

**THE EFFECTS OF STRUCTURED WARRANTS  
ON FIRM PERFORMANCE IN MALAYSIA: THE  
ROLE OF INSTITUTIONAL OWNERSHIP**

by

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**Thesis submitted in fulfillment of the requirements  
for the degree of  
Doctor of Philosophy**

**July 2017**

## **ACKNOWLEDGEMENT**

First and foremost, praises and thanks to God, the Almighty, for His showers and blessings throughout my Ph.D journey and granting me the capability to complete the research successfully.

I would like to extend my gratitude to Associate Professor Dr. Hooy Chee Wooi, from School of Management, University Sains Malaysia, for his invaluable advice, comments and assistance throughout all phases of this research project development and production. I could not have imagined having a better advisor and mentor for my Ph.D study.

My sincere appreciation goes to my parents, Yip Tin Tuck and Soo Lian Chern , my siblings, Yen Nee, Yen San and Yen Lan , my brothers-in-law, Kam Hwang, Tun Pin and Chee Keong, my nieces and nephew, Grace, Sean, Qian Yu and Tze Ching for providing me the unfailing support and inspiration throughout my years of study. This accomplishment would not have been possible without them.

I would like to express my special thanks to my best friends and co-workers, Huay Huay and Ying San as well as fellow students from School of Management at Universiti Sains Malaysia, Wilson, Wai Yan and Shu Fen for their friendship and assistance.

Lastly, special thanks are due to the members of Institute of Postgraduate Studies and School of Management at Universiti Sains Malaysia for their great help and cooperation in ensuring the success of this research project.

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**KESAN WARAN BERSTRUKTUR TERHADAP PRESTASI FIRMA DI  
MALAYSIA: PERANAN PEMILIKAN INSTITUSI**

**ABSTRAK**

Penyelidikan ini bertujuan untuk meneroka sama ada kewujudan waran berstruktur menghasil apa-apa nilai kepada firma dalam jangka pendek and jangka panjang berdasarkan pasaran waran berstruktur di Malaysia . Tempoh masa kajian ini meliputi tahun 2006 hingga tahun 2014. Untuk mengkaji kesan jangka pendek waran berstruktur, kajian ini menganalisa sama ada penyenaiaan waran berstruktur akan menghasilkan apa-apa impak ke atas saham pendasar melalui metodologi kajian peristiwa dan pemboleh ubah dummy. Hasil kajian ini mendedahkan bahawa pulangan saham pendasar telah meningkat sekitar hari penyenaiaan waran berstruktur, tetapi tiada pulangan luar biasa yang dapat dikesan. Di samping itu, jumlah dagangan saham pendasar juga telah meningkat dengan ketara selepas penyenaiaan waran berstruktur. Sementara itu, turun-naik harga kepada saham pendasar telah dikurangkan dengan ketara selepas hari penyenaiaan waran berstruktur. Hasil analisa juga menunjukkan bahawa jurang bida-tawar telah menjadi lebih kecil selepas penyenaiaan waran berstruktur walaupun kesannya tidak ketara. Secara keseluruhannya, kualiti pasaran saham asas telah bertambah baik dalam jangka pendek selepas pengenalan waran berstruktur. Untuk mengkaji kesan jangka panjang waran berstruktur, kajian ini menganalisa sama ada kewujudan waran berstruktur dapat dikaitkan dengan peningkatan prestasi firma dengan menggunakan stok pulangan sebagai petunjuk prestasi. Buat pertama kalinya, pemilikan institusi dianggap sebagai satu faktor yang dapat mengeratkan hubungan antara prestasi firma dan waran berstruktur. Selain itu, dalam kajian ini, pemilikan institusi dibahagikan

kepada pemilikan asing dan pemilikan domestik supaya dapat menentukan sama ada identiti pemilik institusi adalah penting untuk mengeratkan hubungan antara prestasi firma dan waran berstruktur. Dengan menggunakan model pemilihan Heckman, keputusan yang diperolehi menunjukkan bahawa kewujudan waran berstruktur dapat dikaitkan dengan prestasi firma secara positif dan ketara. Di samping itu, hasil kajian juga menunjukkan bahawa kewujudan pemilikan institusi domestik mempunyai impak yang positif terhadap hubungan antara prestasi firma dan waran berstruktur. Walau bagaimanapun, tiada kesan yang dapat ditemui pada pemilikan institusi asing. Ini menunjukkan bahawa kewujudan waran berstruktur boleh meningkatkan nilai terhadap firma dalam jangka masa panjang dan identiti pelabur institusi adalah faktor penting yang dapat mempengaruhi hubungan di antara prestasi syarikat dan waran berstruktur. Kesimpulannya, keputusan kajian ini menunjukkan bahawa kewujudan waran berstruktur adalah dikaitkan dengan penghasilan nilai firma dalam jangka pendek dan jangka panjang di Malaysia.

**THE EFFECTS OF STRUCTURED WARRANTS ON FIRM  
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**ABSTRACT**

This research is motivated to explore whether the existence of structured warrants creates any value to its underlying firms in both short-run and long-run based on the Malaysian structured warrants market. The time frame of this study covers year 2006 until 2014. In order to gauge the short-run impact, the analysis concerning the impact of structured warrants listing on the behaviour of its underlying stocks is performed based on the event study and dummy variable methodology. The findings reveal that the return of the underlying stocks has increased significantly surrounding the event of structured warrants listing, however, no abnormal return is being detected. Meanwhile the results also show the trading volume of the underlying stocks has experienced an upsurge while the spot price volatility is found to have significantly lower in the post-event period. Also, the gap of bid-ask spread has become relatively smaller subsequent to structured warrants initiation even though the impact is less significant. Overall, the market quality of the underlying stocks has improved in short-run due to the availability of structured warrants. In order to gauge the impact in long-run, this research examines whether the existence of structured warrants is associated with firm performance by using stock return as the performance indicator. For the first time, the institutional ownership is being considered as the factor which is able to enhance the relationship between structured warrants and firm performance. Also, in this research, institutional ownership is further segregated into foreign and domestic category with

the objective to determine whether the identity of institutional owners matters in improving connection between structured warrants and firm performance. By employing Heckman selection model, the results obtained indicate that the availability of structured warrants is positively and significantly associated with firm performance. Further, the findings also reveal that the existence of domestic institutional ownership has significant positive impact on the connection between structured warrants and firm performance, while no impact is being found on foreign institutional ownership. Taken together, the evidence produced through long-run analysis imply that the presence of structured warrants is able to generate firm performance in long-run and the identity of institutional investors matters in influencing the nexus between structured warrants and firm performance. Based on the evidence tabled, this research therefore concludes that the presence of structured warrants is associated with firm performance generation in both short-run and long-run in Malaysia.

# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Background of Study**

As the economy progress over time, the need to have an efficient capital market has becoming more urgent than ever if scarce capital resources are to be utilized efficiently. In recent decades, the results from a number of academic research show that financial derivatives are effective in increasing the efficiency of the capital market.

A financial derivative, as indicated by its name, ‘derives’ its value from its underlying asset. The existence of financial derivatives has provided market participants an alternative to lock-in asset prices and at the same time alleviating the investment risk. It is indeed one of the most amazing innovations in the arena of financial engineering in this twentieth century.

The exchange-traded financial derivatives are originated from the United States. The Chicago Board of Trade, which established in 1848, was the first formalized futures exchange in the United States. Listed stock options began its trading in April 1973 on the Chicago Board Options Exchange (CBOE). Compared to financial assets such as stocks and bonds which have been exchange-traded for more than a century, financial derivatives are still new. For example, interest rate futures, which is the world’s oldest exchange traded financial derivative, began trading on the floor of the Chicago Board of Trade in 1975, is hardly 50 years old.

Most of the more exotic forms of derivatives are instruments that did not even exist a decade ago. Today, there is a broad spectrum of derivative instruments, many with very exotic names and highly specialized purposes. The commonly available derivative instruments include futures contracts, forward contracts, equity options, swaps and warrants.

Market players can use derivatives to hedge, to arbitrage, or to speculate. Hedging risk with derivatives is akin of buying an insurance against the undesired future outcome. Hedging is the process of shifting the risk from hedgers, who are reluctant to bear the risk, to parties who are more willing to bear them. Through this, derivatives assist in risk allocation between different individuals and groups in the economy.

Arbitraging is a way of making profits from price differentials between markets. Arbitrageurs will monitor the quoted prices of the same assets/instruments in different markets and started to cash in the profits should they detect the opportunity to buy from the market with lower price and sell in the market where the quoted price is higher. By doing so, the low price will be driven up and the high price will be driven down. The process will continue until an equilibrium is achieved. This could help market prices back into alignment and thus assist in keeping prices consistent across markets.

Investors can also use derivatives to speculate. Speculators are traders who accept risk in which hedgers do not want. Speculators accept the risk because they believe the potential return outweigh the risk. They are betting on the price of the

underlying asset will move in tandem with their expectations over the life of the contract. The existence of speculators is crucial in providing the liquidity in the financial market. This liquidity enables other investors, who may be using derivatives to hedge risk, to buy and sell derivative contracts more easily.

Derivative is a contract entered by two parties. Some relates derivative as the zero-sum monetary games since the amount paid by one party of the contract is the amount received by the other party. When the contract expires or is exercised, the gains and losses completely offset each other. Even though derivatives represent zero-sum monetary games, they need not represent zero-sum economic games.

Researchers such as Ross (1976) and Detemple & Selden (1991) claim that the presence of options completes the market by expanding the investment opportunities of investors by helping them to achieve their desired payoffs. The increased investment states provided by options will further stimulate the demand of the underlying stocks, reduce its rate of return and lead to increased spot price.

In addition to market completion, the existence of options is expected to improve the information environment of its underlying equity market. Researchers such as Black (1975), Watt, Yadav & Draper (1992), Kumar, Sarin & Shastri (1998) and Faff & Hiller (2005) claim that the benefits of options such as better leveraged gain, lower transaction cost and truncated downside risk may entice informed traders who are initially active in the spot market to migrate to the options market. The exodus of informed traders to the options market will lower the level of trading noise in the spot market, reduce the adverse selection risk faced by the uninformed

investors in the spot market, attract the existing and new market entrants to trade in the underlying stocks and subsequently improve its liquidity (Kumar, Sarin & Shastri, 1998; Faff & Hiller, 2005). Moreover, past studies also indicate that information releases by media and financial experts on optioned firms tend to renew the information set of investors concerning the intrinsic value of the firms. As such, the participation rate of the investors in the underlying asset market will grow due to lower trading risk and subsequently improve the liquidity of the underlying stocks (Skinner, 1990; Watt, Yadav & Draper, 1992).

Findings from Manaster & Rendlemen (1982), Bhattacharya (1987) and Anthony (1988), Easley, O'Hara & Srinivas (1998), Chakravarty, Gulen & Mayhew (2004) and Pan & Poteshman (2006) show that options is a preferred trading ground for informed investors. The private information which initially possessed by the informed traders will first be reflected in options price or its trading volume and subsequently embodied into the spot price. In short, options trading enables information transmission, improves stock price efficiency and stabilizes spot price.

Roll, Schwartz & Subramanyam (2009) posit that incremental information revealed in stock price through the informed trading in options market may enable an optioned firm to allocate its resources more efficiently and eventually improves firm performance. They find a significant positive relationship between the optioned firms' trading volume and their Tobin's Q. The linkage between informational efficiency and firm performance has been discussed by researchers such as Durnev, Morck & Yeung (2004); Giammarino, Heinkel, Hollifield & Li (2004); Markovitch, Skeckel & Yeung (2005) and Chen, Goldstein & Wang (2007). These authors point out that

informative stock price is able to guide managers in making better corporate investment decisions which will later convert to better firm performance.

Some may wonder if it is sensible to expect managers extracting information from stock price since they should be more informed about their own firms than the outside market traders. The conventional wisdom that insiders possess superior information precludes any possibility of learning from stock price. Thus, the stock market simply becomes a ‘sideshow’. To act in the best interest of the long-term shareholders, managers can make investment decisions based on their own views on growth opportunities and ignore stock price fluctuations (Morck, Shleifer & Vishny, 1990).

However, recent strand of research suggest that stock market does not necessarily acting as a ‘sideshow’. Instead, stock market works as an information aggregator from outside investors, and thus the insiders or managers can improve their resource allocation abilities by learning from stock price (Chen, Goldstein & Jiang, 2007). According to Bond, Edmans & Goldstein (2012), learning from outsiders does not imply that managers are less informed, just that this move will enable managers to accumulate and arrange information in a more meaningful manner and eventually increase the effectiveness of their decisions. The authors further claim that managers may be the most informed party about their firms in the economy, but there are still aspects about which they can learn from outsiders.

Subrahmanyam & Titman (1999) stress on the role of information serendipity – that is the extent in which stock market investors may, by chance, deduce value-

relevant information through their daily activities. For instance, a store manager may obtain valuable information about the market acceptance of his firm's products in the course of managing the firm's daily operations. Moreover, a financial analyst who evaluates the performance of one firm may find out relevant information about another firm. At first glance, one might expect that the contribution of serendipitous information in terms of resource allocation should be minimal because there is always a higher chance for individuals to receive inaccurate information rather than serendipitous information. However, with a substantial pool of stock market participants, the cumulative impact of serendipitous information on price efficiency can be enormous even though the population that possesses such information is insignificant. Hence, optimal real decisions should be dependent on the interaction of internal information (information set possessed by manager), as well as the external information (e.g. the state of the economy, the position of competitors, the demand by consumers, etc). Stock price serves as an intermediary in guiding and facilitating the efficient allocation of resources, especially when outside investors have an information advantage over insiders. On the whole, stock price efficiency improves managers' learning (Durnev, Morck & Yeung, 2004; Giammarino, Heinkel, Hollifield & Li, 2004; Markovitch, Skeckel & Yeung, 2005; Chen, Goldstein & Wang, 2007). In aggregate, evidence generated by past studies collectively indicates that the existence of options is associated with firm performance. To date, the studies concerning the relationship between derivatives and its underlying firms are mainly derived from the more developed U.S. options market. Still, whether other derivative products also playing a similar role in the emerging market remains largely unknown due to the differences in social systems, economic microstructures,

stages of economic development and financial market structures between the emerging market and its developed counterpart.

Options and warrants are identical derivative instruments. Similar to options, warrants give the holder the right to purchase and sell the underlying asset at an exercise price during a certain period. Options/warrants are appealing because they allow investors to participate in the future performance of the underlying asset at a fraction of its cost, in both bullish and bearish market. Some differences between options and warrants include: 1) warrants are mostly issued by third party issuer such as the investment banks or stock brokers and traded on stock exchange, while options are usually issued and traded on derivative exchange; 2) the lifespan of warrants are usually last longer than options, generally ranging from 3 months to 15 years while the life span of options normally ranging from 9 months to 1 year. It would be interesting to find out whether warrants possess a function in influencing firm value as options based on the emerging market.

To the author's best knowledge, the association between structured warrants and firm performance remains an untapped area of research in Malaysia. As such, the mission of this study is to fill in the research gap by investigating the role of structured warrants in firm performance based on Malaysian environment.

This research seeks to provide new knowledge by further postulating that the function of structured warrants in generating firm performance will be strengthened in the presence of institutional ownership. Malaysian firms are normally subject to type II agency problem or what is commonly known as the conflict of interest

between controlling shareholders and outside minority shareholders (Claessens & Fan 2002) . The type II agency problem tends to increase the level of information opaqueness due to information hoarding by the controlling owner-managers (Fan & Wong, 2002). Therefore, it is reasonable to expect that the information searching cost of the skilled or sophisticated investors will become more expensive and simultaneously reduce their incentive to trade in structured warrants. Following this, the function of structured warrants in improving spot price efficiency will be weakened and subsequently affects its contribution in firm performance. The relationship between structured warrants and firm performance might not be prevalent if firm is haunted by type II agency problem. Also, type II agency problem may hamper the managers' motivation to extract additional information from stock price. If the entrenched managers have the incentive to misappropriate firms' resources for their own private benefit, they are very likely to ignore market signals or there is no information for them to refer to due to information opaqueness. Again, under this setting, the connection between structured warrants and firm performance might not be obvious. Taken together, it is reasonable to aspect that the role of structured warrants in influencing firm performance should also depend on a firm's ability to manage its agency problem.

Recently, a considerable number of studies show that institutional ownership is able to tackle the agency problem within firms. Factors such as substantial amount of investment, expensive exit cost, expertise in financial and management know-how have made the institutional investors an ideal candidate in performing corporate monitoring activities (Velury & Jenkins, 2006; Hashim & Devi, 2012; Bajo, Bigelli & Hiller, 2013; Ahmad & Jusoh, 2014). A better governed firm under the oversight

the institutional owners is able to attract market investors to perform information search and at the same time increase their incentive to use structured warrants to profit from their information set. Under this scenario, the incremental information possessed by them will be impounded into spot price and subsequently promote spot price efficiency when they start to transact in warrants market. More efficient spot price will enable firms to allocate their resources more efficiently and eventually lead to better firm performance. Based on the rationale discussed, this research therefore postulates that the nexus between structured warrants and firm performance will be enhanced in the presence of institutional ownership.

Past studies also show that not all institutional investors are equally effective in corporate monitoring. The proponents of foreign monitoring mechanism claim that the characteristics such as lesser business ties with the corporate insiders, as well as the knowledge and experience in implementing good governance practices in good governance countries, have equipped the foreign institutional investors the capability to take an active stance against the errant corporate insiders (Ferreira & Matos, 2008; Aggarwal, Erel, Ferreira & Matos, 2011; Garner & Kim, 2013; Chen, El Ghouli, Guedhami & Wang, 2014). On the other hand, the proponents of domestic monitoring mechanism opine that the problem of geographic distance may weaken the monitoring incentive of foreign investors because they may need to bear additional monitoring cost in the midst of performing their monitoring duties (e.g: information acquisition cost, travelling cost, international administrative cost etc.) .

The geography proximity is expected to provide the domestic institutional investors a better edge in performing arm's length monitoring function. It is because

the local investors normally located in the same geographical region as their investee firms, hence are able to collect and process information concerning the internal matters of their investments at a relatively lower monitoring cost. They are also capable to approach the management to demand for policies changes in a timely manner should they feel uncomfortable over certain corporate issues. (Gasper & Massa, 2007; Kang & Kim, 2008; Chhaochharia, Kumar & Niessen-Ruenzi, 2012 ).

Based on the insights tabled above, it is possible that the linkage between structured warrants and firm performance is also influenced by the identity of the institutional owners. In this research, the institutional ownership is further segregated into foreign and domestic category in order to determine the validity of this intuition.

## **1.2 Overview of Malaysian Warrants Market**

Warrants are financial derivatives which 'derive' its value from other assets. The underlying asset may be any asset including a single stock, a basket of stocks, an index, a currency, a commodity or future contracts. Warrants give the buyer the right, but not the obligations, to buy or sell an underlying asset at a pre-determined price (commonly referred to as the strike price or exercise price) on or before a specified date (commonly referred to as the expiry date or maturity date). The investor pays a price (a premium) for owning warrants. If at expiry, the price of the underlying asset is higher than the exercise price, the investor will exercise the warrants. The difference between the market price of the underlying asset and the exercise price is the gross profit on the warrants investment. Net profit is arrived after deducting the price paid for the warrants from the gross profit. However, if the price of the

underlying asset is below the exercise price, the warrants will expire worthless. The loss is limited to the price (premium) paid.

Currently, the types of warrants which are currently available in Bursa Malaysia include the structured warrants and the company-issued warrants. Structured warrants are further divided into three categories : the call warrants, the put warrants and the callable bull/bear certificates (CBBC). A call warrant gives a holder the right to buy the underlying share at a specified price within a limited period of time . Currently, the majority of the structured warrants being traded on Bursa Malaysia are the call warrants.

A put warrant, on the other hand, gives a holder the right to sell the underlying share at a specified price within a limited period of time. Previously, all structured warrants listed on Bursa Malaysia are on the 'buy side'. Effective from 3 August 2009, the revised regulatory framework of the Main Market allows the issuance and listing of put warrant.

A CBBC is financial instrument that track the performance of an underlying instrument without requiring investors to pay the full price of the underlying instrument. The CBBC is first issued by CIMB Bank on Bursa Malaysia in July 2010. The number of put warrants and CBBCs being traded on Bursa Malaysia during the period of study are limited. Hence, this research will therefore concentrate on the impact brought in by call warrants only.

Structured warrants are issued by a third party. At present, the structured warrants issuers in Malaysia comprise both the international and local financial institutions. The prominent issuers of structured warrants include CIMB Bank Bhd., AmBank Bhd., RHB Investment Bank Bhd., Kenanga Investment Bank Bhd., Maybank Investment Bank Bhd. and Macquarie Capital Securities (M) Sdn. Bhd. The first structured call warrants in Malaysia were issued by Commerce International Merchant Bankers on Maybank shares in June 1995.

Based on the Bursa Malaysia's Main Market Listing Requirements, the issuer must ensure that over the past three months before the issuance date of structured warrants, the underlying securities must achieve an average daily market capitalization of at least RM1 billion, or RM3 billion for the newly listed corporations that do not meet the three months market capitalization track record. Furthermore, the aggregate outstanding structured warrants issued at any one time, inclusive of those that have already been issued, must not more than 20% of the share capital of the underlying securities.

The issuer must ensure that, upon the initial listing, the structured warrants must be held by at least 100 warrant holders whereby each one of them must hold not less than 1 board lot of warrants. Alternatively, the structured warrants must be held by at least 50 warrant holders, whereby each one of them must hold not less than 1 board lot of warrants, provided that each of these warrant holders subscribe for a minimum of RM100,000 of warrants. Currently, the trading of structured warrants must be in a board lot comprising 100 units. The minimum issue price of structured warrants must be at least RM0.15 per warrant.

After issuing the structured warrants, the issuer is expected to ‘create a market’ for the warrants by providing the bid price and ask price. Structured warrants issuer needs to specify the settlement mode in the terms and conditions of the structured warrants issue. The settlement of structured warrants can be either by cash or by physical delivery of the underlying shares. Cash settlement means that the investors do not need to come up with cash to exercise the warrants. In most cases, the issuers will pay the warrants holders the difference between the share price and exercise price adjusted by the exercise ratio. On the other hand, physical delivery means that the issuer will have to supply the shares to the warrant holder who exercises his call warrants. However, this does not result in new shares being issued when it is being exercised.

In Malaysia, structured warrants are usually cash-settled and have a life span ranging from 6 months to 5 years. The structured warrants issuer need to determine the settlement price. The settlement price of the structured warrants can be based on the average closing price of the underlying security for the 5 market days prior to the expiry date or the closing price of the underlying security on the market day immediately before the expiry date.

The term ‘warrants’ is originated from the United States and is first issued by the American Lights and Energy Company in 1911 (Zhang, 2008). Malaysia seems to be the only country that adopts the term ‘structured warrants’. In the U.K., they are commonly known as ‘covered warrants’ or ‘derivative warrants’ in Hong Kong and Taiwan.

The company – issued warrants are issued by companies. Companies usually issue warrants in conjunction with a fund-raising activity. This type of warrants usually act as a sweetener in association with a bond or equity issue and normally have an exercise period of up to 10 years. The company-issued warrants will result in new share being issued when it is being exercised and thus has a dilution impact on a company's earnings per share.

Our market allows warrants either in American-type or European-type. The American-type warrants can be exercised at any time during the life of the warrants whereas European-type warrants can be exercised only upon expiry. As such, the American-type warrants are preferred (due to its flexibility in exercise period) over the European-type, all things equal.

In Malaysia, structured warrants are traded on the same platform as their underlying shares. Investors can trade warrants via the same individual's share trading account, and hence lower the transaction cost. The synchronous trading of warrants and their underlying shares has increased the possibility of information linkage between the two assets.

Table 1.1 shows the annual turnover value on the world's most active warrants markets from year 2006 to 2015. The information from Malaysian market has been included as comparison. These figures are extracted and compiled from the annual market statistics published by the World Federation of Exchanges.

Although warrants market are relatively new as compared to options market, nonetheless, the warrants market has recently achieved an exponential growth, especially in the Asia-Pacific and Europe region. As indicated in table 1.1, in Asia, as at 2015, warrants are most actively traded in Hong Kong (with annual turnover of USD 818,015.9 million in 2015) , Taiwan (with annual turnover of USD 20,376.7 million in 2015), and Korea ( with annual turnover of USD18,478.1 million in 2015) . While in Europe, warrants are most actively traded in Germany (with annual turnover of USD 50,127.2 million in 2015) and Switzerland (with annual turnover of USD 28,006.5 million in 2015). In contrast, the structured warrants market in Malaysia is relatively smaller (with trading value of USD 3,590.9 million in 2015).

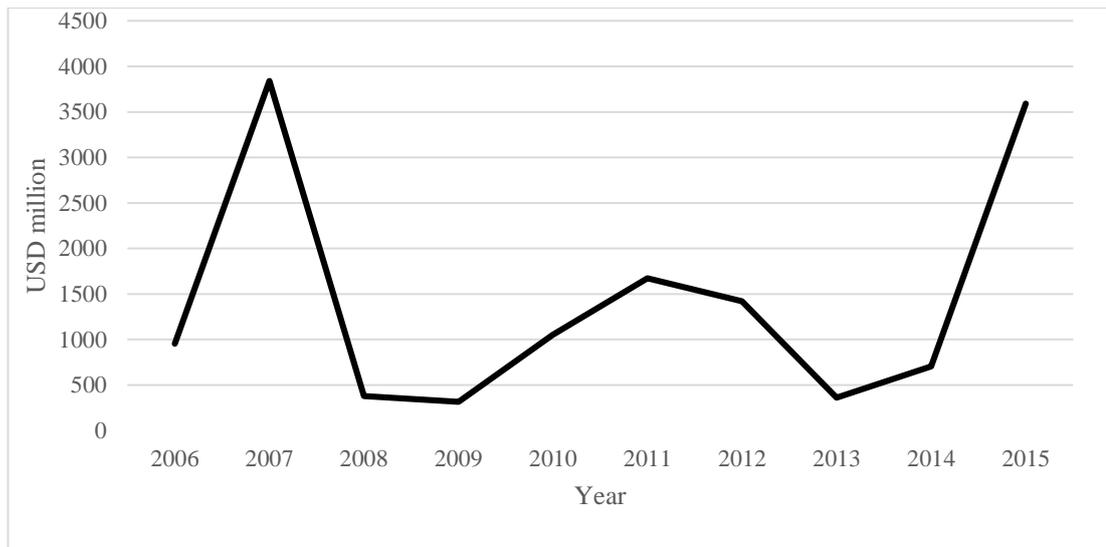
In Malaysia, the trading value of structured warrants had once reached its peak in year 2007 (with the trading value of USD 3,838.7 million). However, the value transacted had plummeted to USD 315.8 million, represents an alarming 92% drop in year 2009. The global stocks plunge caused by U.S subprime crisis which has been taken place in year 2008 could be the main contributor of this phenomenon. The Hong Kong and Korean market, on the other hand is quite sustainable. It is not seeing a drastic decline in its trading value as compared to Malaysia. After hitting its low in year 2009, the trading value of warrants market started to pick up steadily. The value transacted amounted to USD1,673.50 million in year 2011, an improvement of approximately 400% since year 2009. However, in year 2013, the trading value again experienced a drastic drop to USD361.60 million. The drastic drop in trading value could be due to the poor market sentiment in Malaysia, triggered by factors such as the increase in fuel price, higher transportation cost, subsidy rationalisation and electricity tariff hike in year 2013. Nevertheless, the

trading value started to rebound in year 2014. The trading value of structured warrants shows an improvement of 123% or USD704.30 million in year 2014. In year 2015, the trading value of structured warrants has achieved a buoyant growth of approximately 400% or USD 3,590.90 million as compared to year 2014.

Table 1.1: Annual turnover value of structured warrants based on selected markets (in USD Million)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Hong Kong Exchanges and Clearing	230,359.4	611,507.3	574,495.0	429,726.9	533,929.6	576,035.6	409,963.5	393,534.4	422,188.2	818,015.9
Korea Exchange	43,993.2	73,043.5	85,691.5	174,105.4	354,346.8	288,621.0	53,462.7	26,341.7	18,723.9	18,478.1
Taiwan Stock Exchange Corp.	5,387.0	7,743.8	8,857.2	3,241.9	6,606.8	9,719.2	4,727.8	11,436.0	22,340.0	20,376.7
Deutsche Boerse	285,895.7	439,678.8	165,306.1	87,885.3	79,651.1	96,562.1	65,377.9	71,445.6	51,180.5	50,127.2
Euronext	39,814.6	50,799.0	47,773.9	32,136.8	34,772.6	42,563.7	24,013.2	21,766.4	21,518.3	17,969.9
SIX Swiss Exchange	38,696.4	63,165.7	55,900.0	34,564.4	38,065.8	59,262.2	34,210.3	32,702.3	28,877.2	28,006.5
Bursa Malaysia	955.7	3,838.7	380.9	315.8	1,051.2	1,673.5	1,422.0	361.6	704.3	3,590.9

Source: World Federation of Exchanges



Source: World Federation of Exchanges

Figure 1.1: Annual turnover value of structured warrants based on Malaysian market (in USD Million)

Figure 1.1 is the graphical presentation of the annual turnover value of structured warrants based on Malaysian market from year 2006 to 2015. As can be seen from figure 1.1, the annual turnover value of Malaysian structured warrants has once reaching its peak in 2007 (USD 3,838.7 million in 2007), however hitting its low in 2009 (USD 315.8 million in 2009). Again, it experienced another plunge in 2013 (USD 361.60 million in 2013) but managed to rebound in 2014 (USD 704.30 million in 2014) and the positive trend continue until 2015 (USD 3,590.90 million in 2015).

### 1.3 Problem Statement

The traditional options pricing model, introduced by Black & Scholes (1973), show that in a complete market, the payoff of an option can be replicated through the combination of stock and riskless bond, and hence option has been regarded as a redundant security in this scenario . If options are redundant, the introduction of

options should produce no impact on its underlying stocks. However, both the theoretical and empirical research show that this is not the case.

The research on the impact of derivatives on its underlying asset market has attracted much attention ever since Ross (1976) proposes that equity options playing a role in completing the market by expanding the opportunity set of investors, allowing investors to achieve optimal payoff state than would be possible prior to options listing. The theoretical works based on Ross (1976) and Detemple & Selden (1991) claim that the wider range of investment states encourage new investors to enter the market with a commensurate increase in the demand of underlying stocks, as well as its price, and at the same time lower the spot price volatility.

Another strand of research claim that options trading may reduce the trading risk of its underlying asset by improving the information environment of its spot market and thus making the said asset more valuable. Benefits such as higher leverage gain, lower transaction cost and limited downside risk offered by options tend to attract informed traders who possess private information to trade in options market (Black,1975; Skinner,1990; Watt, Yadav & Draper, 1992; Kumar, Sarin & Shastri, 1998; Faff & Hiller, 2005). The migration of informed traders to options market reduces the level of asymmetric information in the spot market, lowers the chance of losses against the informed traders, and hence encourages the uninformed traders and the new market entrants to trade in the underlying stocks (Kumar, Sarin & Shastri, 1998; Faff & Hiller, 2005). As a result, options listing is expected to improve the quality of its underlying asset by improving its liquidity and at the same time reducing its spot price volatility (Kumar, Sarin & Shastri, 1998). Further,

findings also show that greater level of public information produced by media and financial experts on the optioned firms is able to provide awareness to market investors concerning the fundamental value of the underlying stocks, improve their willingness to trade in the spot market and subsequently lead to better liquidity (Skinner,1990; Watt, Yadav & Draper, 1992).

Some researchers opine that firm-specific private information which initially possessed by informed investors will first be revealed in options price or trading volume and subsequently impounded into spot price (Skinner,1990; Manaster & Rendlemen,1982; Easley, O'Hara & Srinivas, 1998; Chakravarty, Gulen & Mathew, 2004; Pan & Potestman, 2006). The flow of information from derivative to spot market will reduce the trading noise and stabilize the spot price as well as improve the liquidity of the underlying stocks (Grossman, 1988).

Even though research shows that the existence of options may lead to market completion, improve the information environment of its underlying asset market and hence making its underlying asset more valuable, however, the recent derivatives-induced losses suffered by Procter & Gamble in 1994 (US\$137 million), Barings PLC in 1995 (US\$1.3 billion), Orange County California in 1994 (US\$1.7 billion) and China Aviation Oil in 2004 (US\$50 million) have cast doubts on the relevancy of derivatives in real world. The world renowned investment guru, Warren Buffett (2003) was once making an attack on derivatives through his write-up in the 2002 annual report of Berkshire Hathaway that “derivatives are financial weapons of mass destruction, carrying dangers that, while now latent, are potentially lethal.” As such, this has instilled fear among some market participants that there is something

inherently risky about derivatives and that the prudent one would try to avoid. The rationale behind this argument is that since options is a low-cost leveraged product, additional trading noise generated by speculators in the options market tends destabilize the spot price (Ma & Rao,1986; Stein, 1987; Skinner,1989; Bollen,1998). Some market observers also opine that the existence of options may divert the trading volume from the spot to the options market and subsequently create price pressure towards its spot price (Bollen,1988; Skinner,1989).

Given these development, it would be interesting to find out whether the existence of derivative will bring in value or harm towards its underlying asset .To date, majority of the past studies related to derivative are normally based on options. According to past studies, if options lead to market completion or information improvement, the event of options listing should leave a favourable impact on its underlying securities. It is predicted that the abnormal return will be detected around the listing day, at the same time, the liquidity of the underlying securities tends to improve while the stock price volatility tends to reduce. On the other hand, if the existence of options invites speculative trading, effects such as negative and volatile spot price will be observed.

Other than market completion and information improvement in the spot market, researchers also find that the listing of options improves stock price efficiency. Findings show that the information about the future stock price movement will first be revealed in options price or trading volume and subsequently incorporated into stock price (Manaster & Rendleman , 1982; Bhattacharya ,1987; Anthony , 1988; Turkington & Walsh, 2000 ; Easley, O'Hara & Srinivas, 1998;

Chakravarty, Gulen & Mayhew, 2004; Pan & Poteshman, 2006). Recently, Roll, Schwartz & Subrahmanyam (2009) claim that more efficient stock price derives from options trading will enable firm to allocate its resources more efficiently and eventually improves firm performance. This field of study builds its foundation based on the information role of options. The active information transmission between options and stock induced by informed trading increases the spot price efficiency. When stock price is more aligned with its fundamental value, it can serve as a guide for managers in making appropriate investment decisions which will eventually convert into higher firm performance in the long-run (Chen, Goldstein, & Jiang, 2007; Durnev, Morck, & Yeung, 2004; Giammarino, Heinkel, Hollifield & Li, 2004).

In most non-U.S. countries around the world, the major form of agency problem normally derived from the conflict of interest between the controlling and minority shareholders or simply type II agency problem ( Shleifer & Vishny, 1997; Claessens & Fan 2002; Claessens, Djakov, Fan & Lang, 2002). The controlling shareholders normally hold more voting right than cash flow right through complicated ownership structure. Thus, they have the incentive and ability to divert corporate resources for their private gain at the expense of minority shareholders (Shleifer & Vishny, 1997; Claessens, Djakov, Fan & Lang, 2002; Florackis, Kostakis & Ozkan, 2009 ). In order to conceal their expropriating behaviour, the entrenched controlling owners have the tendency to involve in information hoarding activities (Fan & Wong, 2002) which will eventually increase the cost of information acquisition of the outside investors. Thus, it is expected that the outside investors may no longer interested to invest in this type of firm as well as its derivative

products due to higher trading risk. Under this situation, the observable effect of derivative trading on firm performance generation might not be obvious. Further, if the controlling owner-managers have the motivation to indulge in expropriating activities, the signals from stock market may serve no purpose to them, and once again, the linkage between derivative and firm performance may not be prevalent. In short, it is probable that the incremental benefit derived from derivative trading based on U.S. experience as suggested by Roll, Schwartz & Subrahmanyam (2009) may be less significant in non-U.S. market in the presence of type II agency problem.

In order to alleviate the agency problem, Claessens & Fan (2002) propose corporate monitoring through institutional ownership as the solution. It is because institutional owners are normally formed by sophisticated investors who are experts in financial management and possess large pool of fund with the objective to make decent profits on behalf of their clients. They are normally independent from corporate insiders and hence more vocal to voice out their dissatisfaction over any corporate decision which is expected to affect their return on investment. They have the ability to divest their investment and thereby increase a firm's cost of capital should the management fail to fulfil their demand of profit. These factors have made the institutional shareholding an important element in corporate monitoring. Empirical findings from Aggarwal, Erel, Ferreira, & Matos (2011); Hadani, Goranova & Khan (2011); Hashim & Devi (2012); Lin, Wu, Fang & Wun (2014) and Ahmad & Jusoh (2014) collectively show that firms under the oversight of institutional owners have better governance .

It is therefore sensible to expect that equities from a better governed firm under the oversight of institutional owner will attract the investing public to perform information search due to the risk of trading and information acquisition cost are relatively lower. The availability of derivative product of the better governed firm will induce investors with firm-specific information to trade in the derivative market because derivative offers them a low cost alternative to profit from their information set. Following this, another group of investors who prefer to maintain their position in the spot market are able to gather value-added signals from derivative trading activities and update their information set accordingly. The more frequent flow of information between derivative and spot market should improve spot price efficiency. Efficient stock price assists managers in their resource allocation decisions and eventually enhances firm performance. Taken together, it is reasonable to expect that the existence of institutional ownership should be able to influence the extent of derivative in firm performance generation.

Studies also indicate that not all institutional investors are identical. Relative to domestic institutional investors, the foreign institutional owners are claimed to be more independent from the firm management and hence are more capable to take an active stance against the entrenched corporate insiders ( Ferreira & Matos, 2008; Garner & Kim, 2013; Chen, El Ghouli, Guedhami, & Wang, 2014) . In addition, they are also likely to import good governance practices from their home countries into their investee firms which located in poor governance countries ( Aggarwal, Ferreira & Matos, 2011) . This move is expected to shape the corporate culture of the host country investee firms and then lead to better firm governance and performance. However, some studies point out that foreign institutional investors may not be an