

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter discusses the important elements of currency exposure that determine the direction of the study. The research sets to study the level of currency exposure and the effectiveness of corporate hedging practices. Firstly, the study starts with a discussion on the definition and background of foreign currency exposure, corporate hedging and significant financial events. This is followed by problem statements where issues regarding currency exposure and corporate hedging are explored and explained. Issues and explanations pertaining currency exposure are conveyed to construct problem statements and objectives for the study. The contributions from the study are discussed in the justifications of the study section.

1.1 Background of the Study

1.1.1 Foreign Currency Exposure

The collapse of Bretton Woods system in 1973 (Ritschl, 2008) has made way for the floating exchange system and sparked uncertainty of the foreign exchange market (Ameer, 2010). The increased uncertainty and rising exchange rate volatility triggered higher interest on the study of currency exposure. Adler and Dumas (1984), Allayannis

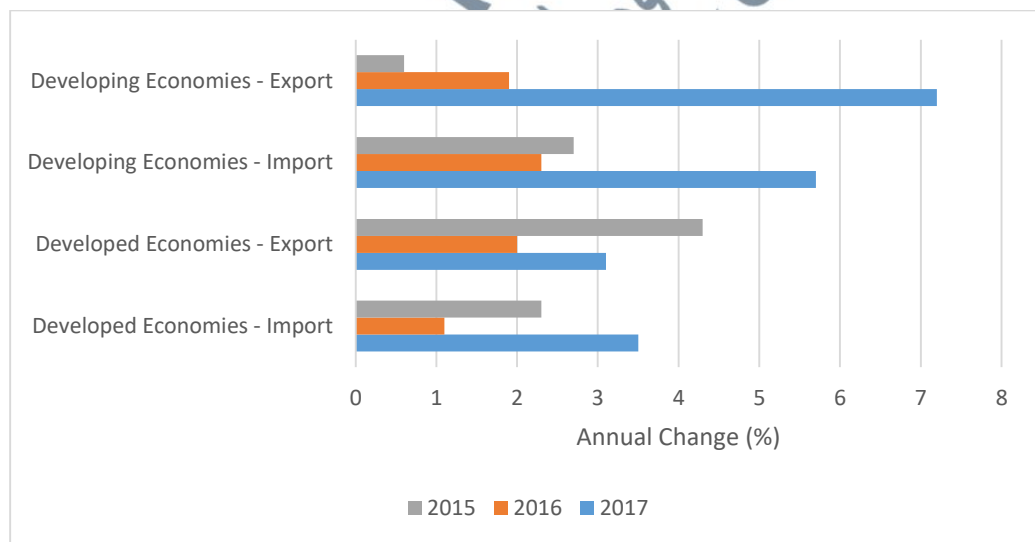
and Ofek (2001), and Bacha et al. (2013) defined currency exposure as the changes in stock return and firm value resulted by changes in exchange rate. Such exposure arising from exchange rate fluctuations has become a major factor in any investment decision involving multinational transaction (Wong, 2010). Exchange rate movements change the home currency value of foreign revenues and costs; ultimately change the expected future cash flows and value. Thus, exchange rate exposure reflects how much the firm values are affected by exchange rate fluctuations (Bacha et al., 2013). Nguyen et al. (2007) point out the conventional belief that exchange rate exposure is related to firm value via the import of future cash flows and values of overseas assets. In other words, movements in exchange rate alter the value of their trade payment and receivable. Hence, foreign currency exposure is also recognised as a general management issue (Pringle & Connolly, 1993). Defining the foreign currency exposure has facilitated researchers to measure the exposure of stock return, especially with the rising interest on currency exposure.

The ubiquitous nature of the currency exposure arises from the various business activities undertaken by the firms and driven by the exchange rate fluctuations in the international market. Activities such as investment portfolio of foreign asset, cash flow from foreign subsidiaries, foreign liabilities, and export and import activities would influence the firms' volume of sales and quantities of goods and services. The unforeseeable currency movement does not only affect firm's competitiveness, but also influences the relative values of domestic and foreign assets and liabilities in both foreign and domestic markets (Muller & Verschoor, 2007).

Döhring (2008) highlights the broad categorisation of currency exposure by listing three types of currency exposure, namely the transaction exposure, economic exposure, and translation exposure. Transaction exposure is the impact of exchange rate changes towards the value of committed cash flows. Economic exposure is the impact of exchange rate movements on the present value of certain future cash flows. Lastly, translation exposure refers to the impact of exchange rate changes on the valuation of foreign assets and liabilities on a multinational company's consolidated balance sheet. Economic exposure is often long-term in nature while the transaction and translation exposure are short-term in nature.

Previous studies were conducted on the relationship between exchange rate changes and firm values (Adler & Dumas, 1984). Methodological adjustments were further incorporated into the studies on currency exposure such as the inclusion of market index (Jorion, 1990), and asymmetric exposure (Allayannis & Ofek, 2001). Event study method with precaution on the asymmetric behaviour of the exchange rate movements by Dewenter et al. (2005) examined the currency exposure among the US multinational firms. Instead of methodological weakness, the study attributed the low exposure level due to the widespread use of hedging instruments and insufficient information to respond to currency movements. Similarly, Bartov and Bodnar (1994) attributed the weak relationship between currency movement and stock return as due to lagged information and slow response rate. In contrary, low currency exposure level was often recorded in developed countries due to efficiency and better operational structure in their markets (Allayannis & Ofek, 2001; Bartram et al., 2013; Bodnar &

Marston, 2002; Bodnar & Wong, 2003; Di Iorio & Faff, 2000). These findings were fundamentally in line with the theories of corporate hedging which propose higher currency exposure in market with higher imperfection and uncertainties (Smith & Stulz, 1985). Parsley and Popper (2006) attributed the robust trading activities in developing countries as the cause of the disparities of currency exposure between developing and developed countries. The trading activities are illustrated by the merchandise trade volume in Figure 1.1. The figures are obtained from the World Trade Statistical Review press release in April 2018 by the World Trade Organisation (WTO). Developing countries are shown to have greater import and export volumes compared to the developed countries.



Source: World Trade Statistical Review Press Release 2018

Figure 1.1: Merchandise Trade Volume between Developed and Developing Economies, 2015 – 2017.

Apart from the trading nature of the countries, past researchers also highlighted specification problem as one of the causes for the low currency exposure level. As specification problem arises from the commingling of positive and negative exposures, it is imperative to also consider the asymmetric nature of the currency movement. The importance of asymmetric reactions of stock returns to currency fluctuations is accentuated by Clark and Mefteh (2011) as it holds the potential to increase firms' incentives to engage in risk management and underinvestment activities (Sprcic & Sevic, 2012). In line with this, Bartov and Bodnar (1994) found stronger evidence of short-run relation between stock returns and exchange rate changes by including the asymmetric aspect into their samples. Further explanations on asymmetric relationship between firm values and exchange rate changes will be provided in the next section.

1.1.2 Foreign Exchange Market in Malaysia

Starting from 1967, the Malaysian dollar was initially linked to sterling and regulated under the Currency Board System (Bank Negara Malaysia, 2020). The Currency Board System allowed the conversion of Malaysian dollar to sterling and vice versa at a small administrative charge. Later on, the sterling was replaced by the USD as the intervention currency in 1972 which signifies the use of the USD in transaction that does not require the Malaysian ringgit. Over time, the USD remains as the predominant traded foreign currency in Malaysia and often used as the main currency pair of interbank transaction. Reliance on the USD is prompted by the liquidity of the

currency which incurs low transaction cost. In response to the speculative attacks on Thai Baht in 1999, the Malaysian government took two immediate moves to protect the Malaysian economy from further external vulnerabilities.

Firstly, Malaysia introduced a capital control mechanism called the New Economic Recovery Plan (NERP) to ease the fiscal and monetary policy and lower the cost of capital to stimulate economic growth. The plan boosted the injections into the circular flow of income and capital accumulation, ultimately helped the nation to recover from the crisis. One policy that Malaysia introduced subsequent to the NERP was the strict capital controls on foreign cash. The move prevented foreign investors from funnelling and withdrawing cash from the stock market and foreign exchange without a grace period of three to six months. Secondly, Malaysia pegged the ringgit to the USD at RM3.80/ USD1 in September 1998 to restore financial stability and counter the aftermath of AFC. Pegging of the ringgit and the capital control eventually broke the link between domestic interest rates and exchange rate. Thus, exchange rates could no longer affect the volume of investment and interest rates. While the moves did not result in immediate effect, the government was able to plan for further strategies to restructure the economy. Removal of the pegging in July 2005 allowed Malaysia to transcend to the managed float system. The de-peg also provided the freedom for the Malaysian market to better respond to any changes in the international market.



Higher level of confidence and stability of the country's economy was apparent on the onset of the global financial crisis in 2008. Strong financial sector and negligible

exposure to subprime-related assets played crucial role underpinning the Malaysian economy during the crisis thanks to the financial and economic reforms prior the Asian financial crisis. However, Malaysia was not fully insulated from the global economic downturn given its highly open economy. This was shown by the sharp decline in GDP at 6.2% in the first quarter of 2009 (Ibrahim, 2010). Concerted fiscal stimulus and preventive measures to ease the monetary policy by the government contributed to the recovery of the economy in the subsequent periods. Malaysia was back to the growth lane in 2010 with 10.1% GDP in the first quarter alone. The strong growth was attributed to the continuous expansion in the domestic demand and notably higher external demand.

In addition to the close association with the USD, development in the market has further linked the Malaysian ringgit to a few currencies such as Singapore dollar (SGD), Great Britain Pound (GBP), Euro (EUR), and Swiss Franc (CHF). Expansion of the foreign exchange market is also marked by the division of the market into two layers in the 1990s (Izham & Islam, 2015). The customer or retail trading form the primary source of the currency demand in the market, followed by the interbank segment of the market. Hence, Ringgit Operations Monitoring System (ROMS) was introduced in February 2001 to monitor the cross-border flows in the foreign currency market. Such monitoring is made possible as the system requires authorised dealers to report any foreign currency transaction to Bank Negara Malaysia. Another unique criterion of the market is the authority held by the dealer with minimal competition and low transparency level (Abdul Aziz, 2013). In other words, Malaysian foreign currency

market remains as least regulated and opens to those with expertise on the market and instruments involved in the transaction. The uniqueness of the market signals the potential exposure arising from participating in the market. Henceforth, any study on currency exposure level in the Malaysian is believed to provide meaningful findings.

1.1.3 Corporate Hedging Practice in Malaysia

Hedging is a form of investment strategy that is often practised by market participants to offset a particular risk that they face. Hence, firms would choose a hedging position that neutralises the risk and exposure as much as possible (Hull, 2012). Given the robustness of currency movements, it is thus crucial to ascertain the level of currency exposure in order to implement suitable investment practice while simultaneously shield from unexpected exposure. Even though exposure is unavoidable in running corporations, investors always strive to reap maximum profit while minimising the exposure; which is attainable through hedging. According to the theory of hedging as postulated by Smith and Stulz (1985), hedging increases the firm value by eliminating any probable claim that affect the company's cash flow. Hedging strategy may also offset any loss or gain of the currency. Exchange rate risk has become one of the most hedged corporate exposure in order to offset the potential loss and gain (Yip & Nguyen, 2012).

Advanced market has shown comparatively lower currency exposure due to the existence of numerous hedging strategies and tools in the market to alleviate the impact of the exposure. Cash flow smoothening in the presence of hedging derivative also

improves the probability of internal funding for future investment projects especially when the access to external financing becomes costly. However, developing market does not fully utilise the derivatives and make use of the benefits of derivative hedging. Derivative practice in developing market is low despite the comparatively high exposure level in the market. This is illustrated by the low turnover level of over-the-counter (OTC) foreign exchange instruments in Malaysia by the Triennial Survey in 2016. As shown in Table 1.1, Malaysia accounts only USD 8 billion turnover, in comparison to USD 1,272 billion of the US and USD 2,406 billion of the UK. The neighbouring Singapore records USD 517 billion of turnover, an expected figure considering the country's position as a developed country.

Table 1.1: Over-the-counter Foreign Exchange Instruments Turnover in Malaysia, Singapore, the United States and the United Kingdom, 2016.

Country	Turnover of OTC Foreign Exchange Instrument
Malaysia	USD 8 billion
Singapore	USD 517 billion
The US	USD 1,272 billion
The UK	USD 2,406 billion

On the other hand, a closer example is the composition of unhedged and hedged firms using foreign currency derivative (FCD) in Malaysia as shown in Table 1.2. The percentage of hedged firms increased from 5.314% in 1995 to 33.816% in 2016 while the composition of unhedged firms decreased from 94.686% in 1995 to 66.184% in 2016. Despite the higher incidence of currency exposure in developing market, majority of the sample firms in Figure 1 were not hedged by financial derivative. In

fact, most of the firms resorted to natural hedging rather than employing the derivative for hedging purpose. The study is aware of the limitation of currency futures and options' contracts in the country and Malaysian firms solely depend on over-the-counter forwards and options (Chong et al., 2014). The low level of financial hedging activity in the country raises the question on the exact potential of financial hedging in alleviating the exposure effect towards the Malaysian firms.

The overall hedging structure comprises the financial and operational hedging. In this regards, operational hedging is deemed as befitting the objectives to provide long-term hedging for the multinational's economic exposure. Operational hedging may either be used to compliment or substitute the financial hedging practice within the firms' investment structure. The role was made possible considering the ability of operational hedging to exploit company specific-asset and acquire the potential economic of scales (Hadian & Adaoglu, 2020). Differences in tax structures across countries would further boost the value-creating benefit of operational hedging.

On the other hand, having operations across countries would also make way for issues such as systematic risk and agency problem (Reeb et al., 1998). Systematic risk escalates as the firms now must adapt the new market's environment especially if the market possesses very different characteristics than its domestic market. Secondly, geographical distance may make it harder to oversee operations in foreign countries, thus escalates the agency problem. Based on these reasonings, this study is motivated to investigate whether financial and operational hedging practices provide significant

effects towards the currency exposure in the country. Findings on the significant effect of hedging practice can be utilised to motivate more Malaysian firms to engage hedging practice in their operation for better exposure hedging. Furthermore, low utilisation level must be prompted by any trend or behaviour that influence the overall tendency of these firms to employ hedging practice.

Table 1.2: Composition of Hedged and Unhedged Firms of the Sample Non-financial Firms in Malaysia, 1995-2016

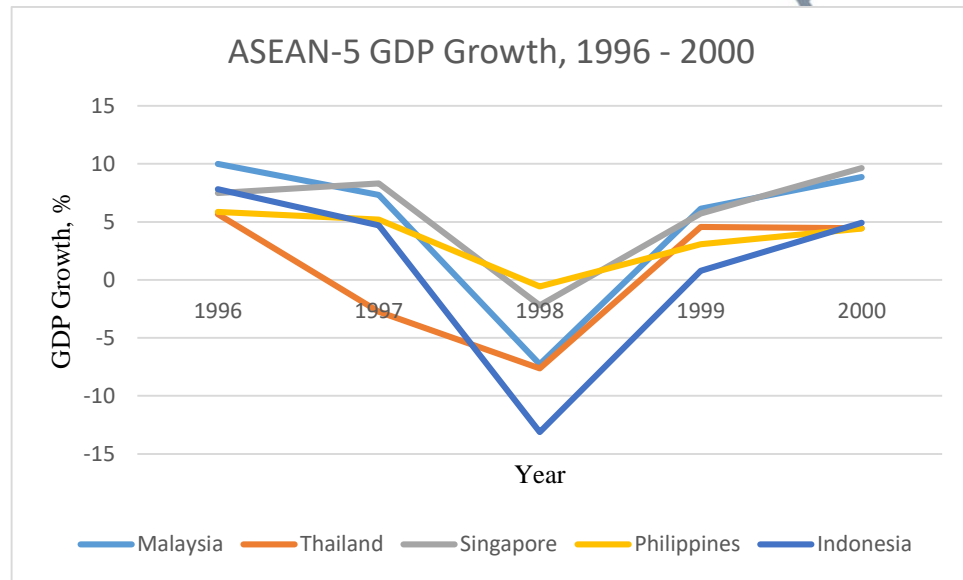
Year	Hedged Firms		Unhedged Firms	
	No. of Firms	%	No. of Firms	%
1995	11	5.3140	196	94.6859
1996	11	5.3140	196	94.6859
1997	11	5.3140	196	94.6859
1998	11	5.3140	196	94.6859
1999	11	5.3140	196	94.6859
2000	15	7.2464	192	92.7536
2001	21	10.1449	186	89.8551
2002	38	18.3575	169	81.6425
2003	51	24.6377	156	75.3623
2004	55	26.5701	152	73.4299
2005	64	30.9179	143	69.0821
2006	65	31.4009	142	68.5990
2007	68	32.8502	139	67.1498
2008	67	32.3672	140	67.6329
2009	67	32.3672	140	67.6329
2010	71	34.2995	136	65.7005
2011	72	34.7826	135	65.2174
2012	69	33.3333	138	66.6667
2013	72	34.7826	135	65.2174
2014	71	34.2995	136	65.7005
2015	72	34.7826	135	65.2174
2016	70	33.8164	137	66.1836

Preliminary analysis of this study on the practice of derivative hedging among 207 sample Malaysian firms illustrates the modest level of hedging practice. As seen in Table 1.2, majority of the sample firms consist of unhedged firms while a small proportion of the firms use currency hedging derivatives to hedge their business. The contradictions in past findings between the low exposure and the low hedging derivative practice in the western economies have given rise to more rigorous analyses to better apprehend the real dynamics of the exposure in volatile markets. These shortcomings necessitate further study to answer the underlying questions on the extent that exchange rate exposure exerts economically meaningful effect on the developing countries. In addition, the findings help towards the advancement of the financial market.

1.1.4 Financial Events in Malaysia

Malaysia provides excellent setting for testing currency exposure due to enhanced market openness in the country since the credit boom in 1990s. Friendly market and liberal foreign policies mainly contribute to the development in the market (Muniandy & Uning, 2006). Malaysia is renowned as an active trading country and ranked among the top 20 trading nations (Bacha et al., 2013). Apart from extensive trading activities in the country, the financial timeline of the Malaysian market also entails interesting series of financial events. Malaysia was hit by two financial crises; the Asian Financial Crisis (AFC) in 1997 and Global Financial Crisis (GFC) in 2008. The Asian financial crisis was triggered by the devaluation of Thai baht and involved the South East Asian nations. The downturn effects in the ASEAN majorly hit Thailand in 1997 (Figure 1.2)

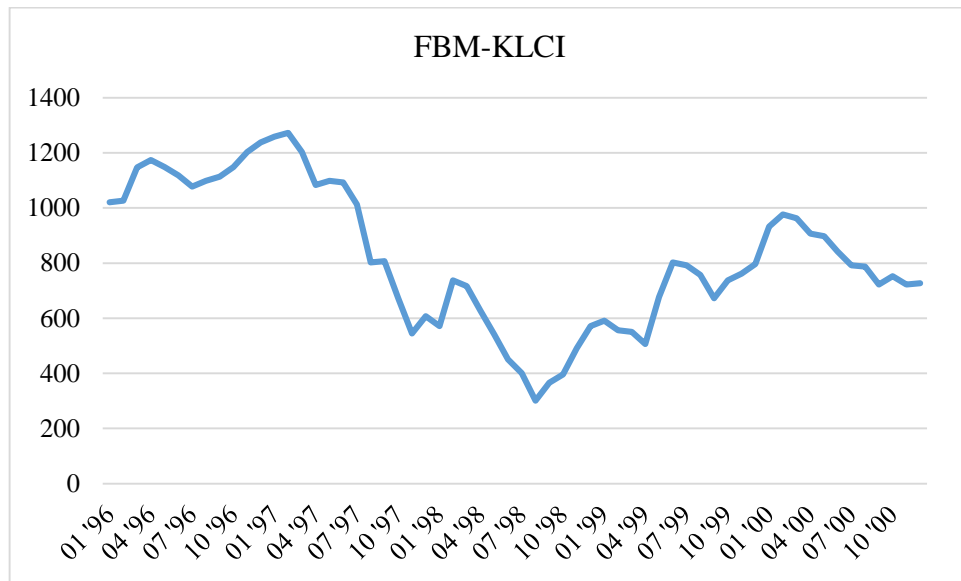
while the other ASEAN-5 countries suffered a slight decline. The following year showed huge decline in the GDP growth for all the ASEAN-5 countries, illustrating the domino effect from the outbreak among the countries.



Source: World Bank Data

Figure 1.2: Annual Gross Domestic Product (GDP) Growth of ASEAN-5 Countries, 1996 – 2000.

Malaysia was the second most severely affected market in 1998, with GDP growth of 7.32 in 1997 to -7.259 in 1998. The worst affected market in 1998 was Indonesia. The countries attempted to recover from the turmoil in 1999 with all markets reported slightly higher GDP growth. The incident led to the establishment of the Association of South East Asian Nations (ASEAN) to call for closer regional cooperation among its member, including the political, economic, and monetary aspects (Tan et al., 2009).



Source: Bloomberg Terminal

Figure 1.3: Monthly FBM-KLCI, 1996 – 2000.

A deep plunge in FBM-KLCI between 1997 to 1998 signalled the severity of the crisis effect on the Malaysian market. In Figure 1.3, the FBM-KLCI dropped from over 1200 in early 1997 to a record low of 301 in August 1998. The fall in the Malaysian market also casted a downfall in the Malaysian ringgit and prompted changes on the Malaysian exchange rate regimes. Malaysia abandoned its managed float regime in 1998 and adopted fixed exchange rate regime against US dollar to fend off speculative attacks on ringgit. Even though the peg was meant to stabilise the ringgit from further fluctuations, the move was not favourable for importers as their payable amount would be fixed to the peg rate despite the possible lower value of the imported goods. Pegging the ringgit to the USD at RM3.80 also marked a very low depreciated value of ringgit. The peg was only lifted in July 2005 (Muniandy & Uning, 2006).

In addition to the AFC, the study also considers interesting periodical events of the 2008 GFC and the exchange rate regimes shifts as time-varying factors. The GFC that started in 2008 was a contrast stark to most economic and financial crisis as it originated from developed economies. Deregulation of the American financial market made way for the use of mortgage-backed security. Easy mortgage and higher property value attracted many people to get into home loans and caused the housing market bubble. Meanwhile, the mortgages were tied to several derivatives in order to produce mortgage-backed-security to further boost the banks' ability to compete with foreign firms. However, the whole situation eventually backfired as the asset market became too confiscated with debt. The close linkage between the mortgage and derivatives drove the overall US financial industry to fall. The US as the epicentre of the crisis was the major trading partner for many countries including Malaysia. While the effect was not severe in the East-Asian countries, the Malaysian market also suffered a little downside due to the global market situation and sentiment of global investors. Despite the fiscal interventions were minimal during the crisis; the Malaysian GDP growth experienced a decrease by 0.1% in 2008 and further dropped by -1.51% in 2009. With this, the study considers the recent 2008 GFC, 1997 AFC and the exchange rate regimes shifts as time-varying factors.

1.2 Problem Statements

Currency exposure is present in transactions that are direct or indirectly dependent on the currency movements. As modern-days transactions are virtually borderless due to the technological and market advancements, firm's cash flow and value have become more sensitive to the currency fluctuations. Hence, firms need to be more progressive in overcoming the exposure. Hedging practice has been connoted as having the ability to minimise the exposure level. All this while, firms have widely used natural hedging strategy to minimise the exposure level. Natural hedging involves matching certain asset class to offset any potential risk arising from firm transaction. However, the technique requires active monitoring to ensure continuous effectiveness which becomes a drawback for the firm in the long run. With this, several issues on currency exposure and hedging practice will be explained in chronological order.

First of all, the study is motivated by the widespread currency exposure among developing nations compared to developed economies. Compared to developed countries, markets in developing countries are often characterised by higher information asymmetry and less efficient markets for corporate control, institutional and legal systems (Ameer, 2010). These conditions lead to higher currency exposure in developing countries. Despite the importance of currency exposure, study focusing on the level of currency exposure in developing countries is relatively limited. The large body of research had been attributed to the study of currency exposure in the developed market namely the US and UK (Allayannis & Ofek, 2001; Bahmani-Oskoe et al., 2020; Bartram et al., 2013).

The level of economic openness has direct impact on the level of exposure, especially for a small open economy such as Malaysia. Malaysia's rigorous participation in cross border activities has put the country among the top trading nations in the world (Bacha et al., 2013). Referring to the trade-to-GDP data from the Worldbank database, the extensive trade activities in Malaysia are illustrated by ratio whereby the trade is the sum of export and import of goods and services of the country. Trade-to-GDP ratio of Malaysia is 134% which signifies high degree of openness compared to developed countries such as the United States (28%), the United Kingdom (56%), and Japan (36%). These figures demonstrate the country's reliance on trade, simultaneously causes the country more vulnerable to currency movements. According to the theory of purchasing power parity, trade volume is very much inflicted with the value of the local currency. Strengthening and weakening of the local currency will affect a country's trade volume, signifying the crucial importance of currency exposure in determining a country's trade. The vulnerability requires rigorous study to address the country-specific level of currency exposure especially for an active trading country such as Malaysia. Such study will provide knowledge on the level of currency exposure in the market and facilitate better studies and policies related to foreign currency risk management in the country. Furthermore, the growing development of cross border transaction and higher foreign currency exposure justifies this study to measure the level of currency exposure in Malaysia.

Additional to the overall measurement of currency exposure, the study also highlights the specification problem particularly on the asymmetry relationship between firm value and exchange rate changes. Adler and Dumas (1984) pioneered the total exposure model

to measure the sensitivity of firm value to unanticipated changes in exchange rate. Even though the model was later improvised by Jorion's (1990) residual model to include market index in the model to control market effect, Clark and Mefteh (2011) highlighted the possibility of asymmetric reactions of stock returns to currency fluctuations. Pricing-to-market theory has shown how firms often tend to observe the market and adjust their prices in order to maintain their activities and competitiveness. In this sense, the level of currency exposure is regarded as asymmetric in nature and dependent on the direction of changes in exchange rate. Previous studies tend to ignore the bias from commingling positive and negative effects. Bartram (2004) claimed that most studies mainly focus on the linear currency exposure and fail to account for possible asymmetric exposure. The asymmetric response of stock returns to foreign currency depreciation and appreciation has also received very little attention in Malaysian studies. Ignoring the asymmetric effect in the measurement could cause estimation bias on the exact level of exposure and detrimental towards the decision making process to manage the risk arising from the exposure due to the commingling of the positive and negative exposure level. Hence, this study is motivated to measure the level of currency exposure using both the symmetric and asymmetric models in order to provide more precise and robust findings to the existing literature. Answering the symmetric and asymmetric issues will be the first objective of the study.

The second issue focuses on the incidents of currency exposure across different episodes of financial crises and exchange rate arrangements. In the study of Malaysia, three significant events are taken into consideration; the Asian Financial Crisis, exchange rate

regime shifts, and Global Financial Crisis. Malaysia was hit by AFC in 1997, which was marked by significant economic depreciation (Lim et al., 2008; Sufian, 2010). In response, fixed exchange rate regime was established to shield Malaysian ringgit from speculative attacks and the peg ended in 2005. The GFC went full-scale in the last quarter of 2008 and reduced manufacturing trade which also affected the East Asian countries including Malaysia (Tienhaara, 2010). Considering the significant effect of exchange rate movements towards firm's profitability and cash flow, it is fundamental to analyse the changes of currency values and potential extraneous effects during these financial events. Furthermore, these events proved to be significant towards Malaysia's market. Referring to Figure 1.4, the FBM-KLCI in April 1997 was 1200 before dropping to 804.40 in August 1997 on the onset of the AFC. The same trend was observed during the GFC. The market index was 1357.40 in February 2008 and plummeted 500 points to 863.61 in October 2008. As such, market conditions are deemed as imposing systematic risk towards the firms and inclusion of all three events necessitates for time-varying analysis.

Measuring currency exposure under separate periods rather than a single estimate is more appropriate because investment structure changes over time, making currency exposure as event specific in nature (Ameer, 2014). Issues may arise if the estimation is conducted without considering the time-varying aspect of the currency movement. Similar notion was mentioned by Glen and Jorion (1993) who connoted the changes of expected returns in international market as due to time-varying effect. Study by Bacha et al. (2013) took into consideration the shift in Malaysian capital control and AFC, but the study does not stretch to cover the GFC. The nature of AFC and GFC are different thus the need for a

study that adopts both periods in order to compare the effects of these different crises towards the market. In this sense, analysing the level of currency exposure in Malaysia across different financial periods inclusive of the AFC, peg period, and GFC is crucial to provide better understanding on how currency exposure responds to different forms of financial periods. Hence, the changing levels of currency exposure across different financial periods can be captured by conducting time-varying analysis in the second objective.

Thirdly, the study considers the problem arising from the ignoring the scale-dependent nature of exchange rate exposure across different time domains. One of the main considerations in investment strategy is time-scales as investors tend to view the market from different time resolutions (Dar et al., 2014). In term of currency exposure, investors are mainly interested to measure the level of currency exposure in both long-run and short-run bases because such knowledge enables better investment decision. In addition, financial data are very frequent and time series often exhibit changing frequencies over time (Gherman et al., 2012). However, past studies are mostly restricted to single time domain estimation. The restriction violates the logical assertion of varying exposure level across different time-scales and frequencies.

According to Masih et al. (2010), the need to incorporate different time scales has been hindered by unavailability of appropriate analytical tool for data decomposition. Additionally, scarce studies have discussed the multiscale foreign currency exposure in the

Malaysian market. Therefore, this study attempts to segregate the data into different frequencies and time scales in order to capture the true dynamic of foreign currency exposure for specific time domain. In this light, wavelet, a new development in financial analysis could be used to address the time scales issue to ascertain how currency exposure varies across multiple time scales and answers the third objective of the study. The approach is similar to previous works by Masih et al. (2010) and Dar et al. (2014) who studied the multiscale issue by assigning different scales and horizons to their data. Addressing the time scale issue gives deeper understanding on holding period and how holding period affects investment decisions in Malaysian firms.

Consequential to the currency exposure issues, the study later addresses the issues on the foreign currency hedging practice in Malaysia. Generally, hedging is deemed as enhancing the firm value. According to the theory of hedging (Smith & Stulz, 1985), hedging minimises the exposure by eliminating any probable claim and provides smoother expected cash flow through tax benefits and lower cost of financial distress. In turn, smooth future cash flow reduces the possibility to engage in external funding and simultaneously enables the firms to construct suitable investment strategy. In other words, hedging is deemed as reducing the underinvestment problem due to the lower variability in the future cash flow (Froot et al, 1993).

However, our preliminary analysis shows only 25% of the sample firms in this study are hedged. The low practice level is due to the complexity of the contract and lack of

expertise in the market (Ameer, 2010). The OTC foreign exchange turnover data by the Bank of International Settlement (2019) show that Malaysia only uses 10,119 financial instruments compared to 1,370,119 in the US. The number is still small when compared with Singapore at 639,869. The UK as the world's biggest financial market records 3,575,409 instrument usage. Low level of hedging practice despite the theoretical effectiveness of hedging to reduce the exposure level uncovers a gap in the study of hedging practice. Moreover, mixed results by previous studies on the effect of FCD use towards the level of currency exposure (Allayannis & Ofek, 2001; Yip & Nguyen, 2012) have been reasoned by the existence of other risk management techniques such as operational hedging which reduced the significant association between currency exposure and financial hedging (Yip & Nguyen, 2012).

With this regard, the study investigates the significance of corporate hedging comprising the financial and operational hedging towards the level of currency exposure in Malaysia in order to answer the fourth objective of the study. The mixed empirical findings in past studies stresses the need of a country specific study to provide understanding on the extent of corporate hedging as a hedging mechanism in Malaysian firms and facilitate better future policy or strategy planning. The impact of corporate hedging usage on currency exposure, which is shown to have mixed-findings in past studies, can be measured by investigating the significance of corporate hedging usage in Malaysian firms. The fact that the topic has garnered mixed findings in past studies further dictates the necessity of this study to especially focus on a developing market such as Malaysia. This is secured by

conducting two-stage regressions where the second stage regression measures the impact of the current hedging practice on the level of foreign currency exposure.

In response to these issues, the study involves two stages of analysis. The first step examines the level of currency exposure while the second stage investigates the effectiveness of corporate hedging practices to reduce currency exposure among Malaysian non-financial firms. In the first stage, the study provides new facet of currency exposure by considering the asymmetry, time-variation and multiscale domains into the assessment of currency exposure. Meanwhile, the second stage of the study is motivated by the limited use of hedging tool in managing currency exposure. Hence, the study investigates the significance of corporate hedging towards the currency exposure level in Malaysia. In this study, the corporate hedging practices are inclusive of both the financial and operational hedging segments.

1.3 Research Questions

Following the discussions on the currency exposure level and hedging practice in Malaysia, the study sets to answer the following research questions pertaining the topic.

The research questions are:

1. What is the level of symmetric and asymmetric currency exposure among the Malaysian firms?

2. What is the level of currency exposure among the Malaysian firms across different stages of financial events?
3. What is the level of currency exposure among the Malaysian firms across different time scales?
4. What is the impact of corporate hedging on the level of currency exposure inclusive of financial and operational hedging practices?

1.4 Research Objectives

The aim of the study is to analyse and determine the relationship between foreign currency hedging practice and the level of currency exposure of Malaysian firms.

Specifically, the sub-objectives of the study are:

1. To investigate the level of symmetric and asymmetric currency exposure of Malaysian firms;
2. To measure the variation of both symmetric and asymmetric currency exposure among the Malaysian firms across different periods of financial crises;
3. To analyse the level of currency exposure among the Malaysian firms across different time scales; and
4. To analyse the impact of corporate hedging practice on the level of currency exposure, inclusive of financial and operational hedging practices.

1.5 Significances of the Study

The study contributes to the body of knowledge by providing comprehensive analyses on foreign currency exposure at both panel and firm-levels in Malaysia. Furthermore, the study also contributes in term of originality by providing in-depth study on Malaysia's currency exposure by considering two critical aspects of currency exposure namely the asymmetric exposure and time variation. In term of novelty, the study is believed to open new scope of study pertaining the variation of currency exposure by incorporating the Wavelet analysis. Wavelet analysis on multiscale foreign currency exposure level will enable better observation on the holding periods practiced by investors. Meanwhile, the study also contributes to the overall knowledge of currency exposure by ascertaining the extent of currency exposure affected by corporate hedging practices. With this, the study facilitates better understanding for the involved parties such as multinationals, exporter, and importer on the level of currency exposure during specific financial conditions.

1.6 Scope of the Study

This study focuses on Malaysian financial market. The duration of the study spans from 1995 to 2016, excluding financial institutions from the sample study. The selection is in line with the aim of the study to measure the level and importance of currency exposure among Malaysian non-financial firms. In the first stage of the study, exchange rate exposures are analysed for 207 non-financial firms in Malaysia at both market and firm levels by extending the model developed by Yip and Nguyen (2012). The second stage of the study involves investigating the effect of corporate hedging practices among the non-

financial firms in Malaysia. In assessing the impact of the corporate hedging towards the currency exposure, the study relies solely on the information disclosed in the financial reports of the selected firms. The Malaysian Accounting Standard Board has regulated the disclosure of hedging information in its Malaysian Financial Reporting Standards 7 (MFRS7) in 2010. Revolving from the previous IAS 39, MFRS 7 includes additional chapter on hedging accounting. The chapter specifies the qualifying hedging instrument and the hedged items, in which a derivative measure at fair value through profit or loss may be designated as a hedging instrument. Even though the enforcement of the financial disclosure facilitates the study to observe hedging activities among the selected firms, the standard only begins its full implementation in 2010. Prior to the standard, Malaysian firms only record any derivative transaction as a note.

1.7 Organisation of the Study

Chapter 1 presents the outlines the background of the study, problem statements, research questions, objectives, significances and scopes of the study. The discussion includes definition and mechanism of introduction which discuss currency exposure, corporate hedging practice, Malaysian financial market, and significant financial events in Malaysia. Chapter 2 reviews the literature on currency exposure in developed and developing countries, financial events, multiscale exposure, and corporate hedging practice. Research framework is also depicted in this chapter. Chapter 3 explains the research methodology which consists of selected data and data analysis methods employed to analyse the currency exposure and corporate hedging practices. Chapter 4 provides the

discussions on the findings. Finally, Chapter 5 provides conclusions, implications and recommendations for future studies.

