



***EFFICIENCY, PRODUCTIVITY AND COMPETITIVENESS OF THE  
INSURANCE INDUSTRY IN MALAYSIA AND AUSTRALIA***

**LEE HUI SHAN**

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**By**

**LEE HUI SHAN**

**Thesis Submitted to the School of Graduate Studies,  
Universiti Putra Malaysia, in Fulfilment of the  
Requirements for the Degree of Doctor of Philosophy**

**December 2018**

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Abstract of thesis presented to the Senate of Universiti Putra Malaysia in  
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**December 2018**

**Chairman : Associate Professor Cheng Fan Fah, PhD**  
**Faculty : Economics and Management**

The present study provides an analysis of the efficiency, productivity and competitiveness for 62 insurance firms in Malaysia and 72 insurance firms in Australia from year 2011 to 2016. The methods being utilised are Data Envelopment Analysis, Malmquist Productivity Index and Panzar-Rosse. Malaysia is experiencing insurance opportunity growth due to the expansion of population and the rising demand of Takaful insurance. Meanwhile, insurance companies in Australia is facing more competition and may cause an unsound performance. The objectives of this research are to examine the sources and development of the efficiency and productivity, identify the competitiveness of insurance market structure, analyse the effects of firms-specific factors, macroeconomics factors and globalisation factors on the performance of the insurance firms and investigate the relationship in between efficiency, productivity and competitiveness in the insurance industry.

The findings postulate that inefficient insurance companies in Malaysia is caused by the scale of production rather than the inefficient use of resources due to managerial best practice. Productivity of the insurers are showing a progression trend that is attributed to technological productivity. The insurance industry in Malaysia is in the monopolistic competition market power. Insurers' size has positive effect but commissions paid, claims liability and age seem to negatively influence the performance of insurers. On the macroeconomic factors, economic growth, interest rate and inflation are more incline to affect efficiency but less likely on productivity and competitiveness. Overall, globalisation factors are negatively influencing efficiency, positively affecting productivity and less significant to competitiveness of insurers. The influences of efficiency and productivity on competitiveness are positive and suggest that efficient and productive firms will improve competition to benefit consumers. However, the higher competition among the insurers will lead to a deterioration in efficiency.

In Australia, the insurers are operating at inappropriate scale. Generally, insurers show a progressing productivity and it is attributed to technical efficiency change. Greater size, commissions paid and age generally enhance the performance of insurers but higher claims liability causes insurers to be inefficient. From the macroeconomic perspective, greater economic growth, interest rate and inflation generally hinder the performance of insurers. Generally, globalisation factors are not significant to the efficiency and competitiveness of insurers but they enhance the productivity of insurers. Strong monopolistic competition market power exists in the Australian's insurance industry. The relationship among efficiency, productivity and competition is positive and proposes that the insurance environment in Australia encourage the competition among the insurance players to achieve comparative advantage and protect the interest of consumers.

The implications of this research suggest that the insurers in Malaysia and Australia need to constantly monitor and react to the changes in macroeconomic factors. This is because, they could manage well on firms-specific factors, but the macroeconomic environments which are uncontrollable could impede their performance. Furthermore, the insurers need to understand that the effects of globalisations on the performance of insurers are different from the dimensions of economic, social and political. They are encouraged to improve efficiency, productivity and competitiveness to benefit both consumers and insurers.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia  
sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

## **KECEKAPAN, PRODUKTIVITI DAN KOMPETITISI ANTARA INDUSTRI INSURANS DI MALAYSIA DAN AUSTRALIA**

Oleh

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Kajian ini menyediakan analisis kecekapan, produktiviti dan kompetisi untuk 62 firma insurans di Malaysia dan 72 firma insurans di Australia dari tahun 2011 hingga 2016. Kaedah yang digunakan ialah Data Envelopment Analysis, Malmquist Productivity Index dan Panzar-Rosse. Malaysia sedang mengalami pertumbuhan peluang insurans berikutan perkembangan populasi dan peningkatan permintaan insurans Takaful. Sementara itu, syarikat insurans di Australia menghadapi lebih banyak persaingan dan boleh menyebabkan prestasi yang tidak baik. Objektif penyelidikan ini adalah untuk mengkaji sumber dan perkembangan kecekapan dan produktiviti, mengenal pasti struktur kompetisi pasaran insurans, menganalisis kesan faktor khusus firma, faktor makroekonomi dan faktor globalisasi terhadap prestasi syarikat insurans dan menyiasat hubungan antara kecekapan, produktiviti dan kompetisi dalam industri insurans.

Penemuan ini menyatakan bahawa syarikat insurans yang tidak cekap di Malaysia disebabkan oleh skala pengeluaran dan bukannya penggunaan sumber yang tidak cekap disebabkan oleh amalan pengurusan. Produktiviti insurans menunjukkan trend perkembangan yang disebabkan oleh produktiviti teknologi. Industri insurans di Malaysia berada dalam kuasa persaingan monopolistik. Saiz insurans mempunyai kesan positif tetapi komisen dibayar, liabiliti tuntutan dan hayat mempunyai kesan negatif terhadap prestasi syarikat insurans. Mengenai faktor makroekonomi, pertumbuhan ekonomi, kadar faedah dan inflasi lebih cenderung untuk menjejaskan kecekapan tetapi kurang impak kepada produktiviti dan kompetisi. Secara keseluruhan, faktor globalisasi mempengaruhi kecekapan secara negatif, memberi kesan positif kepada produktiviti dan kurang impak kepada kompetisi. Pengaruh kecekapan dan produktiviti ke atas kompetisi adalah positif dan mencadangkan bahawa firma yang cekap dan produktif akan meningkatkan persaingan untuk memberi manfaat kepada pengguna. Bagaimanapun, persaingan yang lebih tinggi di kalangan syarikat insurans akan meningkatkan kecekapan.

Di Australia, syarikat insurans beroperasi pada skala tidak sesuai. Pada umumnya, syarikat insurans menunjukkan produktiviti yang sedang berkembang dan ini disebabkan oleh perubahan kecekapan teknikal. Saiz yang lebih besar, komisen yang dibayar dan hayat umumnya meningkatkan prestasi syarikat insurans tetapi tanggungan tuntutan yang lebih tinggi menyebabkan syarikat insurans tidak cekap. Dari perspektif makroekonomi, pertumbuhan ekonomi yang lebih tinggi, kadar faedah dan inflasi umumnya mengurangkan prestasi syarikat insurans. Secara amnya, faktor globalisasi tidak penting kepada kecekapan dan kompetisi syarikat insurans tetapi mereka meningkatkan produktiviti syarikat insurans. Kuasa pasaran persaingan monopolistik yang kukuh wujud dalam industri insurans Australia. Hubungan antara kecekapan, produktiviti dan persaingan adalah positif dan mencadangkan bahawa persekitaran insurans di Australia menggalakkan persaingan di kalangan pemain insurans untuk mencapai kelebihan perbandingan dan melindungi kepentingan pengguna.

Implikasi kajian ini menunjukkan bahawa syarikat insurans di Malaysia dan Australia perlu sentiasa memantau dan bertindak balas terhadap perubahan dalam faktor makroekonomi. Ini kerana, mereka boleh menguruskan dengan baik pada faktor-faktor khusus firma, tetapi persekitaran makroekonomi yang tidak dapat dikawal boleh menghalang prestasi mereka. Lebih-lebih lagi, syarikat insurans perlu memahami bahawa kesan globalisasi terhadap prestasi syarikat insurans adalah berbeza daripada dimensi ekonomi, sosial dan politik. Industry insurans digalakkan untuk meningkatkan kecekapan, produktiviti dan daya saing untuk memberi manfaat kepada pengguna dan syarikat insurans.

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I certify that a Thesis Examination Committee has met on **18 December 2018** to conduct the final examination of Lee Hui Shan on her thesis entitled “Efficiency, Productivity and Competitiveness of the Insurance Industry in Malaysia and Australia” in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Doctor of Philosophy.

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## LIST OF ABBREVIATIONS

AEC	ASEAN Economic Community
APRA	Australian Prudential Regulation Authority
ASEAN	Association of Southeast Asian Nation
BNM	Bank Negara Malaysia
COMM	Commissions paid
CL	Claims liabilities
CRS	Constant return to scale
DEA	Data Envelopment Analysis
DMU	Decision Making Unit
ES	Efficient Structure
GDP	Gross domestic product
EFFCH	Technical Efficiency Change/ Efficiency change
GLO	Overall globalisation
GLOECO	Economic globalisation
GLOPOL	Political globalisation
GLOSOC	Social globalisation
IAA	Italian Antitrust Authority
INF	Inflation
LP	Linear programming
MPI	Malmquist Productivity Index
OECD	Organisation for Economic Co-operation and Development
PD	Prices for debt capital
PE	Prices for equity capital
PL	Prices for labour and operating expenses
PR	Panzar-Rosse
PTE	Pure technical efficiency
PTECH	Pure technical efficiency change
R	Revenue
RIR	Real interest rate
RMP	Relative market power
ROA	Return on assets
SCP	Structure conduct performance
SE	Scale efficiency
SECH	Scale efficiency change
TA	Total assets
TE	Technical efficiency
TECHCH	Technological change
TFPCH	Total factor productivity
VRS	Variable return to scale

# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

This chapter presents background of the study, statement of the problems, objectives of the study, significance of the study and organisation of the thesis. Firstly, this study provides the general roles of insurance services. Next, the financial development in the selected countries in Asia Pacific is also being discussed. It also explains the importance of firm-specific factors and macroeconomics factors and globalisation factors that influence the performances of insurance firm. It is followed by the background of the insurance industry in Malaysia and Australia. The research framework is also presented. Finally, it elaborates the organisation of the thesis.

### 1.2 Background of the Study

The crucial roles of insurance industry in the financial services sectors in contributing to the economic growth for most of the developed and developing countries are un-denied-able. The functions of insurance industry in the financial services including allocating efficient resource, minimising transaction costs, producing liquidity, facilitation on economics of scale in investment, and diversifying of financial losses (Haiss & Sümegi, 2008; Outreville, 1996; Shi, Wang, & Xing, 2015).

The contributions of the efficient insurance sector to the overall economy have been established by Haiss and Sümegi (2008), Sen and Madheswaran (2013) and Ward and Zurbruegg (2002). They have clearly postulated the positive association between the well beings of insurance sector and the growth of the economy. An efficient financial system in the process of resource generation and allocation will postulate higher contribution to the productivity and growth of the economic. To ensure a comprehensive financial system, it should involve the engagement of insurance product to diversify the risk. (Beck, 2002) explains the role of insurance as financial intermediaries in resolving informational asymmetry in the production process to achieve effectiveness in economic growth. Thus, an efficient insurance mechanism enhances innovations followed by positive propositions on the economic growth. Moreover, the documentation of the literature reviews such as Arena (2008), Levine, Loayza and Beck (2000) and Outreville (1996) support the argument that insurance market could result a positive influence on the economy through risk transfer and indemnification in facilitating a myriad of economic transactions.

Insurance participation in the function of financial intermediation plays vital role to the economic growth by promoting long term saving, transfer of funds, risk management, development of capital markets support on economic growth (Fah & Sin, 2014; Sen & Madheswaran, 2013). From an overview of the insurance penetration in the world, as in Table 1.1, most of the insurance penetration in developed countries is above 1%, whereas

the insurance penetration in developing countries is below 1%. It shows that the developing countries are under-insured. Most of the countries in Asian are developing countries, the developing economies show the significance of insurance contribution to the development of the countries as suggested by Outreville (1996), Pradhan, Arvin, Bahmani, Bennett and Hall (2017).

**Table 1.1: Overview of insurance penetration in selected countries**

Insurance penetration		2011	2016
<b>Developed countries</b>			
Australia	Life insurance premium to GDP (%)	3.14	3.04
	Non-life insurance premium to GDP (%)	2.08	2.21
Canada	Life insurance premium volume to GDP (%)	2.99	3.19
	Non-life insurance premium volume to GDP (%)	2.49	2.70
Denmark	Life insurance premium to GDP (%)	6.76	7.33
	Non-life insurance premium to GDP (%)	2.56	2.64
Germany	Life insurance premium to GDP (%)	3.22	2.90
	Non-life insurance premium to GDP (%)	1.86	1.91
France	Life insurance premium volume to GDP (%)	6.48	5.48
	Non-life insurance premium volume to GDP (%)	2.32	2.01
Japan	Life insurance premium to GDP (%)	6.83	6.23
	Non-life insurance premium to GDP (%)	1.56	1.55
Korea	Life insurance premium to GDP (%)	6.65	7.43
	Non-life insurance premium to GDP (%)	4.43	4.75
Spain	Life insurance premium volume to GDP (%)	2.79	2.79
	Non-life insurance premium volume to GDP (%)	2.19	2.15
Switzerland	Life insurance premium volume to GDP (%)	4.94	4.58
	Non-life insurance premium volume to GDP (%)	2.11	2.07
United States	Life insurance premium volume to GDP (%)	3.57	3.31
	Non-life insurance premium volume to GDP (%)	3.10	3.21
<b>Developing countries</b>			
Albania	Life insurance premium to GDP (%)	0.08	0.06
	Non-life insurance premium to GDP (%)	0.49	0.86
Algeria	Life insurance premium volume to GDP (%)	0.05	0.04
	Non-life insurance premium volume to GDP (%)	0.55	0.69
China	Life insurance premium to GDP (%)	1.79	2.35
	Non-life insurance premium to GDP (%)	0.95	1.17
Georgia	Life insurance premium volume to GDP (%)	0.07	0.08
	Non-life insurance premium volume to GDP (%)	0.48	0.54
Indonesia	Life insurance premium to GDP (%)	1.10	1.11

	Non-life insurance premium to GDP (%)	0.37	0.43
Malaysia	Life insurance premium to GDP (%)	2.77	2.84
	Non-life insurance premium to GDP (%)	1.32	1.25
Mongolia	Life insurance premium volume to GDP (%)	0.00	0.00
	Non-life insurance premium volume to GDP (%)	0.38	0.42
Pakistan	Life insurance premium volume to GDP (%)	0.37	0.58
	Non-life insurance premium volume to GDP (%)	0.23	0.22
Peru	Life insurance premium volume to GDP (%)	0.68	0.72
	Non-life insurance premium volume to GDP (%)	0.71	0.81
Russian	Life insurance premium to GDP (%)	0.07	0.25
	Non-life insurance premium to GDP (%)	0.92	0.84

*Source: The World Bank*

**Table 1.2: Selected Financial Sector Indicators in Asia Pacific Countries**

	Deposit money banks' assets to GDP (%)	Stock market capitalization to GDP (%)	Insurance company assets to GDP (%)
<b>2001</b>			
Australia	30.17	55.90	38.19
Malaysia	14.06	39.70	17.39
Thailand	7.78	20.30	8.36
China	5.97	46.47	7.33
Indonesia	5.17	6.32	2.22
<b>2006</b>			
Australia	31.24	99.14	36.61
Malaysia	11.73	35.50	18.18
Thailand	9.10	43.80	10.65
China	6.59	28.75	8.99
Indonesia	5.72	9.55	2.84
<b>2011</b>			
Australia	30.37	86.69	22.42
Malaysia	11.20	42.33	19.56
Thailand	11.42	60.95	21.69
China	7.03	103.79	12.51
Indonesia	8.53	11.97	3.51
<b>2016</b>			
Australia	31.24	52.06	23.84

Malaysia	10.66	38.84	20.66
Thailand	12.62	71.66	20.78
China	8.45	231.62	18.13
Indonesia	17.76	8.98	4.47

*Source: The World Bank*

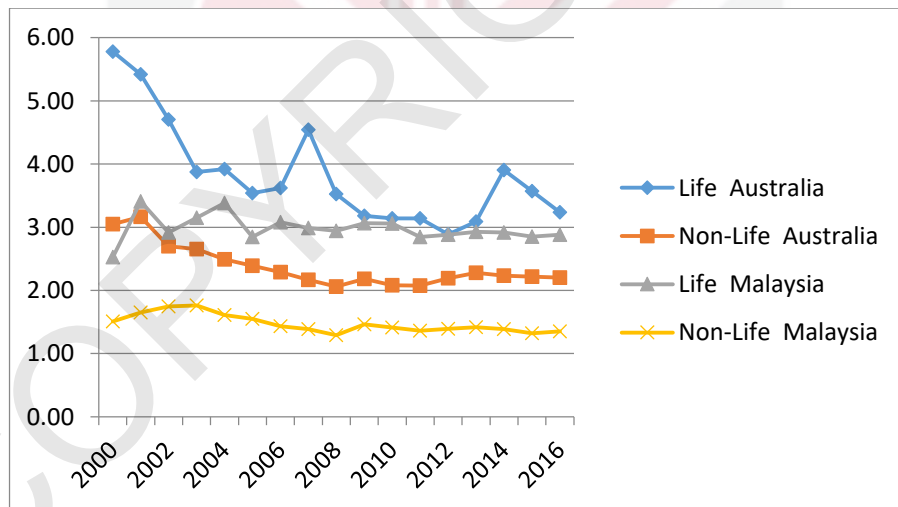
As in Table 1.2, undoubted that banking and stock market play significant role in a country, the importance of insurance companies' roles are also crucial. This is because the insurance company assets to GDP in Malaysia and Australia are more than 20% in 2016. Moreover, it is noticed that the insurance company assets to GDP in Australia is reducing from 38.19% in year 2001 to 23.84% in 2016 but there is an increasing trend in Malaysia as the number reported is 17.39% in 2001 and improves to 20.66% in 2016. Thus, the differences of decreasing trend and increasing trend in insurance company assets to GDP in Australia and Malaysia, respectively have shed light to an interesting area to study on the efficiency, productivity and competitiveness of insurance in Australia and Malaysia.

As insurance saturation in Asia Pacific is forecasted to increase and given the ubiquitous characteristics of Asian markets, it is relevant to investigate how efficient, productive and competitive is the insurance market in the region. While literature of efficiency and productivity of insurance is well-established in the Western developed markets (see Biener, Eling, & Wirfs, 2016; Cummins & Xie, 2013; Eling & Schaper, 2017; Luhn, 2009), there is short of such in-depth analysis designed particularly for the Asian emerging market. In this research, Malaysia is a country classified by the World Bank as a high middle-income economy in the Asia region, is chosen to provide for a detailed analysis on this research area. Malaysia's favourable demographics, including a young population and growing middle class, remain supportive of a long-term structural growth for both general and life insurance. Nevertheless, the penetration rate has stagnated in recent years. Thus, government has a bigger role to play alongside industry players and regulators (The Edge Markets, 2017). As the markets in the Asia Pacific region show a number of dissimilarities in financial and economic aspects, this study also observes Australia as a developed market in Asia Pacific. It is also because Australia has undergone a noteworthy shift in regulatory landscape to ensure the soundness of insurance sector in order to create a consumer friendly environment that promotes good investment decisions (Norton Rose Fulbright, 2014).

The motivation to include Malaysia and Australia in this study is for the reason that Malaysia as a developing whereas Australia as a developed country in the Asia Pacific region, is aimed to facilitate the research in efficiency, productivity and competitiveness against the scanty of research in Asia Pacific countries. Furthermore, in the Financial Sector Blueprint 2011-2020 published by the Central Bank of Malaysia, it is reported that a more efficient, productive, competitive and stable insurance system is a necessary precondition for Malaysia's economic transformation (Bank Negara Malaysia, 2011). The financial sector in Malaysia is served as the foundation from which Malaysia's transformation into a high high-income economy. It can be accomplished through effective and efficient domestic and regional financial intermediation. The report

highlights that the financial market in Australia is one of the efficient financial market in the world in terms of speed, security, convenience and cost. In order to achieve the vision to improve the performance of financial institutions in Malaysia with a strong, comprehensive and progressive financial system, it is reasonable to examine the performance of insurers in Malaysia as compared to Australia to understand the how well the insurance industry in Malaysia has operated so far. Furthermore, the uniqueness of insurance industry in Malaysia is that it consist of both conventional and Takaful insurers but Australia only has conventional insurers. This is because majority of the population in Malaysia are Muslim and they have high demand on Takaful insurance product. Hence, it is interesting to compare the difference between conventional insurers and Takaful insurers.

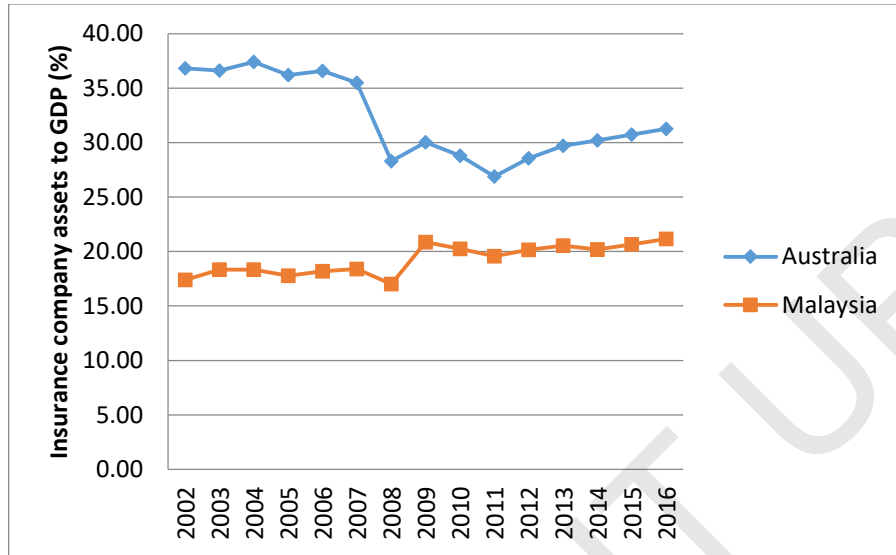
From Figure 1.1, it can be seen that from year 2000 to year 2016, the insurance market penetration (percentage of premium volume to Gross Domestic Product) for Malaysia in for both life market and non-life market respectively are lower than Australia. Despite the lower insurance market penetration in Malaysia compared to Australia, it is observed that Australia insurance market penetration is in decreasing trend while the trend for Malaysia is quite stable. Furthermore, in Figure 1.2, the insurance company assets to GDP from 2002 to 2016 in Malaysia is in between 14% to 25% which is lower than Australia that is in between 25% to 40%. Thus, it is worth to compare the efficiency, productivity and competitiveness of insurance market in Malaysia and Australia given the different natures of insurance penetration and insurance company assets to GDP.



**Figure 1.1: Insurance market penetration in Malaysia and Australia**

*Source: The World Bank*





**Figure 1.2: Insurance company assets to GDP (%) in Malaysia and Australia**  
*Source: The World Bank*

The functions of the insurance between life insurance and non-life insurance are different as life insurance covers the risk management related to human lives whereas non-life insurance covers the risk management related to non-human. The contribution of premium between life and non-life to GDP also differs which was illustrated in Figure 1.1. For instance, the contribution of general insurance premium in two countries generally is lower than life insurance premium. Therefore, the roles of life and non-life insurance are contributing in different dimensions to the economics.

In a summary, insurance industry in Malaysia has proven progressive expansion (Asia Insurance Insurance, 2015) and the competitive pressure on incumbent insurance industry in Australia (Marsh, 2016) are the examples that worthwhile to put Malaysia and Australia as a comparison analysis to examine the issues of efficiency, productivity and competitiveness of insurance industry in the selected countries in Asia Pacific. The rapidly changing environment will influence the performance of insurance companies in Malaysia and Australia. Moreover, as the liberalisation in insurance sector, the competition will rise, thus, the sustainability success of the insurance sector in Malaysia and Australia will vitally rely on its efficiency, productivity and competitiveness. Weiss and Choi (2008) mention that efficiency in insurance is vital to ensure a prudent solvency that assists in insurance company to grow prosperously in order to sustain in the competitive environment. Therefore, it is appealing to examine the efficiency, productivity and competitiveness of the insurance sector in Malaysia and Australia that had evolved during the past decade.

### 1.2.1 Background of the Insurance Industry in Malaysia

The insurance outlook for Malaysia is positive because there is strong demand for insurance to be underpinned by optimistic long-term structural trends in Malaysia.

Currently, the insurance market penetration rate is still low, but working-class population and life expectancy are rising. The insurance penetration rate, measured as the value of premiums relative to gross domestic product, Malaysia reports an average of 3% which is still below the Organisation for Economic Co-operation and Development (OECD) with an average of 5% (The Star, 2018). Thus, the insurance industry view this trend as opportunity, as consumer continue to fuel the need for insurance protection. However, the insurance industry is quite competitive because there are more than thirty insurance companies to serve this rising insurance demand. It is believed that the well-performed insurers could reap the benefits in accordance to the Malaysia's Economic Transformation Plan. This is because the Malaysia's Economic Transformation Plan calls for insurance and Takaful penetration to hit 75% of the population by 2020 (News Straits Times, 2017; Oxford Business Group, 2017).

Furthermore, Malaysia is one of the countries in Association of Southeast Asian Nations (ASEAN), the institution of the ASEAN Economic Community (AEC) in 2015 is a major highlight in the regional economic integration agenda in ASEAN. One of the components in this agenda is "Financial Integration, Financial Inclusion, and Financial Stability" to guarantee that the financial sector is comprehensive and steady remains a key objective of regional economic integration. The needs of having more integrated insurance to connect with capital markets are to support financial integration to assist intra-ASEAN investment and trade (AEC, 2015). These will be supported by robust financial market infrastructure as well as insurance sector that is cost-efficient and safe (Lee, Low, Chong, & Sia, 2018). Hence, efficiency improvement in insurance sector, greater insurance regulatory convergence, and a dedicated regional insurance framework are the key challenges for Malaysia to achieve AEC in the future.

Moreover, Takaful insurance are gaining popularity in Malaysia due to the greater size of Islamic population in Malaysia, consumers' awareness on Takaful insurance products and continuous government's efforts to promote Takaful insurance. Takaful insurance is a contract of risk sharing among policyholders in contrast with conventional insurance which is a contract of risk transferring from the insured to insurer against an agreed amount of premium. The insurance company that administers the matters of the business through a diversity of financial incentives is called as Takaful operator. In Takaful insurance, it is a non-commutative contract where the policyholders insure one another on a non-profit basis and contribute to the Takaful pool on the basis of conditional donation (Khan, 2015). In addition, the market share of Takaful in Malaysian's insurance industry is demonstrating a rising trend from 8.6% in 2011 rises to 12.1% in 2016 (Malaysian Takaful Association, 2016). Hence, the specialty of Malaysia's insurance industry in contrasts to most of the countries is that Malaysia consists of Takaful insurance apart from the traditional life and general insurance.

### **1.2.2 Background of the Insurance Industry in Australia**

From the annual reports published by Australian Prudential Regulation Authority (APRA, 2015), the Australian insurance market can be described as being sturdily capitalised and highly competitive. This is because, the enhancement of technology, in particular the digital technology and internet has made it cheaper and easier for new

competitor to enter the market. However, it renders a problem to the government of Australia whether to remain or to reduce the competition of the insurance market. This is because they play crucial roles to influence the quality, cost of products and services that are provided to consumers. APRA pursues to keep a low occurrence of failure of insurers while not impeding continued improvement in efficiency or unduly hindering competition (Australian Prudential Regulation Authority, 2017). According to the statistic provided by APRA, there are 4 insurers failed in the year 2011 and are none of the insurers fail from year 2012 to 2016. Although the number of failures in insurance industry is reported, but there is lack of measurement in the performance in terms of efficiency, productivity and competitiveness. These facts have made the evaluation of efficiency, productivity and competitiveness in Australian insurance market cannot be neglected.

### **1.2.3 Background on the Performance of the Insurance Industry**

First and foremost, the sustainability and survivability of insurance companies in the competitive market is critical depending on the performance of insurance companies. The performance of the insurers are measured as efficiency, productivity and competitiveness. Cummins and Zi (1998) highlights that the problems of insolvency, the issue of mergers and acquisitions, rapidly rising competition from non-traditional sources such as banks, mutual funds and securities brokers are among the challenges to the insurance sector. These issues might render some insurance companies to be inefficient, that leads to weak performance among these inefficient insurance companies. As a result, they might end up with an unfortunate consequence which is to be driven out by the efficient insurance companies and other financial sectors. Secondly, the issue of wastage in the scarce resources in the insurance sector is part of the concern for the policy maker. Thus, to achieve economy at large, the insurance sector should have a proper efficient production process and be competitive in managing the companies.

Due to the underdevelopment of the financial markets in Malaysia which is one of the developing country in Asia Pacific, the enhancement of the efficiency and performance of insurance sector would have momentous consequence on the financial resources allocation through the facilitation of insurance's role in risk management, capital market intensification, provision in healthcare and financing in infrastructure (Adams, Irwin, Capparelli, Gratowski, & Porritt, 2015). Additionally, Australia as one of the developed country in Asia Pacific, undergoes a significant shift in regulatory landscape from ensuring consumers have adequate information to make informed investment choices to ensuring the consumer environment is one that promotes good investment decisions (Norton Rose Fulbright, 2014). Hence, it is pertinent to identify the performance of insurers in Australia to ensure that the insurance sectors provide a good consumer environment to promote good investment decisions.

### **1.2.4 Background on the Factors that Influence the Performance of Insurance**

The factors that influence the performance of insurance firms are firm-specific factors, macroeconomic factors and globalisation factors. From the firm-specific and macroeconomic perspectives, the study of these factors influence the performance of

insurers is vital as recommended by the literatures (Biener et al., 2016; Cummins, Weiss, Xie, & Zi, 2010; Eling & Luhnen, 2010). They are among the pioneer researches that study the performance of insurance sector despite the efficiency of banking sector is investigated at the earlier decades by Benston (1964) and Berger, Hanweck and Humphrey (1987).

Firm-specific factors are the main drivers to enhance the performance of the insurers (Alhassan & Biekpe, 2015). Size, commissions paid, claims liabilities and age are among the firm-specific factors that are employed in this research.

Meanwhile, the macroeconomic factors are the complete economic cycle but uncontrollable issues by the insurers (Eling & Schaper, 2017). Therefore, the study on the impacts macroeconomics factors namely economic growth, interest rate and inflation on insurance sector should not be neglected as insurance sector are equally imperative in strengthening the financial stability in the economics.

Although Asia's economies have benefited momentarily from the global economy, KOF Index of Globalisation that recommends that Asia is still "under-globalised" (West, 2014). KOF Index of Globalisation that includes the economic, social and political characteristics of globalisation explains it is process of generating linkages of communications among players at multi-continental distances, facilitated through a diversity of flows including people, information and ideas, capital and goods (Dreher, 2006). West (2014) claims that despite Asia's economic dynamism, Asia is relatively a way underneath the world average. In Asia Pacific, the highest globalisation ranking is Singapore (5<sup>th</sup>), followed by Australia (21<sup>st</sup>) and Malaysia (27<sup>th</sup>) for the year 2013. Even though Malaysia is a developing country compared to Singapore and Australia as developing countries, Malaysia has always encompassed globalisation that has made it becomes the 3<sup>rd</sup> highest ranking in globalisation index in the Asia Pacific region. Furthermore, (Law, Azman-Saini, & Tan, 2014; Mishkin, 2007) highlight that globalisation is a basis of financial development because it is among the most influential weapons that can uplift the institutions quality which create sound and strong financial regulations. This means that globalisation is essential in enhancing financial development and economic growth. In view of the high ranking of globalisation scores in Australia and Malaysia, it is reasonable to believe that globalisation from the dimensions of economic, social and political impose some impacts in their insurance sector's performance.

### **1.2.5 Background on the Relationship between Efficiency, Productivity and Competitiveness**

In developing a deep and dynamic insurance industry, it is necessary to promote the efficiency and productivity of insurers to ensure the market is remained as competitive to encourage the greater use insurance products by the consumer. Thus, the investigation on the effect of efficiency or productivity on competitiveness of insurers whether the efficient and productive insurers are able to gain higher market share. On the effect of competitiveness to efficiency or productivity, it is important to find out whether the

competitive environment in the insurance industry will lead to inefficient and unproductive among of the insurers.

### **1.3 Statement of the Problems**

The problem faced by the insurance industry in Malaysia is the underperformance of insurers that unable to match the rising demand of population in Malaysia that cause an under-insured environment, that is the insurance penetration is still low (3% in Malaysia as compared to OECD at 5%). With the fact of insurance executes vital role to facilitate transactions in the economy with the efficient allocation of scarce resources, the issues linked with underperformance in insurance sector are particularly essential to be addressed in developing economies, which applies to Malaysia to strive for high income economies achievement. On the other hand, insurance market in Australia is very competitive that has placed pressure on insurers' margins. Although there are no failures in the Australian insurance industry from year 2011 to year 2015, there is lack of measurement in the performance in terms of efficiency, productivity and competitiveness. As the first step, measuring the performance in terms of efficiency, productivity and competitiveness in insurance industry and the factors that affect the performance of insurers are needed to address and solve this problem.

Furthermore, Malaysia consists a large Muslim population that have high demand on Takaful insurance product. This provides a unique setting of insurance industry in Malaysia as compared to Australia. Thus, it is interesting to compare the difference between conventional insurers and Takaful insurers. Undoubtedly that there are some studies examine the performance of insurance sector in the Asia Pacific countries, but those studies investigate the issue in a single country. To our best knowledge, the investigation on the efficiency and productivity and competitiveness of the insurance sectors in a cross country setting with the additional comparison in between conventional insurers and Takaful insurers are scant in the literature.

The factors that influence the performance of insurers that commonly studied by the literature are focusing on the firm-specific factors. Macroeconomic factors are the complete economic cycle but uncontrollable issues by the insurers deserved some investigation. Furthermore, globalisation has been attracting more recognition as a driver of improving growth aspects. Dreher (2006) and Lee and Lin (2016) explain that globalisation implies countries are becoming more integrated into the international economy, by increasing people's interactions, information exchanges, technology transformations, and convergence in cultural activities. Dreher (2006) and Law, Azman-Saini Tan (2014) note that development toward globalisation provides an effective stimulus to deliver greater financial development to enhance economic growth. However, Law et al. (2014) only consider single dimension of economic globalisation that interects with banking development to affect economic growth. Three comprehensive main aspects of globalisation (economic, political and social) are missing in their study. Therefore, the influences of the firm-specific, macroeconomics and globalisations factors on the performance of insurers are interesting and significantly important to be examined to improve the performance of insurance industry.

On the impacts of competitiveness on efficiency or productivity, Hicks (1935) has highlighted an important issue where the absence of competition results in reduced managerial effort leading to inefficiency or unproductive. On the other hand, Akerlof (1970) argues that competition has the tendency to worsen the information asymmetry in insurance industry and can result in market failures. On the influences of efficiency or productivity on competitiveness, Demsetz (2008) explains that efficient or productive firm is probable to gain market share for the reason that they are able to charge lower price without minimising profitability, as a consequence, the market becomes more competitive. Empirical evidences on the relationship between efficiency, productivity and competitive seem scanty in insurance markets despite it has received substantial attention from researchers in banking literature. Therefore, the relationship between efficiency, productivity and competitive in the insurance industry is deserved an investigation.

#### **1.4 Objectives of the Study**

The general objective of this study is to examine the efficiency, productivity and competitiveness of insurers in Malaysia and Australia. The specific objectives are as follow:

1. To analyse the performance of insurers namely efficiency, productivity and competitiveness.  
Sub-objective 1.1: To analyses the sources of efficiency that are attributed to pure technical efficiency (managerial efficiency) and scale efficiency (operating at appropriate size).  
Sub-objective 1.1.1: To assess the difference of efficiency in between life insurers and non-life insurer.  
Sub-objective 1.1.2: To assess the difference of efficiency in between conventional insurers and Takaful insurers.  
  
Sub-objective 1.2: To analyse the sources of productivity that are attributed to efficiency change (firms catch up with the frontier) and technological change (technological change that leads to frontier shift).  
Sub-objective 1.2.1: To assess the difference of productivity in between life insurers and non-life insurer.  
Sub-objective 1.2.2: To assess the difference of productivity in between conventional insurers and Takaful insurers.  
  
Sub-objective 1.3: To investigate the competitiveness structure in the insurance industry.
2. To identify the factors that affect efficiency, productivity and competitiveness (performance) from the perspectives of firm-specific, macroeconomics and globalisation factors in the insurance industry.
3. To evaluate the relationship between efficiency, productivity and competitiveness in the insurance industry.

- Sub-objective 3.1: To assess the two ways nexus between efficiency and competitiveness in the insurance industry.
- Sub-objective 3.2: To assess the two ways nexus between productivity and competitiveness in the insurance industry.

The above objectives are aimed to provide significant outcomes and they are to be discussed in the significance of study section.

### **1.5 Significance of the Study**

The investigation of efficiency has crucial implication for the insurance institutions. This research is focused with an intensity measurement of the efficiency, productivity and competitiveness in the insurance sector in Malaysia and Australia. Biener and Eling (2011) point out that management goal could not be realised without a transparent performance assessment. Hence, the factors of input and outputs could be identified to gauge the efficiency of insurance companies in Malaysia and Australia to recognise whether they are under-performed or over-performed comparing to each other. A such, to improve the efficiency of the insurance firms, the insurance managements are required to take corrective actions in order to enhance reduction in the production costs, advancement in the profitability, greater service in the fund transferring as the financial intermediaries to establish a well-developed insurance sector.

In this research, the non-parametric frontier efficiency technique is employed to gauge the efficiency for life, non-life, conventional and Takaful insurance companies in Malaysia and efficiency for life and non-life in Australia. It provides a quantifiable measure of efficiency and position of the firm compared to the peers which leads to the greater analysis of the performance on the firm in achieving the firm's objectives (Brockett, Cooper, Golden, Rousseau, & Wang, 2005). Therefore, investigation on firm-specific factors by performance analysis provides ideas to management of the firm to identify the performance of existing practices to improve the performance.

In short, the findings of these analyses on efficiency, productivity and competitiveness in the insurance sector in Malaysia and Australia would be valuable to the new and matured insurance market players in the both countries who are of interest to market competitors, both foreign and domestic. As they search for better knowledge on the relationships between profitability and market structure. This research is of particular vital to national policy makers and regulators who seek as enhanced information of the implications of the changes in regulatory policy.

To produce significance of the research as mentioned earlier, there are a few differentiations contrast to the existing studies relating to the efficiency in insurance. First and foremost, dissimilar from previous efficiency studies which are focusing in U.S region or European region or in a single country setting, this study is investigated in a multi-setting countries in the Asia Pacific region, namely in Malaysia and Australia. This study provides the investigation on the efficiency and productivity and competitiveness

of the insurance sectors in a cross country setting namely Malaysia and Australia with the additional comparison in between conventional insurers and Takaful insurers in Malaysia. Enhancement from the contribution by Yaisawarnng, Asavadachanukorn and Yaisawarnng (2014), who focus in one of the Asian geographical area which is in Thailand, as well as to the study by Abu Mansor and Radam (2000), who focus only on the productivity and efficiency in Malaysia's life insurance, it is believed that this paper provides a greater information relates to efficiency, productivity and competitiveness in the insurance companies in Malaysia and Australia.

Second, this paper also analyse the firm-specific factors, macroeconomics factors and globalisation factors that influence the performance of insurers. To the best of our knowledge, virtually nothing has been published to address the influences of globalisation in the insurance sector's performance in terms of efficiency, productivity and competitiveness. Furthermore, since the macroeconomic and globalisation issues that are examined in this study are a global phenomenon, it would be remarkable to investigate how insurers in different countries solve the progressively challenging business environment.

Lastly, from the point of view of consumers whose interest is to enjoy insurance services with reasonable price and quality, regulators whose responsibility is to safeguard the interests of consumers and insurers whose objective is to achieve shareholders' wealth maximisation, the results on the relationship between efficiency, productivity and competitiveness are important to them.

## **1.6 Organisation of the Thesis**

This thesis encompasses five chapters which are organised as follows. Chapter 1 describes an introduction of the research. It discusses the background of the insurance sector in Malaysia and Australia. Next, it is followed by the problems of the research and the objectives for research on efficiency, productivity and competitiveness in insurance sector to be discussed, and lastly the significance of the study.

Chapter 2 reviews the relevant theoretical and empirical literature review, concepts, methodology and issues related to efficiency and measures applicable to the insurance sector's efficiency. The firm-specific factors that are related with the insurance sector, macroeconomic environments and globalisation perspectives that influence the performance of insurers are examined.

Chapter 3 illustrates the methods which are executed to investigate the insurance sector's efficiency, productivity and competitiveness in Malaysia and Australia. The sources of the data and variables employed in the study of insurance are also to be described. This study also explain the firm-specific factors, macroeconomic factors and globalisation factors that influence the performance of insurance companies. Then, it is followed by the methods to examine the relationship between efficiency, productivity and competitiveness.



Chapter 4 analyses the empirical results and the analysis of the thesis. This chapter provides discussions on the sources of efficiency, sources of productivity, competitiveness structure of insurers, factors that influences the performance of insurers and the relationship between efficiency, productivity and competitiveness of insurers in Malaysia and Australia. From the efficiency and productivity analyses, this study also explores the differences in between conventional and Takaful insurers (Malaysia) and the differences in between life and non-life insurers (Malaysia and Australia).

Chapter 5 summarises the study and suggests some key results. The results are to be discussed to provide managerial and policy implications. It also highlights the limitation of the study and recommendations for the future research.

## **1.7 Chapter Summary**

This chapter begins with the background of the study including the insurance industry in Malaysia, insurance industry in Australia, performance of the insurance industry, factors that influence the performance of insurance and relationship between efficiency, productivity and competitiveness. It highlights that the underperformance of insurers in Malaysia causes an under-insured environment. It also mentions that there is lack of performance measurement in the Australian insurance industry despite the insurance market is highly capitalised. Hence, it leads to the investigations of three objectives namely (i) to analyse the performance of insurers in terms of efficiency, productivity and competitiveness, (ii) to identify the factors that performance from the perspectives of firm-specific, macroeconomics and globalisation factors in the insurance industry, and (iii) to evaluate the relationship between efficiency, productivity and competitiveness in the insurance industry. This chapter provides policy implications for the managers and regulators of insurance industry.

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