies in Indonesia select high quality PAFs to audit their financial information. The table below is a descriptive statistical analysis of auditor choice and the commissioners' effectiveness scores in the companies listed on the Indonesian Stock Exchange (2013 and 2014).

Table 3
Statistic descriptive of variable

Variable	N	Mean	Maximum	Minimum	Standard Deviation
Auditor choice	218	343,183,351,421	748,727,984,280	1,813,325,816	275,396,386,070
The effectiveness of board of commissioners	218	39.47	49	29	4.03

Auditor Quality

In this paper, auditor quality was measured using PAF's annual revenue. The Big 4 accounting firms in Indonesia have an average revenue above 300 billion Rupiah per annum. Table 3 shows that the income received by large PAFs and small PAFs in Indonesia varies considerably.

The Effectiveness of the Board of Commissioners

The effectiveness score of the BOC in the sample companies has a maximum value of 49 and minimum value of 29 (Table 3). The average score is 39.47. The maximum score is 51, so the average score of BOC effectiveness of the sample is 77%. This research also creates a distributional table to categorise the effectiveness score of the board of commissioners. Table 4 shows the frequency analysis of the effectiveness scores between 2013 and 2014. Based on Indonesian regulation of the board of commissioners, most companies (60.6%) have met the requirements of existing legislation in Indonesia in terms of quantity, independence, activity and competence. As an internal mechanism of governance, the BOC carry out their roles and responsibilities as controls for the activities of the company.

Table 4
Frequency analysis of commissioners effectiveness score

No	Interval	Criteria	Frequency	Percentage
1.	17 - 28	Less effective	0	0%
2.	29 - 40	Effective	132	60.6%
3.	41 - 52	Very effective	86	39.4%
Total			218	100%

Table 5
Ordinary least square results

	Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1,534,416.657	154,648.145		-9.922	.000
	Comis_Board	38,225.004	4,184.904	.559	9.134	.000

a. Dependent Variable: Auditor Choice

In Table 5, the regression equation is:

AUD_{it} = -1,534,416.657 + 38,225.004 $COM_{it} + e_{it}$

AUD_{it} = Choice of auditor, measured by the accounting firm's annual income

COM_{it} = Effectiveness of BOC, measured using a checklist that includes board independence, board activities, board size, board expertise and competence.

DISCUSSION

An analysis using OLS showed the effectiveness of the commissioners has a positive effect on the choice of the auditor, thus the hypothesis is accepted. More effective commissioners will drive the company to choose a better qualified PAF. This finding is consistent with that of Suhartati (2013) who states that there is a positive and significant correlation between the effectiveness of the BOC and audit quality. According to the agency theory, there may be a conflict between the principal and agent (known also as an agency problem). In this case, agency problems can be avoided by evaluating the agent's performance. This can be achieved through the use of internal mechanisms of corporate governance. Furthermore, the implementation of corporate governance by internal mechanisms can be achieved by establishing a board of commissioners.

The BOC have a duty to its stakeholders as well as possess the authority to monitor all management activities and oversee the implementation of policies adopted by the management. As an internal mechanism of corporate governance, the BOC is expected to minimise agency problems between the board of directors and the shareholders. To effectively monitor activities, competent commissioners are essential, such as those with considerable experience in the field and those who have educational backgrounds in the same area. In addition, the number of commissioners is important, Lin and Liu (2009); Maharani (2012); Markali and Rudiawarni (2012); Putra (2014) found that the number of commissioners will affect the selection of qualified external auditors. Therefore, the BOC will run effectively.

If the BOC is effective, they will call for transparent financial reporting to minimise information asymmetry that may occur between management and shareholders. Audit services by high quality public accounting firms is needed to create and align corporate information, particularly those related to financial statements. In addition, choosing BOC qualified public accountant firm is the duty of the Board. This encourages management to produce reliable information and to be accountable to its stakeholders.

CONCLUSION

The results show that companies listed on the Indonesian Stock Exchange in 2013 and 2014 have an effective BOC in accordance with the administrative regulations. This paper concludes that a more effective BOC will encourage the company to choose a more qualified public accounting firm. Moreover, a measurement model of commissioners' effectiveness score is dynamic, thus future research is expected to employ an adapted model with the new regulations. Further research may also consider using board performance BOC to measure the effectiveness of each commissioner, as the performance of the council goes beyond merely obeying the rules of quantity and independence. This paper contributes to a better understanding of an aspect of internal governance mechanisms to improve the quality and reliability of financial reporting. To the regulator, this paper may contribute as consideration in creating policy related to good corporate governance in Indonesia.

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Board of Directors' Gender, Managerial Ownership and Corporate Risk-taking: Evidence from Indonesia

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ABSTRACT

This study examined the influence of gender diversity among company boards of directors and managerial ownership on corporate risk-taking. The sample was manufacturing companies listed on the Indonesian Stock Exchange from 2010 to 2013 selected using the purposive sampling method. Data was examined using multiple regression methods. The results showed that gender diversity on a board of directors (BOD) and managerial ownership have no significant effect on corporate risk-taking. This is likely due to the relatively low percentage of both variables in Indonesia, thus, they do not tend to affect corporate risk-taking decisions. The study recommends increasing gender diversity and managerial ownership in the corporate risk-taking process towards sustainable business practices.

Keywords: Board of directors, corporate risk-taking, gender diversity, managerial ownership, ownership structure

INTRODUCTION

Corporate risk-taking is one way of improving a company's profitability and performance which in turn will increase shareholder's wealth. The BOD (BOD) has an important role in the company's operations, including corporate risk-taking. Risk-taking itself has a positive impact on the long-term growth of the company (Faccio, Marchica, & Mura, 2011).

Shareholders are starting to demand boards of directors take on increasing roles and responsibility in order to fulfil their goals; one way is through corporate

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diversification. The diversity of directors can be measured across the following variables - age, ethnicity, gender, experience, educational background, and socio-economic status (Jackson & Alvarez, 1992; Sessa & Jackson, 1995). Recently, gender diversity at higher levels of management has become a focus as it has been shown to result in more effective decision making.

This research examined the role of women at higher levels of management because the number of women BOD has increased year on year recently. A study by the Centre for Governance, Institutions and Organisations (CGIO), National Singapore University Business School in 2016 found a growing number of women directors in Asia Pacific region from 2013 to 2014 (increased from 9.4% to 10.2%). Specifically, the percentage of female directors in Indonesia increased by 0.1% from 11% in 2013 to 11.1% in 2014.

In addition to the gender dimension, Laeven and Levine (2009) reported that in the management of banks, corporate risk-taking is also influenced by ownership structure. Previous researches found ownership structure affects company operations which will impact on its goals of value maximisation (Tam & Sze-Tan, 2007; Wahyudi & Pawestri, 2006). Jensen and Meckling (1976) opined that one way to overcome agency problem is by improving the ownership management structure so that the entity can reduce the conflict of interests between principal and agent. Wright, Ferris and Awasthi (1996) found that there is a positive relationship between managerial ownership and corporate risk-taking if the shareholding is low (but it has a negative impact if the share proportion is high).

Many studies have been carried out on the role of gender diversity and managerial ownership in corporate risk-taking in developed countries, but not many has focused on developing countries such as Indonesia. This research examines how gender diversity and managerial ownership can reduce agency problems to align the interests of shareholders and management. It is assumed that management-cum-shareholders will tend to make greater effort in the interests of the company.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Agency and Corporate Governance Theories

Agency theory (Eisenhardt, 1998) explains organisational behaviours by emphasising the relationship between the manager as the company's "agent", and the shareholder as the "principal". According to this theory, an individual will act based on his/her interests, so that conflicts of interests are unavoidable (Nordberg, 2011). Eisenhardt (1989) said that there are three assumptions of human nature; self-interest, bounded rationality, and risk aversion.

Corporate Governance (CG) is an oversight mechanism and managing system of a company (Forum for Corporate Governance Indonesia [FCGI], 2002). The CG mechanisms can be divided into two categories, namely internal and external governance. The BOD is an important component of internal governance because of its role in determining the company's vision and strategy. Jensen (1993) described the important role played by the BOD by providing suggestions, monitoring the management, carrying out recruitment and determining the remuneration of senior managers.

Besides the role of the board, the other important component is the ownership structure, specifically the managerial ownership, studied in this research, which can reduce the conflict of interests between management and shareholders (Carter, Souza, Simkins, & Simpson, 2007; Crutchly & Hansen, 1989; Iturriaga & Sanz, 2001; Leland & Pyle, 1977). Jensen and Meckling (1976) asserted that in order to reduce the conflict between management and shareholders, it is possible to consider increasing the managerial ownership of the company. This can better align management's actions with the shareholders' objectives as the latter are also considered owner-shareholders.

Resource Dependency Theory

This theory is often used to explain gender diversity. According to Hillman, Canella and Paetzold (2000), BOD has an important role in connecting the company with other external sources through communication channels and suggestions, advice, and decisions. Hillman et al. (2000) report diversity on the BOD will benefit the company by securing essential resources for it. A diverse BOD will lead to substantial resources and a variety of potential information enabling better decision-making, including potentially risky financial decisions.

Empirical evidence from Hillman et al. (2000) pointed to several factors that influence the representation of women on boards, including strategy, organisational size, network effect, and type of industry. Gender diversity is supported by previous researches (Joshi & Roh, 2009; Miller & Triana, 2009). More specifically, it was found that a homogeneous group can inhibit innovation (Miller & Triana, 2009), while a heterogeneous one provides the organisation with a wider range of knowledge and insights, for greater innovation and better quality of decision-making (Hoffman, 1959; Joshi & Roh, 2009). This includes decision-making in determining the level of corporate risk.

In contrast, researchers have shown that a heterogeneous group can also trigger conflicts, reduce the effectiveness of communications and cause difficulties in decision-making (Carpenter, 2002; Smith et al., 2006). However, a more diverse BOD would generally enable a more objective and careful evaluation of alternative options prior to taking a decision (Coffey & Wang, 1998), resulting in better company performance.

Corporate Risk-taking

Based on the above agency theory and resource dependence theory above, corporate risk-taking can be decreased by gender diversity on the BOD and mitigated by the managerial ownership structure.

Risk itself is defined as the deviation of expected and obtained results (Jogiyanto, 2003). Well-managed risk-taking behaviour can be a source of growth, innovation, and welfare for a company. However, excessive risk-taking can threaten a company's going concern, which can, in turn, result in the company going bankrupt.

With regard to risk-taking, managers can behave as risk-averse, risk neutral, or risk-taking agents. Tsai and Luan (2016) found several factors which increase corporate risk-taking behaviour - high percentages of ownership, better past performances, investment experience, and access to required resources, and relationship between governments and banks.

Gender Diversity

Croson and Gneezy (2009) found the following on gender diversity and risk-taking behaviour:

- Emotions: Women have stronger emotional feelings than men (Harshman & Paivio, 1987); hence, they tend to be more nervous and fearful when facing a negative result or outcome (Brody 1993; Frank Fujita, Ed Diener, & Ed Sandvik, 1991), so, they will naturally be more risk-averse when facing a risky situation.
- Overconfidence: both men and women have a tendency to be overconfident, but men will be more confident of success when facing uncertain situations compared with women (Deaux & Farris 1977; Lichtenstein, Fischhoff, & Phillips, 1982; Lundeberg, Fox, & Punccohar, 1994).
- Risk as a challenge or a threat: men tend to see risky situations as an attractive challenge, whereas women define a risky situation as a threat which they will try to avoid.

Managerial Ownership

According to Christiawan and Targian (2007), managerial ownership is a structure where management is also shareholders in the company. Davies, Hillier and McColgan (2005) defined managerial ownership as all the members of the BOD owning shares in the company. Managers are given the opportunity to become shareholders with the expectation that it will result in good performances (Nuringsih, 2005). According to Jensen and Meckling (1976), agency costs will decrease when managerial ownership is increased due to the alignment between the principal and agent.

Morck, Shleifer and Vishny (1988) explained that managerial ownership helps align the interests of principals and agents (incentive alignment effect) because the tendency for managers to act in their personal interest will be reduced. On the other hand, managerial ownership can also encourage management to act only for their personal benefit and interest (entrenchment effect).

Earlier studies that have investigated the association between gender diversity, managerial ownership and corporate risk-taking are shown in the following table.

Table 1
Previous research

No.	Researchers (Year)	Title	Research Findings
1	Adhariani, Sciulli and Clift (2017)	Financial management and corporate governance from the feminist ethics of care perspective	Companies having "feminine" characteristics tend to maintain better relationships with stakeholders and result in stable financial performances.
2	Khaw, Liao, Tripe and Wongchoti (2016)	Gender diversity, state control, and corporate risk-taking: Evidence from China.	Lower gender diversity increases the incidence of corporate risk-taking in China which cannot be mitigated by the decline in state ownership as the impact of NTS (Non-Tradable Share) reform.
3	Faccio, Marchica and Mura (2016)	CEO Gender, Corporate Risk-Taking, and the Efficiency of Capital Allocation	CEO Gender significantly affects corporate risk-taking. Companies led by females tend to choose financing and investment options with lower risk compared to male CEOs. ROA volatility of companies led by female CEOs is lower than that of companies led by male CEOs.
4	Sila, Gonzalez and Hagendorff (2015)	Women on board: Does boardroom gender diversity affect firm risk?	Female boards of directors have no influence on the equity risk. The representation of female directors also does not have an impact on policies or operational risks.
5	Aryani and Hanani (2011)	The influence of gender diversity on boards of commissioners, boards of directors, and managerial ownership on firm performances.	Gender diversity on boards of commissioners has a negative association with firm performance, while gender diversity on the BOD and managerial ownership have no influence on firm performance.
6	Murni (2015)	The influence of managerial ownership, institutional ownership and voluntary disclosure on financial performance and its implication on corporate value	• Managerial ownership has a partial significant effect on the financial performance of companies listed on the Indonesian Stock Exchange • Managerial ownership has a significant effect on firm value partially and simultaneously
7	Christiawan and Tarigan (2007)	Managerial ownership, debt policies, performance and firm value	• A manager who is also a shareholder tends to be more careful in debt policies. • The average value of firms with managerial ownership is better than those without managerial ownership. • The average performance of firms with and without managerial ownership is equal.
8	Nuringsih (2005)	Analysis of the impact of managerial ownership, debt policy, ROA, and firm size on dividend policy: A Study of 1995-1996	Managerial ownership has a positive impact on dividend policy. This shows that the greater the involvement of managers in the form of ownership, the less optimal the diversification of assets/portfolio becomes, causing managers to demand a higher dividend.

Table 1 *(continue)*

No.	Researchers (Year)	Title	Research Findings
9	Wright, Ferris and Awasthi (1996)	Impact of corporate insider, blockholder, and institutional equity ownership on firm risk-taking	Corporate insiders can influence corporate risk-taking. When the ownership of corporate insiders is low, it can have a positive impact on corporate risk-taking. However, when insiders increase their ownership, the corporate risk-taking tends to be lower.

Based on the above descriptions, it can be concluded that the influence of gender diversity on the BOD is mixed. Managerial ownership has an impact on company value and performance, but it is indirectly associated with corporate risk-taking. Several studies that investigated the direct association also found inconsistent results.

The inconsistencies in previous researches created research gaps which motivated this study. The fact that only 11.1% of BOD in Indonesia are women in 2014 (CGIO, 2016) indicates a glass ceiling for women to achieve the highest positions in a company. This means that only tough women can climb the ladder and they must be of high calibre. It is still a question though, whether these strong women, together with managerial ownership, can mitigate excessive corporate risk-taking.

Hypothesis Development

The Effect of Gender Diversity of Directors on Corporate Risk-taking

Several studies on behavioural considerations confirm the importance of gender diversity in a company's decision-making (Adams & Ferreira, 2009; Gul, Srinidhi, & Ng, 2011; Huang & Kisgen, 2013; Liu, Wei, & Xie, 2014). Adam and Ferreira (2009) found women directors tend to have a better attendance record and are more active in monitoring activities.

Faccio, Marchica and Mura (2016) documented that European companies led by female CEOs have lower leverage and a higher survival rate. Levi, Li and Zhang (2014) found that companies dominated by male directors tend to be more active in mergers and acquisitions and pay larger acquisition premiums.

Additionally, compared with men, women basically tend to avoid uncertainty, and are not individualists (Brock, 2008; Jogulu & Vijayasingham, 2015; Litwin, 2011; Morrison, 2009). Having female BOD on the board will change the flow of decision-making process (Elstad & Ladegard, 2012). Lundeberg et al. (1994) concluded that overall women are not as confident as men. In addition, women tend to be more risk-averse compared with men (Beckmann & Menkhoff, 2008; Bellucci, Borisov, & Zazzaro, 2010). Therefore, the hypothesis is formulated as follows:

H1: Gender diversity on a BOD negatively affects corporate risk-taking

The Effect of Managerial Ownership on Corporate Risk-taking

A director's positions is about 10 years, whereas there is no such time limit for shareholders. Therefore, directors who are also shareholders tend to carry out effective strategies and take less risk during their period in office (Godhum & Ayadi, 2003). Wright et al. (1996) divided managerial ownership into two categories of low and high; the low category refers to percentages of managerial ownership up to 7.5%, whereas high is for over 7.5%. The authors (1996) found that at the higher level, the relationship between managerial ownership and corporate risk-taking is negative, while at lower levels, it's the reverse.

Amihud and Lev (1981) opined that if managers have a large proportion of shares, they are less motivated to be risk-averse when evaluating merger opportunities because, with greater managerial ownership, the interests of shareholders and managers are more closely aligned, hence reducing the latter's tendency to be risk-averse in taking on profitable projects. Thus, gender diversity and managerial ownership will create a balanced risk-taking. Therefore, the second hypothesis is proposed as follows.

H2: Proportion of managerial ownership positively affects corporate risk-taking.

METHODS

The regression model of this research is as follows:

$$RISK_{it} = \propto + \beta_1 GEND_{it} + \beta_2 MANAG_{it} + \beta_3 PROF_{it} + \beta_4 LEV_{it} + \beta_5 GROWTH_{it} + \beta_6 SIZE_{it} + \beta_7 AGE_{it} + \epsilon_{it} \quad (1)$$

The following are variables used in this research:

Table 2
Operational definitions of variables

Variable	Definitions
$RISK_{it}$	Risk-taking, measured by the volatility of return on assets over overlapping three-year periods.
$GEND_{it}$	Directors' gender diversity, measured by the percentage of female directors compared with the total number of directors in a company.
$MANAG_{it}$	Managerial ownership, measured by the number of shares held by members of the board of directors.
$PROF_{it}$	Company's profitability, measured by dividing earnings before interest and tax to total assets.
LEV_{it}	Leverage, measured by dividing total debt by total assets.
$GROWTH_{it}$	Company's growth, measured by the annual growth rate of sales.
$SIZE_{it}$	The size of a company, measured by a natural logarithm of total assets.
AGE_{it}	Age of the company, measured by the number of years from the establishment of the firm to the year of observation.

Operationalisation of Variables

Dependent Variable

The dependent variable in this research is corporate risk-taking. Based on Boubakri, Cosset and Saffar (2013); Khaw, Liao, Tripe and Wongchoti (2006); Facio et al. (2011); John, Litov and Yeung (2008), corporate risk-taking is measured by volatilities of the return on assets (ROA) for three years. For example, risk-taking in 2013 was measured from the volatility of ROA from 2013 to 2015. The measurement of three years forward looking is due to the fact that current decision-making will affect a company's profitability two years later. Return on assets is used to evaluate how efficient the management is at using its assets to generate earnings before interest and tax (EBIT). Volatility is used to measure risk-taking as it represents uncertainty, which is the primary characteristic of risk.

Independent Variables

Gender Diversity in the Board of Directors. Gender diversity is measured by the percentage of female directors compared with the total number of directors in a company. The female directors are considered to avoid uncertainty and tend to be risk-averse, hence, reducing corporate risk-taking behaviour. Below is the measurement:

$$\mathrm{GEND} = \frac{\text{Female directors}}{\text{Total number of directors}} \qquad (2)$$

Managerial Ownership

According to Iturriaga and Sanz (2001) and Aryani and Hanani (2011), managerial ownership is measured by the percentage of shares owned by the BOD and top management. Managerial ownership is predicted to increase corporate risk-taking.

Control Variables

Company's Profitability. The company's profitability is measured by the ratio of return on assets (ROA) and is predicted to have a negative association with corporate risk-taking as companies with lower profitability tend to be more risk-taking (Faccio et al., 2011).

The following is the measurement of ROA:

$$\mathrm{ROA} = \frac{\text{EBIT}}{\text{Total Assets}} \qquad (3)$$

Leverage. This variable represents how much assets are financed by debt. In this research, we use a debt to asset ratio to measure leverage, which is expected to have a positive association toward corporate risk-taking (Boubakri et al., 2013b; Facio et al., 2011). Leverage is calculated as the debt to asset ratio (DAR).

$$\mathrm{DAR} = \frac{\text{Total Debt}}{\text{Total Assets}} \qquad (4)$$

Company's Growth. Growth is measured by the percentage of this year's sales compared with last year's.

$$\mathrm{GROWTH} = \frac{\text{Sales}_t - \text{Sales}_{t-1}}{\text{Sales}_{t-1}} \qquad (5)$$

Sales growth is used to determine the effect of firm-specific growth opportunities on corporate risk-taking (Boubakri et al., 2013b). It is expected that sales growth is positively related to corporate risk-taking, because established companies tend to take more risks.

Size of the Company. Size is measured by the natural logarithm of company's total assets representing the company's capability in managing its assets. The size of the company is expected to have a negative impact on corporate risk-taking because smaller companies tend to be more risk-taking compared with larger ones (Boubakri et al., 2013b; Faccio et al., 2011; John et al., 2008).

Age of the Company. The age of the company is the number of years from the establishment of the firm to the year of observation. The company's age is expected to have a negative association with regard to corporate risk-taking because younger companies tend to be more risk-taking than established ones (Boubakri et al., 2013b; Faccio et al., 2011; John et al., 2008).

Sampling Method

The sample used in this study is manufacturing companies listed on the Indonesian Stock Exchange from 2010 to 2013. The researchers used quantitative and secondary data from DATASTREAM, EIKON, and companies' annual reports. A purposive sampling method was used with the following criteria:

1. Manufacturing companies listed on the Indonesian Stock Exchange from 2010 to 2013. Companies from the same industry usually have similar characteristics so that it can be expected that regression results were not the result of bias. One industry was chosen since different industries may have different factors influencing the decision-making process.
2. Annual report data was available for the period 2010 to 2013.
3. Having complete data needed for operationalisation variables.
4. The company's financial report ended on December 31st.
5. Companies were in a healthy condition, hence ones with negative equity were excluded as management might exhibit different risk-taking behaviour.

ANALYSIS

This research sampled 464 manufacturing companies listed on the Indonesian Stock Exchange from 2010 to 2013. The data was unbalanced as the total number of companies in each year were not the same. In 2013, there were 127 companies, 122 in 2012, 108 in 2011, and 107 in 2010.

Table 3 shows the distribution of directors' gender diversity. It can be seen the average number of female directors from 2010 to 2013 had decreased. The structure of boards of directors in Indonesia is still male-dominated because there were only around 40 companies with any female directors. Table 4 shows there are many companies in Indonesia with managerial ownership, but that the percentage is relatively low (on average about 2%).

Table 3
Sample distribution of directors' gender diversity

Year	Companies with Female Directors	Average % of Female Directors
2010	45	11.83%
2011	44	11.56%
2012	53	11.48%
2013	44	9.44%

Table 4
Sample distribution of managerial ownership

Year	Companies with Managerial Ownership	Average % Managerial Ownership
2010	61	2.24%
2011	60	2.18%
2012	67	2.21%
2013	67	2.11%

Descriptive Statistics

Table 5 shows that the RISK variable, which is the primary variable in this research, has an average value of 0.0374 with a minimum value of 0.0007485 and a maximum value of 0.6976252. These results show that the average volatility of return on assets in Indonesia's manufacturing companies is 0.0374. There is a company which has deviation from the average during three years resulted in maximum value of 0.6976252.

Table 5
Descriptive statistics variable of research

Variable	Minimum	Maximum	Mean	Std. Deviation
RISK	0.0007485	0.6976252	0.0374572	0.0524144
GEND	0	0.75	0.1102485	0.1560472
MANAG	0	0.2809	0.0218708	0.0536026
PROF	-0.5088585	0.8556663	0.0943909	0.1252563
LEV	0	0.9010693	0.246239	0.1903791
GROWTH	-0.7341233	3.48107	0.1787416	0.3282221
SIZE (Billions Rp)	10,582	213,994	6,387.31	18,409.96
AGE (years)	1	96	34.24784	13.23834

Remarks:
RISK = corporate risk-taking; **GEND** = percentage of female directors compared with the total number of directors; **MANAG** = Managerial ownership, measured by the number of shares held by the BOD and commissioners; **PROF** = Company's profitability; **LEV**= Leverage, measured by dividing total debt by total assets; **GROWTH** = Company's growth; **SIZE** = Size of the company, measured by the company's total assets; **AGE** = age of the company

The average percentage of GEND was 11.02%. The maximum value of GEND was 75%, belonging to MRAT in 2010 with three female directors from a board of four directors. With an average value of GEND of 11.02%, it shows that most manufacturing companies have a low percentage of director gender diversity and are still dominated by men.

The MANAG variable had minimum and maximum values of 0% and 28.09%. This shows that there were companies whose directors had no shares in the company, but there was one company (PT BRAM) which had a managerial ownership of 28.09%. The average value of MANAG was very low at 2.18%.

The control variables used in this research were PROF, LEV, GROWTH, SIZE, and AGE. The maximum value of PROF was claimed by MLBI in 2013, whereas the minimum value of PROF was held by ETWA in 2011. The PROF variable had an average value of 0.094 with a standard deviation of 0.1252. These values show that manufacturing companies in Indonesia mostly have a relatively low level of efficiency in using their assets to generate EBIT.

The minimum level for LEV in this research was 0, which shows that there was one company that had no debt or did not use external finance to support its assets. The maximum value of LEV was 0.9, claimed by HDTX in 2010. The average value for LEV was 0.24 with a standard deviation of 0.19.

Growth had a minimum value of -0.7341 (PT KBRI), which shows that the company's sales declined to 73.41% of their initial value. Meanwhile, ICBP had the biggest growth of sales in 2010. The average growth in sales among Indonesia's manufacturing companies was 17.87%.

The minimum value of SIZE was AKKU in 2012 with total assets IDR 10,582 billion, whereas the biggest value of SIZE was IDR 213.994 billion owned by well-known car producer ASII in 2013. SIZE's component shows that the size of manufacturing company assets in Indonesia is varied, with a standard deviation of IDR 18,409.96 billion.

The AGE variable had a minimum value of 1 year (ICBP), while the maximum value of AGE belonged to GDYR which was established in 1917. The average value of AGE was 34.16, meaning that the average age of manufacturing companies in this research was 34 years.

Hypothesis Testing

The results from regression model are shown below.

Table 6
Regression model results

Variable	Expected Sign	Coef	Prob
GEND	-	-0.01405	0.154
MANAG	+	-0.00716	0.4435
PROF	-	-0.03459	0.0305**
LEV	+	-0.03575	0.0005***
GROWTH	+	0.00523	0.177
SIZE	-	-0.00401	0.0055***
AGE	-	0.00022	0.144
N		464	
R^2		0.0530	
Prob (F-statistic)		0.0015	

Remarks:
***Significant to level α = 1% (one-tailed)
**Significant to level α = 5% (one-tailed)
*Significant to level α = 10% (one-tailed)

Coefficient of Determination Model Analysis (R2)

Based on regression results, it can be seen that the value of R-squared is 5.3%. This result shows that the independent variables, GEND, MANAG, PROF, LEV, SIZE, and AGE have only a 5.3% probability of explaining the dependent variable, RISK. The rest is explained by other factors outside the model.

Partial Significant Model Analysis (t-Test)

Based on the regression results, it can be seen that the most influential variables with regard to RISK are PROF, SIZE, and LEV, whereas other variables, including the main ones (GEND, MANAG), do not have a significant influence on RISK. The variables for LEV and SIZE both give a significantly negative effect, meaning that companies with low leverage tend to take more risk than companies with higher leverage and that smaller companies tend to be more risk-taking than larger ones.

The PROF variable also gives significantly negative effects (level α = 5%), which means that companies with lower profitability tend to take greater risks compared with companies with higher profitability.

Hypothesis Test Results Analysis

The Effect of Directors' Gender Diversity on Corporate Risk-taking

The first hypothesis is that directors' gender diversity negatively affects corporate risk-taking. Based on the results shown in Table 6, it can be seen that gender diversity on the BOD does not affect corporate risk-taking.

This contradicts resource dependence theory which suggests that diversity on a BOD has the potential to provide information in considering the risks faced by companies, thus enabling the evaluation of alternative decisions in a more careful and objective manner. This result is not consistent with that of Khaw et al. (2016) and Faccio et al. (2016) who found that the volatility of ROA of companies led by female directors is significantly lower than that of male-dominated companies. However, these results are consistent with an earlier research by Sila, Gonzalez and Hagendorff (2015), who found that the representation of female directors does not affect various policy or operational risks.

This inconsistency might be due to the low number of female directors in the sample or it could be that the preponderance of male directors undermines the role played by female directors, as other studies have found that men are generally overconfident and are more willing to take risks (Barber & Odean, 2011).

With regard to resource dependence theory, Hillman et al. (2000) said that one of the factors which affect the representation of women on BOD is the type of industry. For example, in the health industry, which is dominated by women, corporate risk-taking may exist.

The Effect of Managerial Ownership on Corporate Risk-taking

The MANAG variable in Table 6 was also found not to affect corporate risk-taking. This shows that the second hypothesis is also rejected, which contradicts prior research such as Chen and Steiner (1999), who found that managerial ownership is a positive and significant determinant of risk-taking.

Neither does this hypothesis align with the prediction of the agency theory. Tsai and Luan (2016) suggested that one condition which would affect corporate risk-taking behaviour is by increasing the level of managerial ownership. Managerial ownership in Indonesia in this sample was still very low at only 2.18%, which is well below the median score of 7.5% based on Wright et al. (1997). As such, directors-cum-shareholders might well be unable to influence the decisions made by the other directors in a company.

CONCLUSIONS

This study analyse the influence of gender diversity on BOD and managerial ownership on corporate risk-taking in Indonesia. The findings show that neither of these variables has a significant effect on corporate risk-taking. With an average percentage of around 11.02% of female directors, they cannot reduce the risk-taking behaviour of boards of directors made up of largely males who tend to be bolder when it comes to taking risks.

Managerial ownership also has no significant effect on the corporate risk-taking. The proportion of managerial ownership in Indonesia is still relatively low and thus, might not be able to influence corporate risk-taking.

At the theoretical level, although the results are not consistent with predictions from the agency theory and resource dependency theory, two underlying theories used in this study, they reveal that low gender diversity and managerial ownership may contribute to aggressive risk-taking behaviour in Indonesian companies. This study contributes to the debate in the literature on the role of female directors and managerial ownership in corporate risk-taking in a developing country characterised by low investor protection. The practical implication of this study is that investors must demand companies implement other measures in order to mitigate excessive risk-taking or promote higher gender diversity and managerial ownership, which of course, should be complemented by regulations. Future research can consider conducting case studies to further investigate the roles played by female directors and managerial ownership in decision-making related to corporate risk-taking. The case study approach might provide a better understanding of what really is going on in the boardroom and how managerial ownership can shape decisions regarding corporate risk-taking.

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Corporate Governance and Financial Distress

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ABSTRACT

This paper explores mechanisms of corporate governance (board characteristics, audit committee, and audit quality) of Indonesian listed companies and their influence on the likelihood of a financial distress. This study was conducted between 2012 and 2014. The results confirm that the composition of board of commissioners has a significant impact on the likelihood of financial distress, at least in the Indonesian context; the larger the number of Commissioners, the greater is the likelihood of financial distress. Companies with larger numbers of Commissioners have not been able to coordinate and communicate and engage in decision-making better than those with smaller numbers. In other words, the marginal value of a larger board size is questionable. There is also a significant relationship between the size of the audit committee and financial distress. It is argued the bigger the audit committee, the greater the likelihood the company experiencing financial distress as it appears to divert focus away from the company's operations. Additionally, the relationship between audit quality and the likelihood of financial distress is insignificant. This suggests that variations in the scale of auditing may not have a significant effect on the possible issuance of audit opinion by the auditor or on the likelihood of financial distress.

Keywords: Audit committee, audit quality, board of commissioners, corporate governance, financial distress

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INTRODUCTION

Good corporate governance (GCG) may be described in terms of the relationship between stakeholders and agency in the company determining its direction and performance. Agency theory addresses the issue of GCG when the fact that the management of a company separate from its owners results in certain agency problems. Agency roles refer to the performed by the board of commissioners and the board of directors charged with the responsibility to manage the company's activities and take a decision on behalf of the owners. The interests of agents can be different from those of the owners. Conflicts of interest can be catastrophic to the company as they can lead to financial distress or even bankruptcy (Rahmawati, 2006).

However, such conflicts can be avoided by implementing a mechanism capable of aligning the interests of shareholders with those of the agency, which in this case, comprises the board of commissioners and the board of directors. The GCG is a control mechanism that seeks to regulate and to manage a business venture with a view to increasing prosperity and accountability so that shareholder value is increased eventually. Often, stock prices increase because of the positive market reaction to the company. An optimistic perception will create positive reaction in the market to boost company performance, including in terms of financial performance. Good financial performance indicates that the company is not experiencing financial pressure problems that could be detrimental to shareholders ultimately.

According to Lang, Lins and Miller (2004), the financial crisis hit Asia in 1997 was partly a result of flaws in the fundamental economic structures of the countries involved. In addition to external factors, the crisis was also caused by internal weaknesses such as a lack of institutional oversight and improper investment decisions. They also identified several causative factors such as weak enforcement of regulations, lack of capital markets, and company ownership skewed towards a particular group or party in the ownership of the company. In short, the economic crisis was exacerbated by weak implementation of GCG principles such as transparency, accountability, responsibility, integrity, and fairness.

It is now generally accepted that GCG is an important factor affecting stable economic growth. This paper examines whether the board of commissioners, the audit committee, and audit quality influence the likelihood of the company experiencing financial distress. To this end, data is obtained from companies listed on the Indonesian Stock Exchange and analysed.

LITERATURE REVIEW

Board of Commissioners and Financial Distress

Some studies have examined the importance of corporate governance in overseeing a company's performance. Pathan, Skully and Wickramanayake (2007) examined the size and independence of the board of directors and their influence on banking performance in Thailand. The study indicates that boards with smaller size are more effective in monitoring the bank manager, while larger boards are more vulnerable to agency problems between company owners and managers. Hermalin and Weisbach (2003) also showed that boards with smaller size are more effective and can provide added value because coordination is easier.

By contrast, Kiel and Nicholson (2002) found a positive relationship between the size of the board and firm performance among large Australian companies. This finding was supported by Abeysekera (2008) who focused on Kenya. The study proved that the number of commissioners nearer to 5 is more effective than one with, say, 14 members. However, other studies have proved the reverse. Studies (Abeysekera, 2008; Nasution & Setiawan, 2007). Andres, Azofra and Lopez (2005) on the contrary suggest the number of commissioners affect control and supervision. According to these studies, a larger board size results in better supervision and management and this helps mitigate financial distress.

Daily and Dalton (1994) investigated the association between two aspects of governance structure - composition of the board and its leadership structure - on company bankruptcy. They concluded that there was indeed a significant correlation between board composition and its leadership structure and the possibility of the company going bankrupt. Hambrick and D'Aveni (1992) pointed out that a dominant Chief Executive Officer (CEO) is more sensitive to bankruptcy of the company. Wardhani (2006) reported the size of the board is positively associated with the likelihood of financial failure. Having more directors lower the chance of the company experiencing financial difficulties, while discharging directors (within limits) decreases company performance and increases the risks of financial distress. With respect to ownership, Wardhani (2006) showed that the possibility of the company experiencing financial pressure remains essentially the same irrespective of percentage of ownership by other stakeholders in the company. Based on these considerations, we hypothesise that:

H1: Board composition has a positive and significant relationship with the likelihood of the company experiencing financial distress.

Audit Committee and Financial Distress

Pierce and Zahra (1992) found that the effectiveness of the audit committee will be increased if the size of the committee increased; this is because the committee will then have more resources to tackle the issues faced by the company. Rahmat, Takiah and Saleh (2008) examined the relationship between the size of the audit committee and financial distress. It was found the size of the audit committee has no significant effect on financial distress. A bigger audit committee distracts the focus of the company to oversee its operations. Therefore, the following hypothesis is proposed:

H2: Audit Committee has positive and significant relationship on the likelihood of financial distress.

Audit Quality and Financial Distress

Mutchler, Hoopwood and McKeon (1997) found that a large-scale public accounting firm (KAP) is more likely to issue audit opinion regarding 'going concern' on a company experiencing financial difficulties. However, Ramadhany (2004) finds that the issue of variable scale auditor (Big Four and Non-Big Four) has no significant effect on the possible issuance of audit opinion regarding 'going concern' and the possibility of financial distress. Therefore the following hypothesis is proposed:

H3: Audit quality has negative and significant relationship with the likelihood of financial distress.

METHODS

Research Model

This study used *Structural Equation Model* (SEM) and *Confirmatory Factor Analysis* (CFA). The approach measures a latent variable by one or more variables observed. The latent variables in this study are the board of directors, audit committees, audit quality and financial *distress*. Figure 1 shows the research model (using CFA).

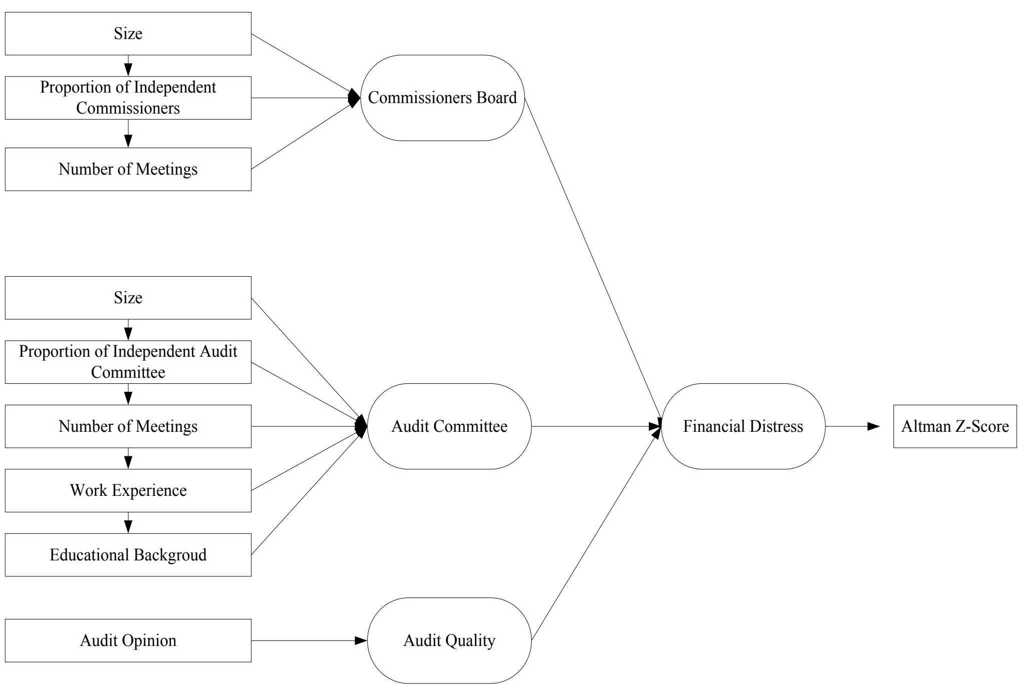

Figure 1. Research model

Latent variables are key variables representing the focus of this study. This type of variable can only be observed indirectly and imperfectly through its effect on the observed variables (Wijanto, 2006).

Board of Commissioners is measured by three indicators, namely board size, the proportion of independent board members, and the number of board meetings. Audit committee is measured by five observed variables, namely size of audit committee, the proportion of independent audit committee, the number of audit committee meetings, audit committee members' experience working as an auditor, and the educational backgrounds of the audit committee's members. Audit quality is measured by two observed variables, 0 namely the external auditor's opinion and the size of audit firm.

Data and Sample Selection

Data used in this research consisted of secondary data annual reports and financial statements of 320 companies listed on the Indonesian Stock Exchange between 2012 and 2014. This information was sourced from the official websites of the Stock Exchange (www.idx.co.id), and each company. Data was also drawn from the capital market research centre at the Indonesian Stock Exchange. To test the hypotheses, data was obtained from listed Indonesian companies. However, financial companies were excluded due to their different features and relations pertaining to the regulatory standards, financial reporting standards and compliance. The period of study was between 2012 and 2014, for two reasons:

1. A large proportion of companies had published their Annual Report.
2. A greater number of companies faced economic and financial problems.

RESULTS

Overall Model Suitability

Analysis of the structural model in SEM began with the testing of the overall model fit using the indicators *Goodness-of-fit Index* (GFI) statistics of *output* LISREL (Hair et al., 1995). Table 1 provides a summary of the critical values concerning the overall suitability of the testing model.

Table 1
Test results related to the overall suitability model

Suitability Criteria Model	Suitability Level Indicator	Model Estimation Result	Suitability Level Model
RMSEA	RMSEA < 0.08	0,035	Close fit
RMSEA	P > 0.05	0.77	Good fit
P (close fit)	Smaller Values of	M* = 0.52	Good fit
ECVI	Independence and closer to	S** = 0.65	
	Saturated model	I*** = 12.76	
AIC	Smaller Values of	M* = 104.99	Good fit
	Independence and closer to	S** = 132.00	
	Saturated model	I*** = 2590.85	
CAIC	Smaller Values of	M* = 234.53	Good fit
	Independence and closer to	S** = 417.00	
	Saturated model	I*** = 2638.35	
NFI	NFI > 0.90	0.98	Good fit
NNFI	NNFI > 0.90	0.99	Good fit
CFI	CFI > 0.90	1.00	Good fit
IFI	IFI > 0.90	1.00	Good fit
RFI	RFI > 0.90	0.97	Good fit
RMR	Standardised RMR < 0.05	0.036	Good fit
GFI	GFI >0.90, good fit; 0.90 < GFI > 0.80, marginal fit	0.96	Good fit

The overall estimation results are based on existing criteria and overall gained marginal values. The results of the analysis focused on the reliability of *the output* for testing the entire model. The overall conclusion is that the model is good (has demonstrated good fit).

Measurement Model Suitability

The measurement model fit test was conducted on each construct separately through an evaluation of the construct validity and reliability (Wijanto, 2006). The aim of this testing was to ensure that the constructs used in this study have met the validity and reliability criteria.

Validity Test

Tests on the validity of each question was shown by the t value and standardised loading factor. Each t value should be larger than the critical value (1.96) and the standardised loading factor should exceed the value of 0.5 (Iqbaria et al., 1997). Invalid questions are not included in further tests. Factor loadings against the latent variables for each indicator are presented in the form of the relationships depicted in the diagram path obtained by running the LISREL program.

The validity and reliability values for each construct of observed variables can be seen in Table 2.

Table 2
Validity and reliability model

No	Observed Variables	Confirmatory Factor Analysis			
		Validity		Reliability	
		SLF	t-value	Construct Reliability (CR>0.70)	Variance Extracted (VE>0.50)
1	BoC1	0.76	12:06		
2	BoC2	0.81	13:26		
3	BoC3	0.80	13:04		
BoC (Board of Commissioners)				0834	0626
1	AC1	0.95	17:41		
2	AC2	0.94	17:47		
3	AC3	0.62	9.82		
4	AC 4	0.69	10.97		
5	AC5	0.66	10.66		
AC (Audit Committee)				0885	0615
1	QoA1	1:00	20:00		
2	QoA 2	0:51	7.78		
QoA (Quality of Audit)				0752	0627

Table 2 shows that all indicators have t values above the critical value of 1.96 and all *the standardised loading factors* were above 0.5. This means that all the indicators are valid, so no indicator needs to be discarded.

Reliability Test

A reliability test aims to test the consistency of the grains that has a question / statement in the questionnaire. Testing the reliability of each indicator was done by calculating the construct reliability and variance extracted from each of the observed variables (Hair et al., 1995). To calculate the reliability construct and variance, this study used the following formula:

$$Construct\ Reliability = \frac{(\Sigma std.loading)^2}{\Sigma \text{std.loading}^2 + \Sigma e_j} \quad (1)$$

$$Variance\ Extracted = \frac{(\Sigma std.loading)^2}{\Sigma \text{std.loading}^2 + \Sigma e_j} \quad (2)$$

Where

std.loading : standardised loading

e_j : measurement error

If construct reliability is greater than 0.70, and extracted variance is greater than 0.50, it can be said that the reliability of the construct is acceptably good (Wijanto, 2008). The figures used to calculate construct reliability and variance were extracted from the output of the standardised solution. The results are summarised in Table 2.

The results of running the program for the three indicators of BoC, five indicators of AC, and two indicators of QoA demonstrate construct reliability values above 0.70

(CR>0.70) and variance values above 0.5 (VE>0.50). This means that all indicators are reliable; no indicator needs to be discarded.

Structural Model Suitability

An analysis was performed on the coefficients of structural equations by specifying a certain level of significance. For a significance level of 0.05, the value *t* of structural equation must be greater than or equal to 1.96 or, for practical purposes, greater than or equal to 2 (Wijanto, 2008).

Structural Equation Modeling

$$\mathrm{ALTMANZ} = 0.19*\mathrm{BoC} + 1.20*\mathrm{AC} + 0.040*\mathrm{QoA} \quad \mathrm{Errorvar.}= 0.31 \quad R^2 = 0.85$$

(0.091)	(0.11)	(0.038)	(0.044)
2.05	11.32	1.05	7.18

Table 3 lists the t-values corresponding to the three hypotheses. Figure 2 shows the path diagram identified. Note that all coefficients have values *t* significant except for the variable AC or Audit Quality that has a value t smaller or less than 2.00. It can be concluded that hypotheses H1 and H2 have proved to be significant. This means that there is a positive and significant influence between the variables and board of directors' audit committee of the possibility that companies may experience financial distress (proxy by Altman z-score). In other words, greater supervision by the board of commissioners and the expanding functions of an audit committee will affect the increase in the value of Altman z-score, which means that the company is in a very healthy state, i.e., the probability of bankruptcy is very small.

Consider now the coefficient of determination of the structural equation as determined by the corresponding R^2-value (Wijanto, 2006). The LISREL results can be seen in Equation Reduced Form R values obtained^2 for the structural equation. The model has a R^2 value of 0.85, which means the model is able to explain 85% of the changes in the latent variable financial distress. Therefore, it can be concluded the model is reasonably good. The overall t-values for each of the three hypotheses proposed in this research are summarised in Table 3.

Table 3
The value of the t-value for each hypothesis

Hypothesis	Path	Estimated	t-value	Results
H1	BoC → ALTMANZ	0:19	2:05	Significant
H2	AC → ALTMANZ	12:11	11:32	Significant
H3	QoA → ALTMANZ	1:05	1:05	No Significant

The resulting path diagram is shown in Figure 2 below. It refers to the structural model generated from the LISREL output.

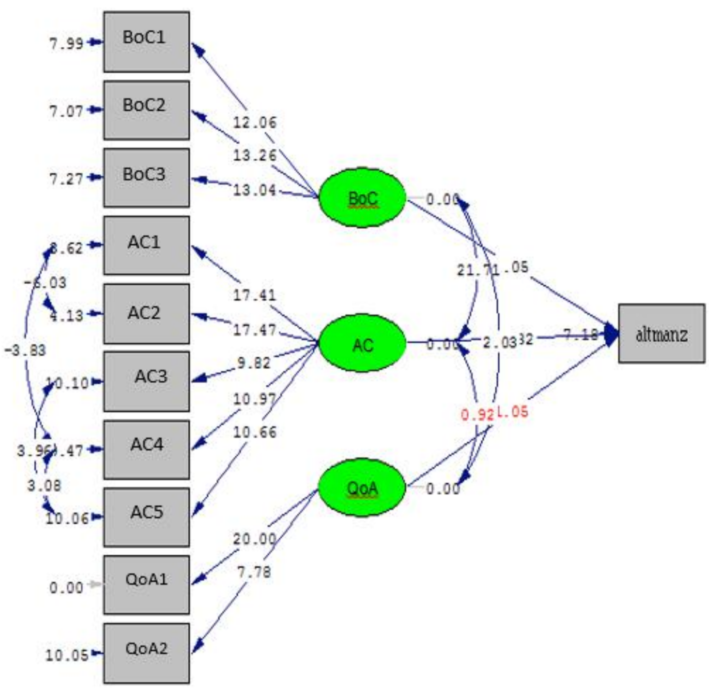

Figure 2. Path diagram

The structural equation model confirmed that the board size has a significantly positive effect on financial distress. This means the bigger the number of commissioners, the greater the likelihood of financial distress. These results contradict those of Wardhani (2006) that there is a negative influence between size of the board and financial distress. However, the results of the present study are consistent with Dalton, Dan and Catherine (2006); Jensen (1993); Lipton and Lorsch (1992); Yermack (1996) who observed a positive relationship between board size with the possibility of the company going bankrupt and the company's performance. This means a company with bigger board size will not be able to do the coordination, communication, and decision making better than the one with a smaller board. In short, the value of increasing the board size unduly, is questionable.

The second hypothesis on the effect of audit committee on financial distress has also been proved to be positive and significant, at least in Indonesia. The is inconsistent with Pierce and Zahra (1992) who report the effectiveness of the audit committee will be increased if the committee size is increased, because the committee has better resources to tackle the issues being faced by the company. On the other hand, the findings of study support those of Rahmat et al. (2008), who examined the relationship between the audit committee characteristics and financial distress. One of the characteristics of the audit committee is its size. The results from the study indicate that the size of the audit committee has no significant effect on financial distress. The bigger the size of the audit committee, the less focused is the company on overseeing its operations.

The third hypothesis on the effect of the audit committee to financial distress was supported but not statistically significant. This suggests that the third hypothesis has not been successfully backed, which suggests that the quality of audit does not increase the likelihood of financial distress. Although audit quality has no significant effect, the sign of the coefficient value is in accordance with the hypothesis put forward. These results are not consistent with the findings of Mutchler et al. (1997) who showed that large-scale KAP (Big 6) are more likely to issue a 'going concern' audit opinion of financial companies that had difficulty compared with small-scale KAP (Non-Big 6). However, this study supports Ramadhany (2004) where the variable scale auditor (Big Four and Non-Big Four) had no significant effect on the possible issuance of audit opinion by the auditor or the possibility of the company's financial distress.

CONCLUSION

This research was an extension of previous studies to examine the effect of corporate governance on financial distress. The purpose of this study was to see how far the application of the principles of good corporate governance (GCG) can affect the likelihood of companies becoming bankrupt or get into financial distress. Findings confirmed Hypothesis 1 confirmed the size of board of commissioners affects financial distress positively. A larger board size can increase chances of company's bankruptcy. This is because a large board size can lead to poorer coordination, communication, monitoring or supervision, and decision making. Hypothesis 2 whether audit committees affect financial distress was supported by the findings at a significant level. Specifically, the output results from structural equations showed audit committees positively affect financial distress. However, a bigger audit committee could lead to lesser focus on overseeing the company's operations. Hypothesis 3, namely effect of audit quality on financial distress, was not supported by this study, there is some effect but it is not statistically significant.

Although results of this study contribute to the literature on corporate governance and financial distress, there are some limitations. First, it did not take into account control mechanisms such as board training and professional experience, board diversity, or the design of compensation contracts of directors which can be tackled by future studies. Second, the sample period is not long enough to study issues such as causality of variables and endogeneity problems. Future research could focus on these issues to better understand the complexity of financial distress and its causes.

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Homo Economicus vis a vis Homo Pancasilaus: A Fight against Positive Accounting Theory

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ABSTRACT

This study offers *homo pancasilaus* as antithesis to *homo economicus*. *Homo economicus* has become the ontology of Positive Accounting Theory (PAT) that dominates capitalistic accounting. By employing Pancasila as research paradigm, it is revealed that *homo pancasilaus* has a number of indicators which characterises human personality: divinity, humanity, unity, society, and justice. These characteristics can be used as the basis to transform accounting that is based on Pancasila, and to offer alternative *Positive Accounting Theory*.

Keywords: Critical accounting, *homo economicus*, *homo pancasilaus*, positive accounting theory, pancasila paradigm

INTRODUCTION

The human aspects (and accounting) cannot be separated from the ideology of a country (Sitorus, 2016). If the concept of *homo economicus* (assumption of human in Positive Accounting Theory (PAT) is applied to non-capitalist nations, there will be a change of ideology in accordance with that philosophy (Samuel & Manassian, 2011; Tinker, Merino, & Neimark, 1982). In Indonesia's the country ideology, namely Pancasila, is not aligned to the capitalist ideology (Cahyanto & Parikesit 2011). By implication, the concept of humans underpinned by Pancasila (*homo pancasilaus*) is diametrically opposite to the concept of *homo economicus*, the root of capitalism.

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This study examines *homo pancasilaus* in various aspects of life, particularly in the economy and accounting ontology. The concept of *homo economicus* prevents human from realising his/her full nature because it prioritises material reality (Waldron, 2010). Thus, a new personality of human called *homo pancasilaus* (humans who uphold Pancasila) is offered. This new personality is used as an underlying assumption for economics and acounting.

In formulating *homo pancasilaus*, we use five main values of Pancasila , namely divinity, humanity, unity, democracy, and justice whose relationships are intertwined. Humans' assumption cannot be separated from philosophy and accounting concepts as they influence each other. Therefore, the study associates human aspects of accounting and their influence on accounting activity, and *vice versa*.

METHODS

This study constructs human identity from the perspective of Pancasila. Assumptions of *homo economicus* which is the foundation of PAT accountancy should be changed. Moreover, this prioritises profit as the main purpose of economic activity, contradicting the Pancasila (Sitorus & Triyuwono, 2015). In this study, *homo pancasilaus*, comprising the principles of Pancasila, is used to study accounting and to realise the value of human (Soekarno, 1945, 2001).

The Constuction of Human Identity Based on Pancasila

Divinity and Humanity: The "Nothingness" of Human

Who am I? Who are we? Who is the real human? The answers to these questions form the basis of human assumptions (Kamayanti, 2009). These assumptions basically determine the nature of self and human being, which will then lead to the axiology of life, including accounting (Triyuwono, 2012). As discussed earlier, PAT cannot be separated from *homo economicus* where humans pursue opportunities to maximise their materials (Waldron, 2010). Every human being pursues opportunities in economic activity for personal gains. Accounting can be seen as a tool to increase opportunities for people through regulatory standards, measuring instruments, and scientific development (Hines, 1988).

The basis for Pancasila lies in the realisation that man is nothing in his life (Sitorus, 2016). Humans should be aware that their existence is a gift from God and they are part of nature. As a founding father of Pancasila, Soekarno (1945) emphasised that true God is the culmination of human civilisation. Thus, pursuing economic wealth alone is not justified. Material wealth is a representation of human ego and negates the reality of God (Chiapello, 2007; Hines, 1988; Sitorus, 2016).

We know humans have a free will and are sovereign in making decisions. Humans do have the right to separate himself from the presence of God, others, and the universe. Nonetheless, the free will concept should not be directed to things that are oriented to lust, especially in the concept of matter. People should use the freedom to be oriented to God, others, and the universe. In other words, free will is based on human wisdom and discretion (Latif, 2012; Lehman, 2014; Waldron, 2010). Therefore, the fourth principle of Pancasila is aimed at taming the ego (Cahyanto & Parikesit, 2011).

Humans, from the Pancasila perspective, should not see freedom espoused by capitalism (Latif, 2014). Instead, they sacrifice for common interests and welfare (Cahyanto & Parikesit, 2011). His or her existence is not self-centred but God, others, and the universe are far more important (Sitorus, 2016). The nature of sacrifice such as this that does not exist in *homo economicus*. An overhaul of *homo economicus* must be done to achieve *homo pancasilaus*.

Self-interest is actually divisive to the nation (Hines, 1988; Mulawarman, 2013). In addition, social inequality exists due to private wealth accumulation (Latif, 2012).

Humans must be humble and the humility brings people together. Humans need to move from ME to OUR in the paradigm of life to realise the true *homo pancasilaus*. “I” am nothing without “WE” as an entity unified and mutually influenced each other (Kusdewanti, Triyuwono, & Djamhuri, 2016). “WE” leads to an awareness that enjoyment is only for the private individual but for mutual benefit (Sitorus, 2016).

This “nothingness” attitude should be apparent in the development of accounting, both in theory and practice. We must realise the development of accounting concepts cannot be separated from human characteristics, *vice versa*. Accounting and human beings have a strong bond, even from the level of definition (Sitorus, 2015). Both are aspects of reality that are not separated from one another, both on the physical level and vice versa (Kamayanti, 2009). Awareness of this “nothingness” will encourage accounting that is conscious, and humble, and from ontology, to axiology (Molisa, 2011; Triyuwono, 2012).

Value of Divinity and Humanity: Human as Trustworthy

Trustworthy is ignored in *homo economicus* and the development of PAT (Sitorus, 2015). Human based on PAT is ambitious, competitive and forgets that everything is a surrogate (Triyuwono, 2012, 2015). A man is always focused on the acquisition of material wealth and forgets he should be accountable to the universe (Sitorus, Habibaty, & Triyuwono, 2016). Eventually, every human being will compete against one another for material gain (Tinker, Merino, & Neimark, 1982). Therefore, human competition in economic activity becomes commonplace.

Abandoning the virtue of being trustworthy will result in vanity and false happiness. Humans are happy if they are materially well off in an economic context, leads to wealth accumulation (Chiapello, 2007; Schneider, 2012; Tinker, 2014). This leads to pride and disregard for God and the universe in economic activity. This is the arrogance of man embodied in PAT (Sitorus, 2015; Sitorus et al., 2016). The question is, are people aware that there is a true reality that must be pursued in life?

We must realise that when a human claims to be nothing, then everything he has is a mandate from God. God actually plays a major role in economic activity despite God being negated in PAT (Sitorus, 2015). When human beings are nothing, he/she should be aware of the existence of God as the highest force in life (Kusdewanti, Triyuwono, & Djamhuri, 2016). Consequently, there is a realisation that he/she does not mean anything without the existence of God. Therefore, the pride and joy of material gains are not aligned with the realisation of human beings as nothing.

God has also mandated human beings to carry out economic activities that are centred in God (Triyuwono, 2012). Humans work together to create economic activity. A person should not think of his/her own interests because actually he/she is a social being and is civilised (Latif, 2012). When personal interests (self-interest) are factored in economic activity, then only certain circles exclusively enjoy the results of such activities (Sitorus et al., 2016)

We also should not forget that the universe, a venue for economic activity, is a mandate from God. Man cannot perform economic activity in the absence of the role of the universe as a production source. The implication, therefore is, we have to show gratitude to God for entrusting the universe to us. The question is, whether the PAT system is based this. Certainly not! The universe, for the PAT, is only used as a material in improving humans' lives (Petrenko, Aime, Ridge, & Hill, 2015).

The gap between God, human and the universe can also be said as a result of forgetting 'trust' in the development of accounting. Human become oblivious to his/her true identity when God's mandate is erased from their mind (Sitorus, 2015). Hence, economic and accounting systems only focus on self-interest (Hines, 1988). Therefore, Pancasila's mandate is centred on God, humans, and universe for 'trustworthy and holistic' reality (Latif, 2014; Sitorus, 2016).

How is trustworthy embodied in the perspective of Pancasila? Soekarno (1964) as the founding father of Pancasila laid the foundation of trust by formulating *Trisakti* (Three powerful elements). First, is sovereignty in the political field? Indonesian society must have a political identity. This sovereignty also applies to accounting in the context economics (Sitorus, 2015). Thus, economics and politics are connected (Amir, 2012; Arnold, 2012) to the sovereignty of a country. Second, economic self-sufficiency in the spirit of togetherness. Third, socio-cultural where accounting is based on local wisdom. Nature is already part of the accounting thinking "frame" of the people of Indonesia (Sitorus, 2016; Triyuwono, 2011).

The third element is basically intended to realise the paradigm of human 'wholeness' in life. A whole human being no longer thinks of material elements and self-interest in building a paradigm of life. All the elements that exist within humans are immersed in the spirit of togetherness with God as the centre (Soekarno, 1964). Thus, the spirit of Trisakti changes from "I" to "WE" to realise the wholeness.

This context should also be embodied in the development of knowledge and paradigms of accounting practices. Modern accounting that is reflected in PAT regards mandate as a burden or costs (Suwardjono, 2013). This may mean the contribution of these entities to carry out the mandate may not exceed total revenue (Parikesit, 2012). Therefore, accounting needs to determine the usefulness of non-material to realise the full mandate.

Value: Human in Unity

Unity appears when man realises his role in carrying out his mandate (Triyuwono, 2012). As mentioned earlier, God gives a mandate to man to live together, not as individuals (Sitorus, Habibaty, & Triyuwono, 2016). By implication, the new mandate can be executed when all the elements of life have God as their centre. Therefore, humans must blend the realities of life to carry out their mandate (Triyuwono, 2016).

In the end, we need to realise that selfishness in *homo economicus* has caused the distance between human beings and other elements in life. PAT, through the assumption of human as *homo economicus*, expressly results in binding humans (and accounting) to the material world. This creates a pattern of material accumulation via economic activities (Friedman, 1995; Malsch & Guénin-Paracini, 2013). Therefore, we need not be surprised if people justify their pursuit of material wealth regardless of the existence of God or neighbours (Sitorus et al., 2016). Thus, replenishment of *homo economicus* assumption is also intended for the sake of uniting human beings with all elements of life.

Humans, when acting as *homo pancasilau*s, must shed their ego to be united with all the other realities in life. Pancasila as paradigm demanded the abandonment of self-interest in order to build a civilisation together. This would lead humans to get together as the ultimate goal of life (Latif, 2015; Mulawarman, 2013; Sitorus & Triyuwono, 2015). The spirit of togetherness then forms an economic system that is based on the values of the noble man, unlike the ego (Cahyanto, 2012). Soekarno (1960) prescribed Pancasila as a recipe to bring all human civilisations together.

There are three aspects of the relationship that must come together to realise the oneness of man. First, people must unite themselves with God (Kaelan, 2010). Man must realise that he is a creation of God, and hence, the must not abandon his relationship with God. Second, the people must unite to build a paradigm of life. Man can blend with each other if he/she is able to shed the ego and stay in tune with each other. Third, people should unite themselves with the universe to build a paradigm of life.

The oneness not only occurs in the human aspect alone, but also reflected in accounting. Accounting leads humans to the mortal world (Sitorus, 2015). Accounting affects humans and vice versa, so both must have compatible properties (Harahap, 2013; Sitorus, 2016; Triyuwono, 2016). Thus, accounting can be a means for people to take responsibility for human lives based on the spirit of oneness.

Unity and Democracy: Humans who Love the Country

The most important thing advocated by *homo pancasilaus* is love for the country as an important part of life. This is called nationalism. Love for their country is a credo for the Indonesian people (Latif, 2015). Pancasila is based on a common vision and love for the country is necessary in order to embed Pancasila (embedded) as a way of life in Indonesian society. Instead, Pancasila will just be a slogan or rhetoric when it is not matched by a sense of love for the country.

Nationalism is essentially based on the *homo pancasilaus* spirit and to realise the sovereignty of a country (Sitorus, 2015). Nevertheless, the trust cannot be realised when Indonesians do not love their own country. Therefore, people need to inculcate the spirit of nationalism within him/her to realise the mandate.

On the other hand, humans can also be said to be united when they have a sense of devotion to their country. Additionally, the universe is a part of a sovereign state because this element is also involved in human life. Not only that, Indonesia recognises that God is the most important part of the country through the first principle of Pancasila (Nadjib, 2013). Thus, we can conclude that the third element of the oneness of life is materialised in the form of the state. Therefore, a sense of nationalism is in essence a conscious attitude to merge with all the elements of life.

Accounting upholds local wisdom that is basically a manifestation of nationalism. Local wisdom is basically the identity of a country in building a civilisation. A country will have a clear benchmark in developing a paradigm of life (especially accounting aspects) when it has local wisdom to measure it against with (Efferin, 2015).

Homo Pancasilaus: Justice

Every human has his/her own concept of justice. The only difference is its foundation and goals. One example is the perspective of distributive justice which incidentally is the embodiment of *homo economicus*. From this perspective, fairness is based on rationality and morality (Boot, 2012; Rawls, 1999). Some rationalists even negate the existence of God. Therefore, it is not a surprise to perceive that capitalist is legitimized in accounting based on this perspective of justice (Bayou, Reinstein, & Williams, 2011).

Human justice from the Pancasila perspective is based on upholding balance in life (Sitorus, 2015). Balance is not always associated with the acquisition of material wealth (Cahyanto & Parikesit, 2011), but there are other elements which are far more important for human life.

In Pancasila, balance can be achieved by first being just to God, human and the universe (Sitorus, 2015). Second, practising justice in all aspects of human's life (Parikesit, 2012). Humans must use wisdom and discretion in life to ensure an equitable life (Latif, 2014). Third, to realise justice for civil society (Latif, 2015).

These are the different definitions of human justice. Justice from Pancasila perspective, no longer emphasises material wealth as the goal of economic activity (and accounting). Is it possible that human justice that is based on Pancasila can be realised in modernity? Of course, it can! Human justice can happen if we become less selfish (Kusdewanti, Triyuwono, & Djamhuri, 2016). However, the nation must be directed to realising human (and accounting) justice (Sitorus, Habibaty, & Triyuwono, 2016).

CONCLUSION

This study has discussed *homo pancasilaus* characters as being antithetical to *homo economicus*. *Homo pancasilaus* is made up of five main values of Pancasila, namely divinity, humanity, unity, democracy, and justice. *Homo pancasilaus* eliminates human ego and believes in the unity between God, others, and the universe. The oneness is then given a mandate called *Trisakti* to form a sovereign nation. Finally, *homo pancasilaus* has a personal form of justice that balances human life in all aspects.

Aspects of *homo pancasilaus* emphasize that human beings cannot pursue material enjoyment only. Instead, they must surrender to the existence of God as the Creator. This is the true identity of Indonesians who are aware of the divinity of life. This certainly can not to be found in the assumption of man as *homo economicus*.

Homo pancasilaus aspects can be implemented in accounting when the latter is infused with the spirit of Pancasila. Therefore, humans and accounting must have the spirit of Pancasila to realise human civilisation.

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What Motives Consumers to Spend?: A Study on Impulsive Purchases

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ABSTRACT

This research is based on Rook and Fisher's (1995) theory of taxonomy that explains the reasons for impulsive purchase. The aim of this study was to understand the motivations for hedonic expenditure and utilitarian expenditure physical environment, personality and culture as moderating variables on impulsive purchases. A total of 400 respondents who shopped at a souvenir store in Bengkulu, Indonesia were interviewed. The SmartPLS 2.0, a statistical technique, was used to identify the variables. Results showed physical environment, personality, and culture partially and positively affected impulsive purchases. Lifestyle however, has no effect on impulsive purchases. Second, there was the difference between hedonic expenditure motivation and utilitarian expenditure motivation. Third, motivation for hedonic expenditure was stronger.

Keywords: Culture, lifestyle, impulsive purchases, hedonic, utilitarian

INTRODUCTION

A well organised marketing strategy would be able to influence customers' purchasing decisions. The purchase decision is based on need recognition. Before purchasing goods and services, the consumer must plan what and where to buy as well as the cost. However, in other cases, the purchases could immediately without much thought. These are called unplanned purchases or impulsive purchases.

According to Bellenger, Robertson and Hirschman (1978), consumers usually plan to shop in advance but sometimes impulsive purchases can happen. Based on this theory, the purchases at some Batik Bersurek souvenir stores in Bengkulu may

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be impulsive, as consumers come to the store to buy souvenirs from Bengkulu, without actual knowledge of what to buy, while the store itself sells a variety of items including Batik Bersurek. According to Smith and Colgate (2007), situational factors like the physical environment influences consumers to make impulsive purchases. In addition to situational factors, personality variable could also influence impulsive purchases (Delafrooz, Taleghani, & Farahzad, 2013). Culture has effect on consumer impulsive purchases at both individualistic and collective level (Kacen & Lee, 2002). Lifestyle affects impulsive purchases individually and collectively (Sarki, Bhutto, Arshad, & Khutro, 2012; Sun, Horn, & Merritt, 2004). Consumers are motivated by consumption value or hedonic value, and utilitarian value (Babin, Darden, & Griffin, 1994). Hedonic expenditure is motivated by desire, novelty and surprises (Hausman, 2000) while utilitarian expenditure is task-oriented, rational and cognitive (Babin et al., 1994).

Two studies (Luk, Sharma, & Chen, 2013; Wang, Chou, & Chang, 2009) used the hedonic and utilitarian motivations as moderation effects of independent variables (beliefs perceived, user attitude, sacrifice, value, satisfaction) on dependent variables (information quality, behaviour intentions). Moderation effects of motivation expenditure (hedonic and utilitarian) are used to see how strong the effect of independent variables on the dependent variables, and to determine which is stronger, hedonic or utilitarian expenditure motivation.

This research is based on Rook and Fisher's theory (1995) which believes that impulsive purchase is an inclination where consumers buy spontaneously, without consideration. Impulsive purchases happen due to many factors known as variables such as physical environment (Baker, Grewal, & Parasuraman, 1994; Stoltman, Morgan, & Linda, 1999) personalities (Delafrooz et al., 2013; Shell, 2002), collective culture (Hofstede, 2001; Luna & Gupta, 2001; Nakata & Sivakumar, 2001; Yoo, 2009) and lifestyle (Assael, 1992). This research also used hedonic value factor and utilitarian value factor (Babin et al., 1994) as moderating variables.

This study examines the influence of independent variables (physical environment, personality, culture and lifestyles) on impulsive purchases. It confirms the findings of Wang et al. (2009) and Luk et al. (2013) using different independent variables and dependent variables. The independent variables are physical environment, personality, culture and lifestyle while the dependent variable is impulsive purchases.

The findings of this study contribute to knowledge on the positive effect of physical environment, personality, culture and lifestyle on impulsive purchases. The study shows the motivation for hedonic expenditure and utilitarian expenditure is influenced by the physical environment, personality, culture and lifestyle. Findings show hedonic motivation is stronger than utilitarian expenditure on impulsive purchases.

LITERATURE REVIEW

According to Khan, Humayum, & Sajjad (2015), impulsive purchase is an unplanned purchase that occurs when customers experience a sudden urge to buy something, directly and spontaneously without advance planning. Rook & Fisher (1995, p. 308) describe impulsive purchase as below:

> often buy things spontaneously: just do it describes the way I buy things: I often buy a thing without thinking: I see it, I buy it describes me: buy now, think about it later describes me: some time I feel like buying things on the spur of the moment: I buy things According to how I feel at the moment: I carefully plan most of my purchase: sometimes I am reckless a bit about what I buy.

This study used five of 9 indicators of impulsive purchases gleaned from the above:

The physical environment or atmosphere of the store has a stronger influence on consumer purchasing decisions than the products offered (Roslow, Sydney, Li, & Nicholls, 2000; Stoltman et al., 1999). In-store stimulus also influences impulsive purchases (Abratt & Goodey, 1990). Dimension of physical environment (atmosphere) according to Baker et al. (1994) are: ambient factors (indicators: music, lighting, aroma); design factors (indicator: floor coverings, display, colour, cleanliness, layout); social factors (indicator: seller). According to Stoltman et al. (1999), physical environment is the availability of products, store employees, parking availability and store atmosphere. The physical environment indicators are the layout, availability of products, employees, store atmosphere and design. The following hypotheses are proposed:

H1: Physical environment has a positive influence on impulsive purchases.

According to Schiffman and Kanuk (2008), personality is how a person's responds to the environment. Delafrooz et al. (2013) showed among the five personality characteristics (extraversion, hospitality, coscientiousness, neuroticism, openness) extraversion and hospitality have an immediate and positive effect on compulsive and impulsive purchases. This study looked at extraversion and hospitality in influencing purchasing decision (Schell, 2002). Extraversion is feeling of happiness among people, easy to laugh, chatty, happy, cheerful spirit, and very active. Hospitality means politeness, being cooperative with others rather than competitive, prudent and tolerant. The following hypothesis is proposed:

H2: Personality has a positive effect on impulsive purchases.

Many researchers see culture as an important determinant of consumer behaviour (DeMooij & Hofstede, 2010). According to experts Luna and Gupta (2001) collectivist consumers tend to focus on families and groups when making purchasing decisions while individualist consumers tend to prioritise private interests. Triandis (1995) and Rook (1987) indicated that culture is very influential on impulsive purchases. According to Hofstede (1980), collectivist and individualistic dimension is the most important cultural factor on impulsive purchases. People in collectivist culture appreciate their group membership and respect group decisions (Wong & Ahuvia, 1998). According Nakata and Sivakumar (2001), people in the collectivist community sacrifice their personal interests for the welfare of the community. The indicators used in this study are families and groups, customer-seller relationship, trust, community sacrifice, and equality.

Thus, the following hypothesis is proposed:

H3: Culture has a positive effect on impulsive purchases

Lifestyle describes the activities and interests that interact with the environment using psychographics (Kotler, 2009). Psychographics is an instrument to measure lifestyle, which provides quantitative measurements of the market. According to (Assael, 2004), psychographics is a measure of AIO (activity, interest, and opinion) which are dimensions of lifestyle. Bashir, Zeeshan, Sabbar, Hussain and Sarki (2013) found that cultural values and lifestyle have a significant impact on consumer's impulsive purchasing behaviour in Pakistan. Thus, the indicators used in this study are activity, interest and opinion.

The following hypothesis is as proposed: Lifestyle has a positive effect on impulsive purchases.

According to (Arnold & Reynold, 2003; Babin et al., 1994; Kim, 2006) expenditure motivation is driven by hedonic and utilitarian factors. Wang et al. (2009) showed that motivation for hedonic and utilitarian expenditure moderate the relationship between the perceived belief and confidence in Web 2.0 applications. It was found the relationship between the perceived benefits and consumer attitude was stronger for consumers with utilitarian motivation. In contrast, the relationship between perceived ease utilisation, consumer attitudes and behavioural intentions was stronger for consumers with hedonic motivation. Some theories of hedonic dimension have been proposed. Hedonic value dimension consists of pleasure and adventure, according to Rintamaki, Kanto, Kuusela and Spence (2006). According to Babin et al. (1994) hedonic dimensions are: pleasure, shopping experience enjoyment, and perceived freedom. Utilitarian expenditure is task-oriented, rational and cognition (Babin et al., 1994). This study found hedonic and utilitarian expenditure motivation can be used as the moderation influence of independent variable on dependent variable. Utilitarian dimensions, according to Kim (2006), are achievement and efficiency. In the present study, it was found hedonic expenditure was motivated by pleasure, experience, freedom, problem ignorance and fantasy of the customers This study also used utilitarian expenditure motivation indicators, task-oriented, rational, cognition (knowledge), efficiency and achievement.

Therefore, the following hypotheses are proposed:

H5: There is a difference between hedonic expenditure and utilitarian expenditure motivation which is moderated by the physical environment

H6: There is a difference between the hedonic and utilitarian expenditure motivation which is moderated by the personality of the purchaser.

H7: There is a difference between hedonic expenditure and utilitarian expenditure motivation which is moderated by culture.

H8: There is a difference between hedonic expenditure motivation and utilitarian expenditure motivation which is moderated by lifestyle.

Figure 1 is based on the framework of the study:

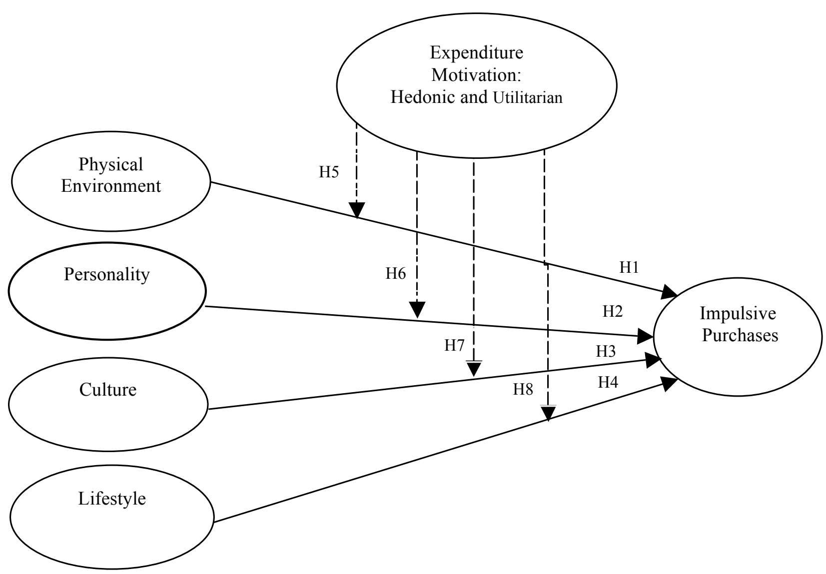

Figure 1. The relationship between Variables
Notes:
⟶ Influence of independent variables on dependent variable
- - - -▶ Moderating influence of independent variables on dependent variable
Sources: Adapted from Assael et al. (2013); Babin et al. (1994); Delafrooz et al. (2013); Hofstede (2001); Stolman et al. (1999)

METHODS

Types of Data and Research Approach

Data for this study was obtained from survey based on a questionnaire.

Sampling Method

The study population were impulsive consumers who shopped at the souvenir stores Bengkulu city. Non probability sampling was employed in which people were selected based on the purpose of research. According to Hair, Anderson, Tatham and Blak (1998) SEM requires a representative sample in multivariate data analysis research of 5 or 10 multiplied by the number of indicators or a minimum of 100 samples.

In this study, there were 400 questionnaires based on 40 indicators. The questionnaire was administered to those who shopped at Batik Bersurek in souvenir stores at Sukarno Hatta street Bengkulu City, Indonesia from October 2015 to January 2016.

Validity and Reliability

a. Validity Test

This study used convergent validity test with indicators assessed via factor loading (correlation between scores item / component score with the construct score) of indicators that measures the construct. The factor loading value greater than +/- 0.30 indicates compliance with the minimum level, the loading factors value of +/- 0.40 is considered better and in accordance with the rules of thumb used by researchers, and the loading factor of > 0.50 was considered significant (Hair et al, 1998).

Chin (1998) rule of thumb used for convergent validity is outer loading of > 0.7, Communality of > 0.5, and Average Variance Extracted (AVE) of > 0.5. Impulsive Purchases Indicator, Physical Environment, Personality, Culture and Lifestyle, have value of factor loading of more than 0.7, as seen in Table 1. Value of AVE and Communality of more than 0.5 is seen in Table 1. Based on Chin (1998), it can be concluded that all the indicators above were valid.

Table 1
Summary of validity test result

Item	Factor loading	AVE	Communality
Impulsive purchase		0.6287	0.6289
Spontaneously	0.806		
Thoughtlessly	0.702		
Quick buying	0.819		
Buying first and think later	0.845		
Buying impulsively	0.784		
Physical environment		0.708	0.708
Interesting layout	0.845		
Product availability	0.874		
Well trained employee	0.810		
Comfortable room atmosphere	0.884		
Interesting room design	0.790		
Personality		0.718	0.718

Table 1 *(continue)*

Item	Factor loading	AVE	Communality
Happy to be among people	0.870		
Feeling happy on duty	0.838		
Love to communicate with other people	0.712		
Enthusiast	0.839		
Very active	0.889		
Easy going	0.882		
Polite	0.844		
Cooperative	0.814		
Ready to please	0.852		
Wise and tolerant	0.918		
Culture		0.651	0.651
Friends' influence	0.818		
Recommend to friends	0.755		
Never forget to buy	0.889		
To ensure smooth business	0.779		
Because a friend buys	0.786		
Lifestyle		0.637	0.637
I love batik	0.780		
I stop shopping if I have bought batik	0.866		
Loving new things is my lifestyle	0.733		
Interesting goods	0.812		
The sellers serve the consumers well	0.793		

Source: The data was processed for SmartPLS 2.0 (2016)

b. Reliability Test

The reliability test in PLS is based on two methods: Cronbach's alpha and composite reliability. The rule of thumb or composite reliability alpha value should be greater than 0.7 though the value of 0.6 is acceptable (Hair et al., 1998). Cronbach's alpha values and Composite reliability for each variable indicator above were 0.7, as seen in Table 2. It can be concluded that the instrument used in this study was reliable (Hair, Bush, & Ortinau, 2006).

Table 2
Summary table of reliability test result

Item	Cronbach Alpha	Composite Reliability
Impulsive purchase	0.851	0.894
Physical environment	0.898	0.923
Personality	0.956	0.923
Culture	0.866	0.904
Lifestyle	0.861	0.897

Source: The data was processed for SmartPLS 2.0 (2016)

Method of Analysis

Data was analysed using inferential statistic.

Inferential statistical analysis

Inferential statistical used in this research was Structural Equation Modeling (SEM), hereinafter referred as SEM using SmartPLS 2.0. According to Hair et al. (1998), SEM allows for an analysis of the series of connections simultaneously to provide statistical efficiency. Moderation shows the interaction between the moderator variable and independent variables (predictors) in influencing the dependent variable. Testing the effect of moderation in linear regression can be done using Baron and Kenney's (1986) approach, First is to test the significancy of the primary (independent influence on the dependent), and second is to test the significancy of the moderator variable to the dependent variable.

Hypotheses 1 to 4 were tested using PLS. The scores of paths coefficient or inner model of a t-statistic value must be above 1.96 for two-tailed hypothesis and must be above 1.64 for one-tailed hypothesis in testing at alpha 5 percent and power 80 percent (Hair et al., 1998). Hypotheses 5 through 8 were tested using t test to see the difference between the different samples.

The formula used was based on (Sarkar, 1998).

$$t = \frac{\hat{\beta}_k^{(1)} - \hat{\beta}_k^{(2)}}{\sqrt{\frac{SSE^{(1)}+SSE^{(2)}}{df^{(1)}+df^{(2)}} \cdot \left[\frac{\left(\hat{\beta}_k^{(1)}\right)^2 .(df^{(1)}).}{\left(t^{(1)}\right)^2 .(SSE^{(1)})} + \frac{\left(\hat{\beta}_k^{(2)}\right)^2 .(df^{(2)})}{\left(t^{(2)}\right)^2 .(SSE^{(2)})}\right]}}$$

Note:

t = t test

βk = Beta Coefficient

SSE = Standard of Deviation

K = number of variables in the regression

Df = Degrees of Freedom

Testing criteria are:

- If t-test < t table at alpha of 0.05: hence there is no difference between hedonic and utilitarian expenditure motivation as the moderation effects of independent variable influence (physical environment, personality, culture, lifestyle) against impulsive purchases.
- If t-test > t table at alpha of 0.05: hence there is difference between hedonic and utilitarian expenditure motivation as the moderating effects of independent variable (physical environment, personality, culture, and lifestyle) against impulsive purchases.

In order to facilitate calculation and hypothesis testing, SmartPLS 2.0 software was used in this study.

DATA ANALYSIS AND HYPOTHESES TESTING

Data was validated via a validity and reliability test. They hypotheses was subjected to and Structural Equation Modeling (SEM) using Partial Least Squares (PLS) or SmartPLS 2.0 and Differential test (t-test). The results based on SmartPLS 2.0 are shown in Figure 2, while the result of Differential test (t-test) is shown in Table 3.

Hypothesis 1: Physical Environment has a positive effect on impulsive purchases

The results of beta coefficient of 0.249 and t value of 2.446 ort > 1.64 (one-tailed hypothesis) indicated physical environment has a positive influence on impulsive purchases (see Figure 2). This means the better the physical environment the higher the chances are for impulsive purchases.

Hypothesis 2: Personality has a positive effect on impulsive purchases

The results of beta coefficient of 0.233 and t value of 3.576 ort > 1.64 (one-tailed hypothesis) showed personality has a positive effect on impulsive purchases, can be seen in Figure 2. This means that if the personality of consumer was considered deliberately, impulsive purchases will occur.

Hypothesis 3: Culture has a positive effect on impulsive purchases

The results of beta coefficient of 0.244 and t value of 2.173 or t > 1.64 (one-tailed hypothesis) showed culture has a positive effect on impulsive purchases, as can be seen in Figure 2. This means that if the culture of consumer was considered deliberately, the chances for impulsive purchases will be higher.

Hypothesis 4: Lifestyle has a positive effect on impulsive purchases

The results of beta coefficient of 0.122 and t value of 0.878 or t<1.64 (one-tailed hypothesis), showed that lifestyle does not have a positive effect on impulsive purchases, can be seen in Figure 2. This means that if the lifestyle of consumer was considered deliberately, impulsive purchases will not increase.

Hypothesis 5: There is a difference between hedonic and utilitarian expenditure in moderating the influence of physical environment on impulsive purchases

The t test results was 21.908, where the value of t table is 1.64 (one-tailed hypothesis). It meant the t test > t table so it showed the difference between hedonic expenditure motivation and utilitarian expenditure motivation (see Table 3). Additionally, Table 3 also shows which variable between hedonic and utilitarian expenditure motivations that has stronger influence of the pysical environment on the impulsive purchases. Because t1 of hedonic variable is positive it can be concluded that motivation for hedonic expenditure is stronger.

Hypothesis 6: There is a difference between hedonic and utilitarian expenditure in moderating the influence of personality on impulsive purchases

The results showed t test of 3.046 where the value of t table is 1.64 (one-tailed hypothesis). It meant the t test > t table so it showed the difference between hedonic expenditure motivation and utilitarian expenditure motivation (see Table 3). Because t1 of hedonic variable is positive it can be concluded that the motivation for hedonic expenditure is stronger.

Hypothesis 7: There is a difference between hedonic and utilitarian expenditure in moderating the influence of culture on impulsive purchases

The results showed t test is 15.276 where the value of t table is 1.64 (one-sided hypothesis). It meant the t test > t table so it showed the difference between hedonic expenditure motivation and utilitarian expenditure motivation (see Table 3). Because t1 for hedonic variable is positive it can be concluded the motivation for hedonic expenditure is stronger.

Hypothesis 8: There is a difference between the hedonic expenditure motivation and utilitarian expenditure motivation as moderation influence of life style on impulsive purchases. There is a difference between hedonic and utilitarian expenditure in moderating the influence of lifestyle on impulsive purchases

The results for hypothesis 4 are inconclusive, namely lifestyle doesn't have an effect on impulsive purchases. According to Baron and Kenney (1986), moderation effects in linear regression should indicate independent variables affect the dependent variable.

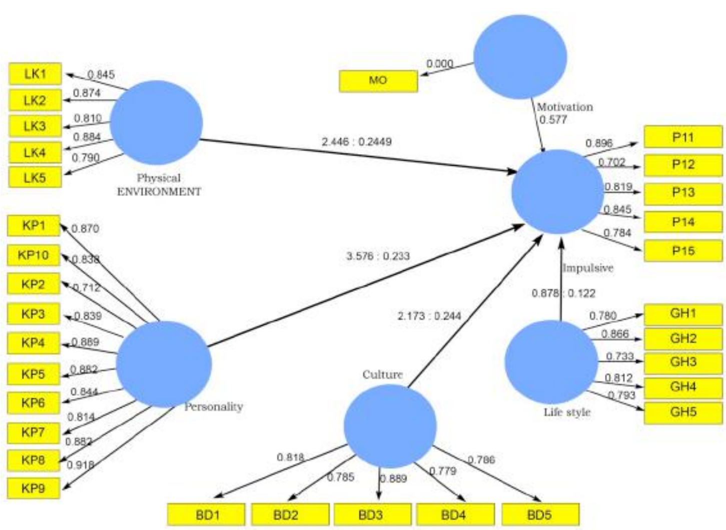

Figure 1. Summary figure of structural model output
Source: The data was processed (2016)

Table 3
Summary table of differential test

Parameter	t test = Personality	t test = Physical environment	t test = Culture	t test = Lifestyle
	IV to DV	IV to DV	IV to DV	IV to DV
SSE1+SSE2	0.3487	0.165	0.111	0.154
b1-b2	0.208	0.273	0.089	0.112
df1+df2	398	398	398	398
total b1	66.571	17.934	10.134	11.772
total b2	11.484	30.054	10.784	2.483
t test	3.046	21.907	15.276	20.304
b1	0.556	0.564	0.289	0.282
b2	0.347	0.291	0.199	0.170
df1	0.074	242	242	242
df2	156	156	156	156
t1	2.020	11.263	6.890	5.808
t2	4.761	2.530	2.883	4.160

b1/t1 = Hedonicb2/t2 = Utilitarian
Source: The data was processed (2016)

RESULTS AND DISCUSSION

This section focuses on testing the hypotheses of the study.

Influence of Physical Environment on impulsive purchases

This study showed physical environment influenced positively on impulsive purchases. According to Dunne and Lusch (2005), store environment is important for a retail business because almost 70% of the purchase turned out to be an impulsive purchase or unplanned purchases. Store environment according to Levy and Weitz (2004) is a combination of the physical characteristics of the store, such as architecture, layout, display colour, lighting, temperature, music, and aroma, which as a whole, creates an image in the minds of consumers. Thus, Indonesia retailers must pay attention to the physical environment, especially the layout, the availability of the products, attentive employees, room atmosphere, temperature and design.

Influence of Personality on impulsive purchases

This study examined whether personality has a positive effect on impulsive purchases. The results showed personality has a positive influence on impulsive purchases. This finding supports that of Delafrooz et al. (2013) i.e. among the five personality characteristics, extraversion and hospitality have a direct and positive effect on compulsive and impulsive purchases.

Thus, the owners of the souvenir stores must ensure their advertisements target extraversion personality of its customers (people who are energetic, social, brave, active, confident) and their products must be attractive that suits the personality of the consumer.

Influence of Culture on impulsive purchases

This study looked at whether culture has a positive effect on impulsive purchases. The results showed culture has a positive influence on impulsive purchases. This is consistent with the findings of Bashir et al. (2013) that indicated cultural values and lifestyle of Pakistani consumers had a significant influence on impulsive purchases. Thus, the Batik Bersurek products must have names that have the collective cultural meaning. It is also suggested that the advertisements should reflect social values corresponding with the collective culture.

Influence of lifestyle on impulsive purchases

This study examined whether life style has a positive effect on impulsive purchases. The results showed lifestyle did not have a positive influence on impulsive purchases. These findings were not supported by Bashir et al. (2013) who reported that cultural values and lifestyle of Pakistani consumers had a significant influence on impulsive purchases. It has to be noted the current findings cannot be generalised to the population in general.

The moderating influence of physical environment on impulsive purchases

The results of this study showed physical environment has a moderating influence on the motivations behind hedonic and utilitarian expenditure in relation to impulsive purchases. Hedonic expenditure is boosted by the physical environment to make impulsive purchases. Based on these findings, the owners of souvenir stores in Bengkulu city must create proper physical environment (layout, product availability, employees, and design) to entertain, entice and meet consumers' needs. Personality **as a moderating influence on impulsive purchases**. The findings indicate the moderating influence of personality on impulsive purchases whereby the personality of the consumer strengthens motivation for hedonic expenditure. Thus, the owners of souvenir stores must create brands that target consumers motivated by hedonism.

Culture as a moderating influence on impulsive purchases

Results showed culture has a moderating influence on impulsive purchases and in particular hedonic expenditure. Therefore, the owners of souvenir stores in Bengkulu city must create appropriate advertisements targeting collectivist culture that support hedonic expenditure.

Lifestyle as a moderating influence on impulsive purchases

Findings were inconclusive since lifestyle did not influence impulsive purchases.

CONCLUSION

This study has shown physical environment has a positive influence on impulsive purchases of shoppers at Batik Bersurek. This indicates that the impulsive purchases can be increased by improving the physical environment (layout, availability, services, temperature and design), by rearranging the display, ensuring stock availability, upgrading service, and redesigning products. Personality influences positively on impulsive purchases of Batik Bersurek. It was found extraversion and hospitality can increase impulsive purchases. It is also suggested that product brand, promotion and advertisement could accommodate extraversion personality and hospitality in order to increase impulsive purchases.

Culture also has positive influence on impulsive purchases. This study examines collectivist culture where decision making is based on kinship and group could increase impulsive purchases. Thus, shop owners should encourage the product advertisements that emphasise on collectivist culture in order to increase impulsive purchases.

This study also shows lifestyle has no effect on impulsive purchases. Though some earlier researches (Bashir et al., 2013) showed the contrary, that is relatively in limited scope only and it cannot be generalised as universal.

The physical environment has a positive influence on impulsive purchases as shown in the present study. Hedonic expenditure motivation is boosted by the physical environment and thus, the study strongly recommends shops owners create a favourable physical environment to encourage hedonic expenditure motivation

Personality has a positive influence on impulsive purchases in particular hedonic expenditure. Hence, it is recommended that aggressive brand and product advertisements that target extraversion personality be considered.

Culture has a positive influence on impulsive purchases and the personality of the consumer boosts hedonic expenditure. This study recommends shops to create suitable advertisements that support collectivist culture and hedonic consumers.

This study has discussed the theory on behaviours that motivate impulsive purchases. The study has limitations, namely where the whole independent variables cannot be tested to affect dependent variables. There were four independent variables: physical environment, personality, culture, and lifestyle while dependent variable was impulsive purchases. Only three independent variables (physical environment, personality, culture) had an effect on impulsive purchases while the lifestyle variable did not have any effect on impulsive purchases.

Future research may look at time variable as a situational factor influencing impulsive purchases and moderated by hedonic and utilitarian expenditure motivation. This study used hedonic expenditure motivation and utilitarian expenditure motivations as moderating variables and found the former is superior. Another moderator variables that can be used in the future studies are gender (male or female).

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Corporate Brand Equity in Consumer Goods Industry: An Experiential-Based Strategic Branding

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ABSTRACT

This study investigates the role of brand experience from the perspective of customer brand equity looking at their favourable brand preference. The structural equations model (SEM) and quantitative research method was adopted. The LISREL software is applied to analyse data and results confirm that brand building blocks of experiential based model are key sources of brand equity and brand sustainability. All the nine research variables have a direct positive impact on brand sustainability. The findings also show the impacts on the general brand personality and brand trust of brand sustainability was mediated by brand experience.

Keywords: Brand building blocks, brand sustainability, corporate brand equity, LISREL, SEM

INTRODUCTION

In order for businesses to remain competitive is not easy as thousands of corporate brand exist around the world Corporate Brand Equity and its Sustainability shape consumer decision behaviour, and an important corporate competitive strategic formulation. Brand Experiential reveals the essential key success factors of Corporate Reputation, to strengthen Corporate Performance and increase its Brand Credibility and Brand Preferences. Moreover, it is crucial in renewing the corporate Brand Building Blocks, and emphasises Brand Personality, and Brand Trust. Corporate brand equity is where customers will decide to use these brands first, rather than any other corporate brand. They have a special bond or connection with the brand that could create specific feelings, and special sensation in the customer with a particular experience. The power of brand experience hence replaces

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the brand with no value of experience. Thus, the customer experience should be used to develop the conventional brand equity model in its brand building blocks. The valuable, different, and emotionally connected brand experience creates consumer's preference of a brand. In the long term, this favourable brand experience becomes the most trusted and credible brand among its rivals. Experiential based branding as part of brand building blocks may become a source of brand sustainability. This study investigates brand experience and preference from the perspective of customer brand equity that could lead the company in achieving its brand equity.

LITERATURE REVIEW

Experiential-based branding is a strategic paradigm in managing consumers' brand equity (LaSalle & Britton, 2002). Shaw and Ivens (2002) describe consumer brand experience as a stimulus that evokes consumer behavioural responses (Oh, Fiore, & Jeoung, 2007). Experiential branding gains through customer loyalty (Poulsson & Kale, 2004). An experiential product innovation is urgently needed since the customer has to give a fast response according to their new experiences based on their past learning (O'Loughlin, Szmigin, & Turnbull, 2004). These new brand experiences could improve the consumers' standard of living, brand trust, and enhance brand preferences (Zarantonello, 2013). Consumers prefer to choose new experiences, which influence the preference for the brand when purchasing (Payne, Storbacka, & Frow, 2008). Experience sustainability lies on the customer's perceived value of the brand (Edvardsson, Enquist, & Johnston, 2005), leading to competitive positioning of the corporate brand in the market (Backstrom & Johansson, 2006). Furthermore, these brand leaders in experiences are the brand building blocks of corporate brand equity (Uriely, 2005). Corporate brand equity can be measured by the consumers' loyalty to the conceptual brand building blocks, thus corporate performance could become sustainably competitive (Uriely, Yonay, & Simchai, 2002). According to Trauer and Ryan (2005) corporate brand equity is based on brand experience association in mind. Berry, Carbone and Haeckel (2002) explain that the dimensions of consumer brand experiences have positive effects on firm's brand equity. These experiences vary based on consumer's demography differences, and create particular expectations towards the product, price, promotion, and place (Schembri, 2006). The logical and emotional response to the experiences must fit their brand associations (Addis & Holbrook, 2001), which will boost corporate performance and the company's reputation (Barsky & Nash, 2002). In sum, brand experience ultimately lies on the consumer's emotional feelings towards the overall brand attributes (Arvidsson, 2005), and brand perceived associations connected to everyday consumer needs and wants in a better way. Ponsonby-McCabe and Boyle (2006) state brand equity is built by customer experiences of the brand, which creates brand memory or recall as the main factor for considering the brand choice (Smith & Wheeler, 2002). The great benefit for corporate with the strong brand experience strategy deal with enhancing brand trust and preferences, boost customer brand credibility and acquire brand sustainability (Prahalad & Ramaswamy, 2004). Schouten, McAlexander and Koenig (2007) also conclude that the more valuable brand experience needs higher brand personality which is created in the customer's mind. The right positioning strategy based on customer's brand experience will create a competitive corporate reputation (Vargo & Lusch, 2004). Berry et al. (2002) found that dimensions of innovative brand experience motivate customer loyalty and equity for the brand, which makes the brand more sustainable.

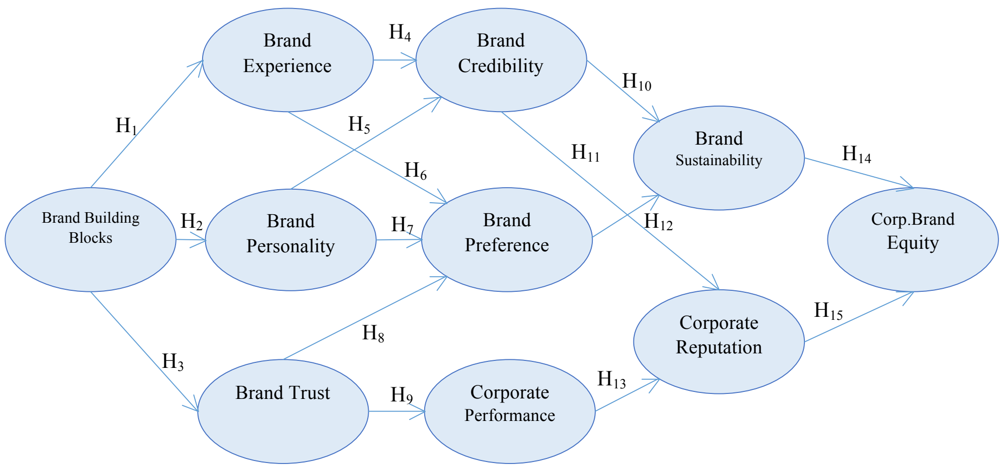

Figure 1. Empirical research model

Based on the literature background, the following hypotheses are proposed:

H_1: Brand Building Blocks is related to Brand Experience positively.

H_2: Brand Building Blocks is related to Brand Personality positively.

H_3: Brand Building Blocks is related to Brand Trust positively.

H_4: Brand Experience is related to Brand Credibility positively.

H_5: Brand Experience is related to Brand Preference positively.

H_6: Brand Personality is related to Brand Credibility positively.

H_7: Brand Personality is related to Brand Preference positively.

H_8: Brand Trust is related to Brand Preference positively.

H_9: Brand Trust is related to Corporate Performance positively.

H_{10}: Brand Credibility is related to Brand Sustainability positively.

H_{11}: Brand Credibility is related to Corporate Reputation positively.

H_{12}: Brand Preference is related to Brand Sustainability positively.

H_{13}: Corporate Performance is related to Corporate Reputation positively.

H_{14}: Brand Sustainability is related to Corporate Brand Equity positively.

H_{15}: Corporate Reputation is related to Corporate Brand Equity positively.

METHODS

The main purpose of the study was to analyse the influence of brand experience on brand equity through a comprehensive model integrating all conceptual variables that affect corporate brand equity. The model was empirically tested in the context of 5 main corporate brands that has more than 20 product lines. These products range from food and beverages, toiletries, cosmetics, and medicines. Corporations such as Unilever, P&G, Wings, Lion, and Orang Tua have become the most popular corporate brands in Indonesia. The five-scale Likert was used to gauge the respondent's response: (1) as strongly disagree; (2) as disagree; (3) neutral; (4) agree; and (5) strongly agree. The variables are based on literature. Structural Equation Modelling (SEM) was utilised to analyse all the correlations between the variables and hypotheses. LISREL software was used to achieve the objective of the research tests. The consumers in Indonesia who purchase products from those five corporations are the main target of this study. The purposive sampling technique was used to filter the unit sample based on certain criteria (Ferdinand, 2012). Thus, the sample population are Indonesians who: (1) live in Surabaya, the second most highly populated city; (2) who are at least 20 years old and above; (3) have consumed all of those five corporate brands with minimum usage of 20 product lines every month; (4) have used the products at least for three years.

RESULTS

This study tested validity and reliability test before performing the analysis, namely Cronbach Alpha and Composite Reliability respectively. The value produced by both Cronbach Alpha and Composite Reliability was more than 0.6 for the reliability criteria. The factor loading for the validity test was also categorised as valid, with the t-value exceeding 0.5 (see Tables 1 to 3)

Table 1
The respondent's characteristics

Category		Frequency	Percentage
City territory	East	17	17%
	West	25	25%
	Central	27	27%
	North	10	10%
	South	21	21%
Gender	Male	43	43%
	Female	57	57%
Age	20-25	15	15%
	26-30	24	24%
	31-35	31	31%
	≥ 35	30	30%
Usage level	20 product lines	38	38%
	≥ 20 product lines	52	52%
Usage time	3 years	42	42%
	≥ 3 years	58	58%

Table 2
Validity of manifest variable

Latent Variable	Indicators t- Value					Cut-off Value	Category
Brand building block	4.74	4.33	2.59	5.37	7.38	≥1.96	Valid
Brand experience	6.84	4.89	4.98	3.45	4.95	≥1.96	Valid
Brand personality	8.37	5.25	6.29	7.32	5.84	≥1.96	Valid
Brand trust	7.48	6.00	5.84	6.39	7.48	≥1.96	Valid
Brand credibility	4.98	5.98	7.97	3.85	3.60	≥1.96	Valid
Brand preference	7.45	7.94	5.37	7.99	6.27	≥1.96	Valid
Corporate performance	9.86	8.60	7.63	3.37	6.38	≥1.96	Valid
Brand sustainability	8.90	7.34	8.27	7.32	3.59	≥1.96	Valid
Corporate reputation	7.98	9.86	4.82	2.79	2.92	≥1.96	Valid
Corporate brand equity	8.38	7.93	5.37	7.28	5.78	≥1.96	Valid

Table 3
Reliability test of manifest variables

Variable	Cronbach's Alpha	Category
Brand building block	.977	Reliable
Brand experience	.928	Reliable
Brand personality	.981	Reliable
Brand trust	.817	Reliable
Brand preference	.836	Reliable
Brand credibility	.938	Reliable
Corporate performance	.915	Reliable
Brand sustainability	.839	Reliable
Corporate reputation	.957	Reliable
Corporate brand equity	.828	Reliable

The values of model fit-test were classified as good-fit for six measurements, and marginal fit only for one measurement. This result indicates that all variable was chosen, and the theoretical building was in a good, logic, and qualified conceptual background. The 15 hypotheses was supported which means the sampling technique and the variables were accurate. Thus, the customer experiential values can be implemented in corporate brand equity building.

Table 4
Structural equation model fit indices

Hypotheses	Effects between Constructs			Standardized β
H1	Brand building block	→	Brand experience	0.787 (P≥0.00)
H2	Brand building block	→	Brand personality	0.325 (P≥0.00)
H3	Brand building block	→	Brand trust	0.641 (P≥0.00)
H4	Brand experience	→	Brand credibility	0.890 (P≥0.00)
H5	Brand experience	→	Brand preference	0.152 (P≥0.00)
H6	Brand personality	→	Brand credibility	0.246 (P≥0.00)
H7	Brand personality	→	Brand preference	0.173 (P≥0.00)
H8	Brand trust	→	Brand preference	0.502 (P≥0.00)
H9	Brand trust	→	Corporate performance	0.428 (P≥0.00)
H10	Brand credibility	→	Brand sustainability	0.137 (P≥0.00)
H11	Brand credibility	→	Brand sustainability	0.325 (P≥0.00)
H12	Brand preference	→	Brand sustainability	0.122 (P≥0.00)
H13	Corporate performance	→	Corporate reputation	0.145 (P≥0.00)
H14	Brand sustainability	→	Corporate brand equity	0.283 (P≥0.00)
H15	Corporate reputation	→	Corporate brand equity	0.721 (P≥0.00)

Table 5
Model evaluation tests

Constructs	R Square	Composite Reliability	Loading Factor
Brand building block	0.865	0.890	0.587
Brand experience	0.989	1.000	1.000
Brand personality	0.847	0.818	0.754
Brand trust	0.870	0.925	0.953
Brand preference	0.851	0.883	0.874
Brand credibility	0.975	0.859	0.975
Corporate	0.984	1.000	1.000
Performance	0.963	1.000	1.000
Brand sustainability	0.959	0.842	0.869
Corporate reputation	0.972	1.000	1.000
Corporate brand equity			

Table 6
Model fit-test

Goodness of Fit Index	Cut-off Value	Model Result	Category
GFI	≥0.9	0.975	Good Fit
RMSEA	≥0.9	0.987	Good Fit
NFI	≥0.9	0.951	Good Fit
IFI	0.8≤IFI≤0.9	0.896	Marginal Fit
CFI	≥0.9	0.962	Good Fit
PFGI	≥0.9	0.967	Good Fit
RFIs	≥0.9	0.974	Good Fit

DISCUSSION

The study found: (1) Experiential-based brand strategy can determine corporate brand equity. This is due to customer experience in which convinces them on the value of the product than the old model of brand building strategy via marketing campaign or advertising. This would contribute to corporate performance. This can increase the impact of brand strategy on financial performance. Thus, experiential-brand strategy could be a source of competitive advantage as supernormal profit is earned by satisfying the customer (O'Loughlin et al., 2004). (2) The creation of unique brand experience in consumer minds is a major task of the corporation to create values in them. These values are economic, functional, differentiated value, social and lifestyle. All of these values were built in these corporate brands within every five level of attribute product in the core, basic, added, augmented, and potential product level (Barsky & Nash, 2002). (3) Obviously, this certain brand strategy affects the consumer's perceived value of the corporate brand based on their sensory receptor. As the predetermined concept of sensory experience in seeing, hearing, tasting, sensing, and touching, the experiences could create the sixth element of sensation, as the customer becomes more indulged or even addicted (Backstrom & Johansson, 2006). (4) The corporate reputation was also affected by the experiential-based brand strategy, as the experience would shape the consumer's preference. This will have an impact on consumer decision-making. The tendency for the customer to simplify their hierarchical of need in the product based on clues of information could be a convenient way to choose among the rival brands. Consumer product evaluation criteria would be better and less expensive as they experiencing the right product through recognition, rather than trial and error (Addis & Holbrook, 2001). (5) Thus, the brand becomes more credible in their perspective. The brand credibility will counter any customer hesitancy. This worthy experience would seal the corporate brand images as the most reliable among s experience offering (Payne, 2008). (6) Customer experience will satisfy their utilitarian, hedonic, and social needs. Achieving these overall needs of the customer in a fast and better way, would increase customer awareness on corporate brand vis a vis their competitors (Berry et al., 2002). Such a strategy creates a corporate brand sustainability in all variant of the brand with fewer efforts. The larger customer equity on brand, occurs when the customer views the corporate brand in a stereotype way without exception or need for a substitute (Ponsonby & Boyle, 2006).

CONCLUSION

This study concluded that all of the variables are positively correlated and have a significant effect on corporate brand equity. Corporate brand equity based on consumer experiential is essential for brand sustainability and corporate reputation. Managing consumer experiential strategy also becomes a source of brand credibility and brand preference. Meanwhile, brand trust is also a predictor variable for corporate reputation. The study shows experiential based strategy for managing the brand equity was success in consumer goods industry, as the consumer needs to be more convinced by the corporate product rather than any non-corporate competitors. Experiential-based strategy on corporate brand equity could also become critical in managing sustainability of consumer brands. Additionally, corporate performance is important for the brand credibility in experiential-based brand strategy. Thus, human experience embedded in the consumer's mind in relation to the product is key. Brand experience along with brand building blocks would lead to brand equity. Customer response is key to achieving any brand marketing strategy developed on an experience basis. Creating a valuable experience can result in customer loyalty.

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(BINUS, Indonesia)

Veronika Bikse
(LIEPU, Latvia)

Zhanar Lamasheva
(KAZNITU, Kazakhstan)

APU	*Ritsumeikan Asia Pacific University*
ASU	*Applied Science Private University*
AUE	*American University in the Emirates*
BA	*BA School of Business and Finance*
BINUS	*Bina Nusantara University*
CU	*Cairo University*
CURTIN	*Curtin University*
CUT	*Czestochowa University of Technology*
HHB	*Bodø Graduate School of Business, Norway*
INU	*Irbid National University*
KAZNITU	*Kazakh National Technical University*
KKU	*Khon Kaen University*
LA TROBE	*La Trobe University*
LIEPU	*Liepaja University*
MMU	*Manchester Metropolitan University*
NTU	*Nottingham Trent UniversityAUE*
RISEBA	*Riga School of Economics and Business AdministrationBINUS*
RTU	*Riga Technical University*
SUC	*Skyline University College*
SWU	*Srinakharinwirot University*
TUL	*Technical University of Liberec*
UB	*Brawijaya University*
UE	*Wrocław University of EconomicsKAZNITU*
UEA	*University of East Anglia*
UNEJ	*University Of Jember*
UNIZG	*University of Zagreb*
UNUD	*Universitas Udayana*
USU	*Universitas Sumatera Utara*

While every effort has been made to include a complete list of referees for the period stated above, however if any name(s) have been omitted unintentionally or spelt incorrectly, please notify the Chief Executive Editor, *Pertanika* Journals at nayan@upm.my.

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Pertanika Journals

Our goal is to bring high quality research to the widest possible audience

INSTRUCTIONS TO AUTHORS

(Manuscript Preparation & Submission Guide)

Revised: June 2016

Please read the Pertanika guidelines and follow these instructions carefully. Manuscripts not adhering to the instructions will be returned for revision without review. The Chief Executive Editor reserves the right to return manuscripts that are not prepared in accordance with these guidelines.

MANUSCRIPT PREPARATION

Manuscript Types

Pertanika accepts submission of mainly **four** types of manuscripts for peer-review.

1. **Regular article**

   Regular articles are full-length original empirical investigations, consisting of introduction, materials and methods, results and discussion, conclusions. Original work must provide references and an explanation on research findings that contain new and significant findings.

   Size: Generally, these are expected to be between 6 and 12 journal pages (excluding the abstract, references, tables and/or figures), a maximum of 80 references, and an abstract of 100–200 words.

2. **Review article**

   These report critical evaluation of materials about current research that has already been published by organizing, integrating, and evaluating previously published materials. It summarizes the status of knowledge and outline future directions of research within the journal scope. Review articles should aim to provide systemic overviews, evaluations and interpretations of research in a given field. Re-analyses as meta-analysis and systemic reviews are encouraged. The manuscript title must start with "Review Article:".

   Size: These articles do not have an expected page limit or maximum number of references, should include appropriate figures and/or tables, and an abstract of 100–200 words. Ideally, a review article should be of 7 to 8 printed pages.

3. **Short communications**

   They are timely, peer-reviewed and brief. These are suitable for the publication of significant technical advances and may be used to:

   (a) report new developments, significant advances and novel aspects of experimental and theoretical methods and techniques which are relevant for scientific investigations within the journal scope;

   (b) report/discuss on significant matters of policy and perspective related to the science of the journal, including 'personal' commentary;

   (c) disseminate information and data on topical events of significant scientific and/or social interest within the scope of the journal.

   The manuscript title must start with "*Brief Communication*:".

   Size: These are usually between 2 and 4 journal pages and have a maximum of three figures and/or tables, from 8 to 20 references, and an abstract length not exceeding 100 words. Information must be in short but complete form and it is not intended to publish preliminary results or to be a reduced version of Regular or Rapid Papers.

4. **Others**

Brief reports, case studies, comments, concept papers, Letters to the Editor, and replies on previously published articles may be considered.

PLEASE NOTE: NO EXCEPTIONS WILL BE MADE FOR PAGE LENGTH.

Language Accuracy

Pertanika **emphasizes** on the linguistic accuracy of every manuscript published. Articles must be in **English** and they must be competently written and argued in clear and concise grammatical English. Contributors are strongly advised to have the manuscript checked by a colleague with ample experience in writing English manuscripts or a competent English language editor.

Author(s) **must provide a certificate** confirming that their manuscripts have been adequately edited. A proof from a recognised editing service should be submitted together with the cover letter at the time of submitting a manuscript to Pertanika**. All editing costs must be borne by the author(s)**. This step, taken by authors before submission, will greatly facilitate reviewing, and thus publication if the content is acceptable.

Linguistically hopeless manuscripts will be rejected straightaway (e.g., when the language is so poor that one cannot be sure of what the authors really mean). This process, taken by authors before submission, will greatly facilitate reviewing, and thus publication if the content is acceptable.

MANUSCRIPT FORMAT

The paper should be submitted in one column format with at least 4cm margins and 1.5 line spacing throughout. Authors are advised to use Times New Roman 12-point font and *MS Word* format.

1. Manuscript Structure

Manuscripts in general should be organised in the following order:

Page 1: *Running title*

This page should **only** contain the running title of your paper. The running title is an abbreviated title used as the running head on every page of the manuscript. The running title should not exceed 60 characters, counting letters and spaces.

Page 2: *Author(s) and Corresponding author information*.

This page should contain the **full title** of your paper not exceeding 25 words, with name(s) of all the authors, institutions and corresponding author's name, institution and full address (Street address, telephone number (including extension), hand phone number, and e-mail address) for editorial correspondence. First and corresponding authors must be clearly indicated.

The names of the authors may be abbreviated following the international naming convention. e.g. Salleh, A.B.[1], Tan, S.G[2*]., and Sapuan, S.M[3].

Authors' addresses. Multiple authors with different addresses must indicate their respective addresses separately by superscript numbers:

George Swan[1] and Nayan Kanwal[2]

[1]Department of Biology, Faculty of Science, Duke University, Durham, North Carolina, USA.,
[2]Office of the Deputy Vice Chancellor (R&I), Universiti Putra Malaysia, Serdang, Malaysia.

A **list** of number of **black and white / colour figures and tables** should also be indicated on this page**.** Figures submitted in color will be printed in colour. See *"5. Figures & Photographs"* for details.

Page 3: *Abstract*

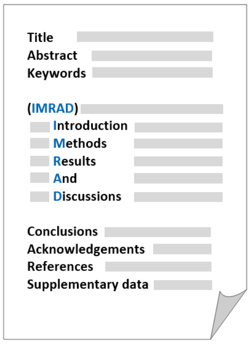
This page should **repeat** the **full title** of your paper with only the **Abstract** (the abstract should be less than 250 words for a Regular Paper and up to 100 words for a Short Communication), and **Keywords**.

Keywords: Not more than eight keywords in alphabetical order must be provided to describe the contents of the manuscript.

Page 4: *Introduction*
This page should begin with the **Introduction** of your article and followed by the rest of your paper.

2. *Text*

Regular Papers should be prepared with the headings *Introduction, Materials and Methods, Results and Discussion*, *Conclusions, Acknowledgements, References, and Supplementary data* (if avavailble) in this order.



MAKE YOUR ARTICLES AS CONCISE AS POSSIBLE

Most scientific papers are prepared according to a format called IMRAD. The term represents the first letters of the words Introduction, Materials and Methods, Results, And, Discussion. It indicates a pattern or format rather than a complete list of headings or components of research papers; the missing parts of a paper are: Title, Authors, Keywords, Abstract, Conclusions, and References. Additionally, some papers include Acknowledgments and Appendices.

The Introduction explains the scope and objective of the study in the light of current knowledge on the subject; the Materials and Methods describes how the study was conducted; the Results section reports what was found in the study; and the Discussion section explains meaning and significance of the results and provides suggestions for future directions of research. The manuscript must be prepared according to the Journal's instructions to authors.

3. *Equations and Formulae*

These must be set up clearly and should be typed double spaced. Numbers identifying equations should be in square brackets and placed on the right margin of the text.

4. *Tables*

All tables should be prepared in a form consistent with recent issues of Pertanika and should be numbered consecutively with Roman numerals. Explanatory material should be given in the table legends and footnotes. Each table should be prepared on a new page, embedded in the manuscript.

When a manuscript is submitted for publication, tables must also be submitted separately as data - .doc, .rtf, Excel or PowerPoint files- because tables submitted as image data cannot be edited for publication and are usually in low-resolution.

5. *Figures & Photographs*

Submit an **original** figure or photograph. Line drawings must be clear, with high black and white contrast. Each figure or photograph should be prepared on a new page, embedded in the manuscript for reviewing to keep the file of the manuscript under 5 MB. These should be numbered consecutively with Roman numerals.

Figures or photographs must also be submitted separately as TIFF, JPEG, or Excel files- because figures or photographs submitted in low-resolution embedded in the manuscript cannot be accepted for publication. For electronic figures, create your figures using applications that are capable of preparing high resolution TIFF files. In general, we require **300 dpi** or higher resolution for **coloured and half-tone artwork**, and **1200 dpi or higher** for **line drawings** are required.

Failure to comply with these specifications will require new figures and delay in publication.
NOTE: Illustrations may be produced in colour at no extra cost at the discretion of the Publisher; the author could be charged Malaysian Ringgit 50 for each colour page.

6. *References*

References begin on their own page and are listed in alphabetical order by the first author's last name. Only references cited within the text should be included. All references should be in 12-point font and double-spaced.

NOTE: When formatting your references, please follow the **APA reference style** (6th Edition). Ensure that the references are strictly in the journal's prescribed style, failing which your article will **not be accepted for peer-review**. You may refer to the *Publication Manual of the American Psychological Association* for further details (http://www.apastyle.org/).

7. *General Guidelines*

Abbreviations: Define alphabetically, other than abbreviations that can be used without definition. Words or phrases that are abbreviated in the introduction and following text should be written out in full the first time that they appear in the text, with each abbreviated form in parenthesis. Include the common name or scientific name, or both, of animal and plant materials.

Acknowledgements: Individuals and entities that have provided essential support such as research grants and fellowships and other sources of funding should be acknowledged. Contributions that do not involve researching (clerical assistance or personal acknowledgements) should **not** appear in acknowledgements.

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Footnotes: Current addresses of authors if different from heading may be inserted here.

Page Numbering: Every page of the manuscript, including the title page, references, tables, etc. should be numbered.

Spelling: The journal uses American or British spelling and authors may follow the latest edition of the Oxford Advanced Learner's Dictionary for British spellings.

SUBMISSION OF MANUSCRIPTS

Owing to the volume of manuscripts we receive, we must insist that all submissions be made electronically using the **online submission system ScholarOne™**, a web-based portal by Thomson Reuters. For more information, go to our web page and click "**Online Submission**".

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   COVER LETTER: All submissions must be accompanied by a cover letter detailing what you are submitting. Papers are accepted for publication in the journal on the understanding that the article is **original** and the content has **not been published** either **in English** or **any other language(s)** or **submitted for publication elsewhere**. The letter should also briefly describe the research you are reporting, why it is important, and why you think the readers of the journal would be interested in it. The cover letter must also contain an acknowledgement that all authors have contributed significantly, and that all authors have approved the paper for release and are in agreement with its content.

   The cover letter of the paper should contain (i) the title; (ii) the full names of the authors; (iii) the addresses of the institutions at which the work was carried out together with (iv) the full postal and email address, plus telephone numbers and emails of all the authors. The current address of any author, if different from that where the work was carried out, should be supplied in a footnote.

   The above must be stated in the cover letter. Submission of your manuscript will not be accepted until a cover letter has been received.

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