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MALAYSIA REIT: FIRST DECADE DEVELOPMENT AND RETURNS CHARACTERISTICS

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Abstract

Real estate investment trust (REIT) is a niche alternative investment. Since its introduction in Asia at the turn of the millennium, the REIT market in the region has experienced phenomenal growth. In particular, the Malaysia REIT (M-REIT) market capitalisation has seen a spectacular growth of close to 20 folds from its inception in 2005 until end of 2013. This paper chronicles the development of the M-REIT market vis-a-vis the leading regional REIT markets. M-REIT market is unique as it provides a common platform for the existence of both conventional and Islamic REITs. Empirical tests are also conducted to uncover the returns characteristics of the M-REIT market. M-REIT returns are significantly correlated with domestic stock markets but only weakly correlated with changes in interest rate, with long-term proxy having stronger impact than short-term proxy. The results from correlation analysis are further confirmed by regression testing which shows that M-REIT returns are most significantly driven by domestic stock market returns while only mildly by changes in interest rates and are not significantly driven by returns in regional REIT markets. These findings possibly imply that M-REITs (i) subscribe more to equity characteristics than bonds, (ii) are not 'pure' yield-play instruments, (iii) often regarded as long-term investment and (iv) may not be fully integrated with global and regional REIT markets.

Keywords: REIT; Malaysia; REIT returns; Interest rate, equity and REIT

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1.0 Introduction

Real estate investment trust (REIT) is a recent innovation in many financial markets, especially those from the Asia and European regions, even though it has over half a century of history in the United States (U.S.) (Stevenson, 2013). It is surprising to note that mature and developed markets such as Japan and the United Kingdom (U.K.) introduced their maiden REITs only after the turn of the millennium in 2000 and 2007 respectively. In its simplest form, a REIT is a legal entity created under specific regulation to *own and actively manage a portfolio of income producing commercial real estate* (Newell, 2012). Some of the benefits brought about by REITs include increasing liquidity in a traditionally illiquid real estate market (Newell, 2012), enriching diversification in a mixed-asset portfolio (Wechsler, 2013) and enhancing information transparency in an often elusive real estate market (Lecomte and Ooi, 2013).

The year of 2015 is a significant milestone for Malaysian REIT (M-REIT) market as it marks the first decade of its existence. Since the debut of Axis REIT, the first M-REIT, in August 2005, the market has grown by leaps and bounds in terms of both market capitalisation and number of listed REITs. With an enriched set of data which are both deeper (i.e. close to 10 years) and wider (i.e. 17 listed M-REITs at end 2013), it is now timely to take stock of the development of the M-REIT market as well as to empirically assess the market characteristics in relations to the global REIT markets.

Total market capitalisations of M-REITs have experienced phenomenal growth from a mere RM1.8 billion in end 2005 to a considerable size of RM33.2 billion by 31 December 2013 which is close to 20 folds increase. M-REIT market has been recognised as one of the leading Asian REIT markets, surpassing even Hong Kong in terms of number of listed REITs (HK-FSDC, 2013). Securities Commission Malaysia (SC) in its 2013 Annual Report has noted that M-REIT market has matured over the years particularly in the period post-Global Financial Crisis 2008/09 (GFC) (SC, 2013).

Based on global experience, the M-REIT market at this stage holds great potential in helping to enlarge the local financial market as a whole. The share of M-REITs in relation to the total Malaysian stock market capitalisation stood at about 2.0% as at end 2013 which is below those from the advanced markets such as the U.S at 3.7% and its down-south neighbour, Singapore at 5.4%. In order to continue the growth momentum of the M-REIT market, it is imperative to produce more research works which are comparable to the extant REIT literature (e.g. Clayton and MacKinnon, 2003; He et al., 2003; Allen et al., 2000) so as to create a higher quality, more informational and conducive market environment for REITs to continue to flourish in Malaysia.

This paper is devoted to chart the development of M-REIT market since its inception in August 2005 until December 2013, in which Malaysia has successfully become one of the leading Asian REIT markets (HK-FSDC, 2013; Newell, 2012). Besides that, this paper also looks into uncovering the dynamic inter-relationships between M-REITs and stocks, interest

rates and global equity and REIT markets over the sample period. In addition, we also attempt to identify the significant drivers of M-REIT returns.

In order to achieve the set-out objectives in a meaningful and focused manner, we endeavour to find out answers for the following six research questions; 1) Are M-REIT returns sensitive to changes in local interest rates?; 2) Are M-REIT returns more susceptible to changes in the long-, medium- or short-term interest rate changes?; 3) Which types of interest rate changes (e.g. government bond yield, private debt yield etc) are more significant to M-REIT returns?; 4) Are M-REIT returns driven by returns in the local stocks market in general and property sector stocks in particular?; 5) On the global front, are M-REIT returns correlated with changes in global stock and REIT markets?; and 6) Which of these factors i.e. interest rate changes, stock market returns and REIT markets returns, are more significant in explaining M-REIT returns?

In view of the unprecedented meltdown in the global financial markets in 2008/09, we have broken up the whole sample period into three subsample periods, centring on the GFC to cater for any structural change in market dynamic. At the same time, we harness on the uniqueness of the M-REIT market, which contains both conventional and Islamic REITs within a common platform, by comparing the returns characteristics between the two types of REITs. In the absence of an official M-REIT index, we constructed one with a market-capitalisation-weighted method in order to test our hypotheses which are formed in conjunction with the research questions.al

Firstly, we find that M-REIT returns are weakly correlated (negatively) to changes in local interest rates, which in turn failed to support the notion that REITs are a form of pure yield-play instrument (Ooi et al., 2006; SC, 2013). Second, we find evidence that M-REIT returns are more strongly correlated with long-term than short-term interest rate changes in the post-GFC period which lends support to the notion that REITs are a form of long-term investment as argued by Newell (2012).

Among the various types of interest rate, M-REIT returns are correlated strongest with changes in government bonds (MGS) yields and interbank borrowing rates (KLIBOR). In contrast to Swanson et al. (2002), we do not find any significant correlations between M-REIT returns and changes in credit spread and interest rate term structure. Next, we report that M-REIT returns are correlated significantly and positively with the local stock market and property sector stocks returns. We have also found that M-REIT returns are significantly, although weakly, correlated with changes in global equity and REIT indices.

Finally, we find that M-REIT returns are most significantly driven by domestic stock market returns while only mildly significant by changes in local interest rates and are not significantly driven by returns on regional REIT markets. This finding suggests that M-REITs *behave more like stocks and less like bonds*, which is consistent with Glascock et al. (2000). This finding may also suggest that the M-REIT market is not yet entirely integrated with other regional REIT markets.

The remainder of this paper is organised as follows: Section 2 reviews on related literature while the development of M-REIT market is chronicled in Section 3 which is then followed by elaboration on research design and methodology in Section 4 before the empirical results are unveiled and discussed in Section 5 and finally, Section 6 concludes.

2.0 Literature Review

REITs have been extensively researched, especially those which are listed in the more developed markets such as the U.S., Europe and Australia. This is partly due to the strong encouragement and attractive inducement from well-established trade associations related to REITs such as the U.S. National Association of Real Estate Investment Trusts (NAREIT), International Real Estate Society (IRES), American Real Estate and Urban Economics Association (AREUEA), European Public Real Estate Association (EPRA) and Asia Pacific Real Estate Association (APREA). Goddard and Marcum (2012), who recorded the global development of REITs, traced the origin of REITs to as far as early 19th century in the U.S. in the form of Massachusetts Trust but also acknowledged that the first modern REIT was not created until 1961.

Nevertheless, the U.S. REIT market only experienced robust growth in early 1990s upon the passage of Tax Reform Act 1986 (Stevenson, 2013; Goddard and Marcum, 2012). Seeing the benefits of REITs to the property market and the general health of the economy, many countries started to develop a REIT market in their respective jurisdictions. Australian REIT market, which started in 1971 with the listing of General Property Trust, is the next largest and most successful REIT market globally after the U.S. (EPRA Survey, 2013). Asian countries formally instituted REIT markets beginning in the new millennium with the first REIT listed in Japan in year 2001 (Ooi et al., 2006). Figure 1 charts the timeline of when the Asian countries institutionalised their REIT market by having the first listed REIT.

Figure 1 about here

As seen in Figure 1, China entered the fray only as recent as 2014 with the listing of Citic Qihang Specific Asset Management Plan on Shenzhen Stock Exchange in May 2014. Despite being a late-comer, some of the China-based assets have actually already been securitised as REITs with listings in different jurisdictions (e.g. CapitaRetail China Trust and Mapletree Greater China Commercial Trust in Singapore and RREEF China Commercial Trust and Yuexiu REIT in Hong Kong). In addition, the Hong Kong-listed Hui Xian REIT has been the first Chinese yuan (CNY) denominated REIT since 2011.

According to Ooi et al. (2006), the robust growth in Asian REIT markets are attributed to various supply-side (e.g. alternative source of financing for firms with large real estate holdings) and demand-side factors (e.g. segment of investors who prefer instruments with higher yield than bonds but lower risk than stocks). Moreover, Newell (2012) and Ooi and Wong (2013) have shown that major Asian REIT markets provided superior risk-adjusted

returns to stocks for the period of 2003 to 2012. Also, Newell (2012) identified attractive dividend yields as one of the key benefits of investing in pan-Asia REITs.

Hence REIT returns are generally sensitive to changes in market interest rate. However, the impact arising from changes in interest rate on REITs prices are uncertain. According to standard asset pricing model (e.g. CAPM), rising interest rate causes corresponding rise in required rate of return which leads to lower valuation. On the other hand, Allen et al. (2000) explained that the relationship between changes in interest rates and REITs returns depends on the *underlying forces that cause interest-rate movements*. Interest rate hike following improved economic conditions may result in higher valuation for REITs hence neutralising the conventional relationship between interest rate changes and real estate value.

In support of this argument, Mueller and Pauley (1995) reported a low correlation between REIT returns and interest rate changes. In addition, He et al. (2003), who analysed the relationship between REIT returns and various interest rate proxies, reported that the U.S. equity REITs are only significantly impacted by changes in long-term U.S. government bonds and high-yield corporate bonds. Allen et al. (2000) also showed that REITs are more responsive to changes in long-term than short-term interest rate. Meanwhile, Swanson et al. (2002) found that REIT returns are more sensitive to changes in interest-rate term structure rather than credit spread.

In the context of Malaysia, studies on M-REIT returns and interest-rate changes are scarce, which is not surprising in view of the short history of local REIT market. Lean and Smyth (2012) investigated the relationship between individual M-REIT returns and stock market returns with interest rate as a common variable in order to circumvent potential spurious results. Their results sparked concern that real estate prices in Malaysia might be in a bubble mode and a crash in the stock market would likely burst the real estate bubble.

Moving on, Malaysia, to a certain extent, faces some limitations in attracting global capital in a large scale due to prevailing capital control measures (e.g. foreign exchange control, ownership restriction etc). Therefore Malaysia has to play to its niche, for example, in the Islamic finance sector. Malaysia introduced the world's first listed Islamic REIT in 2006 (i.e. Al-Aqar KPJ REIT) as well as the largest stapled Islamic REIT in June 2013 (i.e. KLCC REIT). Newell and Osmadi (2009) reported that Islamic REITs are resilient in the face of global financial crisis (GFC) in 2007/08 which implies that Islamic REITs could be a promising class of asset for portfolio diversification purposes. Lee and Ting (2009), who studied M-REITs performance over the period of 1991 to 2006,[1] also reported that an equally-weighted REIT portfolio provides diversification benefits to a mixed-asset portfolio.

These findings represent encouraging signs for further development in M-REIT market. However, most of the studies on M-REITs employed dated information (e.g. Newell and Osmadi, 2009; Lee and Ting, 2009; Lean and Smyth, 2012) which preceded the 2010

[1] M-REITs are represented by listed property trust (LPT) prior to 2005.

boom of the M-REIT market. Subsequent section of this paper serves to fill this void by providing an updated development on the M-REIT market.

3.0 Development of Malaysian REIT (M-REIT) Market

Prior to 2005, REIT existed in the form of listed property trust (LPT) in Malaysia. In fact, Malaysia is the first country in Asia which introduced the concept of real estate or property trust to stock exchange in 1989 (Newell and Osmadi, 2009; Ooi et al., 2006; Newell et al., 2002). LPT failed to take off in Malaysia for a long time mainly due to local structural and regulatory factors such as lack of tax incentives and unattractive properties (Newell et al., 2002). Collectively, there were only three LPTs by the end of 2004 with a relatively miniscule market capitalisation of approximately RM239.5 million.

Spurred by the robust growth in other Asian REIT markets especially Japan and Singapore, the Securities Commission of Malaysia (SC) introduced revamped Guidelines on REITs (RG) in 2005. Among the significant changes are favourable tax treatments, higher gearing limits, ownership relaxation on the REIT and its management company, more flexible on acquisition activities and enhanced governance standard (Newell and Osmadi, 2009). Since then, the RG has been continuously improved to keep pace with market development and the latest version of RG, at the time of writing, is dated 28 December 2012. In addition, the SC had also introduced the world's first Islamic RG which is specifically tailored for Islamic REITs. A typical REIT structure is as depicted in Figure 2.

Figure 2 about here

According to the RG, a REIT is defined as "*a unit trust scheme that invests or proposes to invest primarily in income-generating real estate*". As a result, a trustee has to be appointed as the legal owner of a REIT which holds the real estate assets in trust for the unit holders. In contrast to the U.S. and Australian REIT markets, Asian REITs are typically managed by an external manager. A REIT manager is responsible for the day-to-day management of the REIT as well as its long term strategic direction. REIT managers for M-REITs are all related or owned by their respective Sponsors.

A Sponsor is typically a real estate company which are involved in property development activities. Sponsors provide pipeline support to the REITs and are critical in their eventual success (Wong et al., 2013; Lecomte and Ooi, 2013). In the case of M-REITs, not unlike other Asian REITs, the Sponsors usually retain significant ownership in the REITs which are considered as an effective capital-recycling vehicle. In Malaysia, a REIT manager, which is set up as a fund management company, is not eligible to be appointed as the property manager for the real estate assets. Hence this role has to be outsourced and a separate property management company ought to be appointed to provide asset management services to the properties. In most instances, the property management company is either a subsidiary of the Sponsors or an independent property management company. In addition for Islamic REIT, it has to establish a Shariah committee, who are made up of learned Islamic

scholars, in advising the REIT manager on its investment actions in order for the REIT to be Shariah-compliant.

Following the introduction of the RG in 2005, the first M-REIT (i.e. Axis REIT) was listed in August of the same year. Since then, the M-REIT market has experienced phenomenal growth in terms of number of industry players and more importantly, the amount of market capitalisation of the sector. As at end 2005, there were three listed REITs and the number has grown to 17 by the end of 2013. However, the number of listed REITs dropped to 16 by the first quarter of 2014 following the privatisation of Al-Hadharah Boustead REIT by its Sponsor. Despite the marginal drop, some large property players continue to express interest in establishing REITs in the near future (e.g. Sime Darby Berhad, Malaysian Resources Corporation Berhad, WCT Holdings Berhad and Mah Sing Group Berhad).

More astoundingly, many iconic properties in Malaysia such as the PETRONAS Twin Towers, Mid Valley Megamall, Pavilion Kuala Lumpur, Sunway Pyramid and The Ritz-Carlton Kuala Lumpur are now held under a REIT structure. This could be read as a vote of confidence from property owners to the viability of REIT in Malaysia. This development is also setting the stage for mature properties to be transformed or injected into a REIT structure in future.

On the market capitalisation of M-REIT market, the value has grown from RM1.8 billion as at end 2005 to RM33.2 billion at the close of year 2013. This represented an exceptional growth of over 18 times which could be translated into a compounded annual growth rate (CAGR) of approximately 44.0% per annum for the period under study. Putting this figure into perspective, the CAGR of the entire Malaysian stock market for the same period is a respectable 11.9% per annum. In other words, the M-REIT market outgrew the overall Malaysian stock market by close to four times over the sample period.

Despite its spectacular growth, M-REIT market remains a small proportion of the overall stock market accounting for approximately 2.0% of total market capitalisation of RM1.7 trillion of all stocks listed on the Malaysian stock exchange at end 2013. For comparison, U.S. listed REITs accounted for about 3.7% of the total market capitalisation of all the listed stocks on the NYSE-Euronext (U.S.) while Singapore REITs stood at about 5.4% of the total market capitalisation of Singapore Exchange (SGX) listed stocks as at 31 December 2013. From this angle, it provides an indication that there are still plenty of growth opportunities for REITs in Malaysia. In its first decade of development, it must be noted that the growth in M-REIT market is not on a straight-line basis. Figure 3 depicts the evolution of market capitalisation of M-REITs from 2005 to 2013.

Figure 3 about here

As shown in Figure 3, the growth of M-REIT market was progressing steadily between 2005 and 2007. The market capitalisations of M-REITs increased to RM2.8 billion in 2006 and exceeded RM5.0 billion by 2007. However, growth was stunted in 2008 and 2009 without any new listing and one delisting due to weak market performance. M-REITs lost about one-fifth of its value in 2008. This market hiatus is attributed to the global financial

crisis (GFC) of 2008/09. The spill-over effect from the meltdown in the U.S. property sector dampened the sentiment of global investors in real estate investments more profoundly than any other real economy sectors.

In 2010, once the financial storm receded, the M-REIT market rebounded strongly with two new mega listings (i.e. Sunway REIT and CapitaMalls Malaysia Trust) which raised more than RM1.0 billion each. These two mega listings doubled the market capitalisation from RM5.3 billion a year ago to RM10.5 billion in 2010. More mega listings were to follow suit with one new listing each from 2011 to 2013. Pavilion REIT came on board in 2011 while IGB REIT in 2012 and the latest addition to the fray is KLCC REIT in 2013. The recent rapid development has changed the landscape of the M-REIT market entirely.

In addition, the year 2013 marked a watershed moment for Islamic M-REITs following the listing of KLCC REIT as an Islamic stapled REIT with a market capitalisation of over RM13.1 billion. Upon its listing in May 2013, KLCC REIT becomes the largest Islamic REIT in the world and further entrenched Malaysia's position as the world's foremost Islamic financial centre as the country already possesses the largest Islamic bond (or sukuk) market accounting for 69% of total global sukuk issuances (SC, 2013). On the other hand, there was a proposal to delist Al-Hadharah Boustead REIT from the stock exchange in late 2013 and the exercise was completed in the first quarter of 2014. In the global context, 2013 is also an important year for REITs as the total market capitalisation for global REITs surpassed USD1.0 trillion in September (EPRA Survey, 2013).

However, most of the recent studies on M-REITs (e.g. Newell and Osmadi, 2009; Lean and Smyth, 2012) did not include the latest additions from 2010 onwards. Hence it is timely to record the development of M-REITs and their returns characteristics. Table 1 shows the listed M-REITs as at 31 December 2013 with their respective listing date and first-day performance as well as one- to five-year returns.

Table 1 about here

As shown in Table 1, the average underpricing of M-REITs is a moderate 5.2% as measured by the first-day performance. Axis REIT enjoyed the best first-day performance at 29.6% while on the other extreme, AmFirst REIT flopped 12% on its first trading day. If measured against the listing price, most of the M-REITs provided positive returns as at close of 2013 calendar year except for KLCC REIT and IGB REIT which traded below their IPO prices. Axis REIT generated the highest returns at 85.2% followed by Al-Hadharah Boustead REIT at 73.8%. On the horizon longer than one year, M-REITs offered respectable double digit returns.

However, in 2013, M-REITs as a whole registered a negative return of 3.4% as compared to a positive return of 10.5% recorded by FBMKLCI. In fact, without the listing of KLCC REIT, the total market capitalisation of M-REITs would have dropped to RM22.6 billion from RM24.6 billion a year ago. This drop represented a substantial loss of RM2.0 billion from the pockets of the investors. SC attributed the underperformance of M-REITs to the increase in long-term yield as reflected in the rise of 10-year Malaysian government bond

(MGS) rate during the year (SC, 2013). The movements of M-REIT Index vis-a-vis FBM-KLCI and 10-year MGS yield for 2013 are shown in Figure 4 and Figure 5 respectively.

Figure 4 about here

Figure 5 about here

The key question arising from observing Figure 4 and Figure 5 is whether or not the notion that REIT returns are chiefly driven by long term interest rate is supported. The relationships between REITs, stocks and bonds have been of special interest to both market participants and academic researchers. Even though many studies (Clayton and MacKinnon, 2003; Swanson et al., 2002; Pauley and Mueller, 1995) have been conducted on this topic, results are not conclusive. Hence this interesting issue is also one of main the research questions of this study.

In the regional context, M-REIT market is the fourth largest in Asia after Japan, Singapore and Hong Kong (Ooi and Wong, 2013). It consists of approximately 6.0% of the total market capitalisation in the Asian REIT market. Unlike its down south neighbour Singapore, M-REIT market focuses on only domestic properties. Table 2 lists down the key characteristics of M-REIT market in comparison with the more advanced REIT markets in the region as well as the two most developed global REIT markets namely Australia and the U.S.

Table 2 about here

As a small but emerging market, M-REIT returns could likely be influenced by the development of those more advanced markets. Strangely, there has been no study, to the best of our knowledge, which investigates whether M-REIT returns are associated with these leading global REIT markets (J-REIT, S-REIT, HK-REIT, A-REIT and US-REIT). Figure 6 depicts the performances of M-REIT and the five major REIT markets (J-REIT, S-REIT, HK-REIT, A-REIT and US-REIT) from August 2, 2005 to December 31, 2013.

Figure 6 about here

From Figure 6, it is evident that M-REIT market is the second best performer after HK-REIT market. Except for these two outperformers, most of the other developed REIT markets track one another rather closely. Section 5 will unveil the statistical significance of these relationships. But before that, we shall discuss about the research design and methodology in the following section.

4.0 Research Design and Methodology

4.1 Data and M-REIT Index Development

All numerical data used in this paper are retrieved from Bloomberg. We used the price data for all the M-REITs which are listed on Bursa Malaysia as at 31 December 2013.

As reported in the previous section, there are 17 M-REITs with four of them categorised as Islamic REITs while the rest conventional.

Our study commenced on August 2, 2005, which coincided with the listing of the first M-REIT, Axis REIT, until December 31, 2013. Our daily data is filtered to only weekday observations hence resulting in 2,224 days of data points. The whole sample period is further broken down into three subsample periods namely pre-GFC (i.e. August 2, 2005 to December 31, 2007), GFC (i.e. January 1, 2008 to December 31, 2009) and post-GFC (i.e. January 1, 2010 to December 31, 2013). Our choice of the breakpoints for each subsample period is selected based on eyeball analysis of the S&P 500 Volatility Index or more famously known as VIX. The movement of the VIX is depicted in Figure 7. The VIX peaked during the GFC subsample period and abated since 2010 hence justifying our choice of the subsample breakpoints.

Figure 7 about here

As we are interested to investigate the general characteristics of M-REITs as a whole, we require aggregate data in the form of an index. In the absence of an official M-REIT index, we constructed one based on the market-capitalisation-weighted method. The same approach is extended to construct sub-indices for conventional and Islamic M-REITs respectively. The details of the index construction process are provided in Appendix 1.

The other variables employed include FBM-KLCI and FBM-Property Index (FBMKLPRP) which are used as proxies for the Malaysian equity and property markets. Meanwhile, S&P500 represents the global equity market and the established global REIT markets are represented by FTSE-NAREIT All Equity REITs Index (U.S.-REIT), Tokyo Stock Exchange REIT Index (J-REIT), S&P/ASX 200 REIT Index (A-REIT), FTSE-STI REIT Index (S-REIT) and Hong Kong REIT Index GPR250 (HK-REIT). All the indices are re-based as 100 on August 2, 2005 for meaningful comparison.

Following He et al. (2003), we categorised the interest rate proxies into three types based on their tenure i.e. long (10 years), medium (five years) and short (< one year) terms. In the long and medium term spectrum, we used Malaysian government securities (MGS), interest rate swap (IRS), high-grade private debt securities (PDS) (i.e. AAA-rated) and low-grade PDS (i.e. BBB-rated). At the other end of the spectrum, we employed Kuala Lumpur interbank offer rate (KLBOR) of one-month, three-month and six-month as short-term interest rate proxies. MGS yield is the lowest, in its respective tenure, as it is a risk-free asset while IRS and KLIBOR are imputed with banking-sector risk premium. On the other hand, PDS is a form of debt instrument issued by corporations with AAA being the highest rating and BBB the lowest among the investment grade.

In line with He et al. (2003) and Swanson et al. (2002), we have also employed two additional interest rate proxies namely the interest-rate term structure and credit spread or default premium. The term structure, in our paper, is defined as the difference between 10-year MGS and 3-month KLIBOR and it indicates the steepness of the yield curve. As have been widely reported (e.g. Fama, 1986; Estrella and Trubin, 2006), a yield curve has

significant predictive power of the economic outlook with a steep curve signifying a bullish state while a flattened curve warns of an upcoming recession. Meanwhile, credit spread is defined as the difference between 10-year MGS and 10-year BBB PDS. Credit spread is a measure of the likelihood of default with a large spread indicates weakness in the economy while a thin spread a strong one.

All the data, except for interest-rate proxies, are converted into log difference as returns series for analysis purposes. The interest rate proxies, except for term structure and credit spread, are being first-differenced as a measure of change. The summary statistics of the variables are shown in Table 3.

Table 3 about here

4.2 Hypotheses and Econometric Models

We develop eight hypotheses to uncover the answers for the six research questions mentioned in the earlier section. The development of these hypotheses is based on the findings reported in the extant literature. REITs have often been cited as a type of yield-play instrument (Newell, 2012; Ooi et al., 2006) and the slump in M-REITs prices in 2013 has also been attributed to the rise in long term interest rate (SC, 2013). From these observations, we hypothesise that M-REIT returns are significantly and negatively correlated with changes in interest rate (Hypothesis 1) and are more strongly correlated with changes in long term than short term interest rate (Hypothesis 2).

Another often-cited important factor which affects REIT returns is the equity market returns (e.g. Glascock et al., 2000 and Mueller and Pauley, 1995). We conjecture that M-REIT returns are significantly and positively correlated with changes in domestic stock market and in particular the property sector index (Hypothesis 3). We also believe that M-REIT market is integrated with global stock and REIT markets hence a significant correlation with these markets are expected (Hypothesis 4). Due to the close proximity between Malaysia and Singapore, we suppose that M-REIT returns are more significantly correlated with S-REIT returns than any other global and REIT indices (Hypothesis 5). Hypotheses 1 to 5 are tested through Pearson correlation analysis.

In line with Clayton and MacKinnon (2003) and Allen et al. (2000), we also test for the significance of some of the systematic factors in driving M-REIT returns. Besides the two widely reported systematic factors, namely equity market returns and interest rate changes, we also include global REIT market returns as another important factor due to the infancy status of M-REIT market. Hypotheses 6 to 8 conjecture that all these factors are individually significant in driving M-REIT returns and these are tested with the following multi-factor model:

$$\Delta MREIT_t = \alpha + \beta_1 \Delta FBMKLCI_t + \beta_2 \Delta FBMKLPRP_t + \beta_3 \Delta STIR_t + \beta_4 \Delta MTIR_t + \beta_5 \Delta LTIR_t + \beta_6 \Delta SREIT_t + \beta_7 \Delta HKREIT_t + \beta_8 \Delta JREIT_t + \beta_9 \Delta AREIT_t + \varepsilon_t \quad \text{Equation 1}$$

ΔMREIT is the daily returns for M-REIT index and similarly, the daily returns of regional REIT indices are abbreviated as ΔSREIT (Singapore), ΔHKREIT (Hong Kong), ΔJREIT (Japan) and ΔAREIT (Australia). ΔFBMKLCI and ΔFBMKLPRP refer to the daily returns for FTSE-Bursa Malaysia composite index and FTSE-Bursa Malaysia Property Index respectively while ΔSTIR, ΔMTIR and ΔLTIR stand for daily change in yields in short-, medium- and long-term interest rate proxies.

In order to identify the individual contribution of each of the factors namely stock market, interest rate and regional REIT markets, the relevant proxies for each factor are regressed exclusively with M-REIT returns. Besides the full model (Model 1), we also test three other factor-specific models namely the market-factor model which consists of only stock market proxies (i.e. Model 2), the interest-rate factor model with only interest-rate proxies (i.e. Model 3) and finally the regional REITs factor model that contains only regional REIT returns (i.e. Model 4).

All the four models are estimated with ordinary least-squares with White's heteroscedasticity-consistent covariance matrix. The next section presents the empirical results and offers some ensuing discussions.

5.0 Empirical Results and Discussions

5.1 Correlation Analysis

5.1.1 M-REITs and Interest Rates

A correlation analysis is a good starting point for understanding the drivers of M-REITs price movements. Table 4 shows the results of the correlation analysis.

Table 4 about here

Panel A of Table 4 illustrates the results for the overall composite M-REITs while Panel B and Panel C present the results related to conventional and Islamic M-REITs respectively. Column 2 shows the results for the whole period while the next three columns the subsample period results.

From Panel A, M-REIT returns generally show very weak correlation with interest rate changes. Under the whole period, M-REIT returns correlated negatively and significantly with only 10-year MGS on the long-tenure spectrum while significantly correlated with all the KLIBOR which are proxies for short-term interest rate. Despite their significance, the correlation coefficients with the interest-rate proxies are very low ranging between -0.04 and -0.05.

In order to find out whether these relationships are stable over time, we move on to the results under sub-sample periods. M-REIT returns are only significantly correlated with KLIBOR during both pre-GFC and GFC subsample periods but this significant relationship

disappears in post-GFC subperiod and the significant correlations shifted to longer tenure interest-rate proxy like 10-year MGS. Interestingly, the correlations with medium-term interest rate proxies (i.e. 5-year MGS and 5-year IRS) are significantly positive which implies that higher returns in M-REITs are associated with higher medium-term interest rate.

The results for conventional M-REITs, which are shown in Panel B, are largely similar with the results for overall M-REITs. However, there are some slight differences in the results between Islamic M-REITs and overall M-REITs. The significant correlations for Islamic M-REITs are mainly observed with medium-term interest rate proxies (e.g. 5-year MGS, 5-year IRS and 5-year PDS-BBB). These significant correlation coefficients show positive sign which imply rejection of the notion that REITs are pure yield-play instruments.

In a nutshell, the association between M-REIT returns and interest rate is weak which is consistent with the conclusion found in Mueller and Paulley (1995). It must be noted that the few significant results on correlation reported in Table 4 are much lower in terms of absolute value than generally reported in other studies (e.g. correlation with long-term interest-rate is reported here as -0.04 while an average of -0.30 is reported in both He et al., 2003 and Mueller and Paulley, 1995 who utilised US data). M-REIT returns are also hardly correlated with term structure of interest rate and credit spread. Hence Hypothesis 1 is rejected. The overall weak correlation between M-REIT returns and changes in interest rate could be due to the infancy stage of the REIT market in Malaysia.

In addition, the results on the correlation between M-REIT returns and the three interest-rate tenures vary. While the correlations are generally negative for both long- and short-term interest-rate proxies, M-REIT returns tend to correlate positively with medium-term interest-rate proxies with significance detected during post-GFC subperiod. Upon decomposing the overall M-REITs, it is identified that conventional M-REITs are more closely associated (negatively) with long-term interest rate while Islamic M-REITs (positively) with medium-term interest rate.

From the overall perspective, Hypothesis 2 is partially rejected as M-REIT returns are significant at both spectrum of long- and short-term tenure but it finds some solace during the post-GFC where significant and stronger correlations are identified at the long end spectrum of the interest-rate tenure. This finding may suggest that market participants start to appreciate M-REITs as a form of long-term investment consistent with global perception (Newell, 2012) as the REIT market develops in Malaysia.

5.1.2 M-REITs, Stock Markets and Global REITs

Next, we move on to the correlations of M-REIT returns with domestic stock market and global equity and REIT markets. The results from the correlation analysis are reported in Table 5.

Table 5 about here

M-REIT returns are correlated significantly and positively with all, except for two (i.e. S&P 500 and U.S. REITs indices), of the equity and REIT markets indices. Under the

whole period, indices related to domestic stock market and local property sector recorded the strongest correlation at about 0.34. Among the significant global REIT indices, M-REIT returns have the highest correlation with S-REIT at 0.17 and lowest with HK-REIT at 0.10.

Shifting the attention to the results of subsample periods, it is noted that there is a general pattern of increasing correlations over time. For example, the correlation coefficients with FMB-KLCI increase from 0.34 during pre-GFC to 0.38 in post-GFC. In addition, the correlation coefficients with global REIT indices also improve markedly (e.g. S-REIT: 0.15 to 0.29 and HK-REIT: 0.05 to 0.18). More notably, M-REIT returns show significant correlation with both S&P 500 and US-REIT during the post-GFC subperiod.

Generally, similar results are noted for both conventional and Islamic M-REIT returns. However, the correlation coefficients are lower for Islamic M-REITs. There is also another notable difference where conventional M-REITs are slightly more correlated with FBM-KLCI than FBMKLPRP while Islamic M-REITs the other way round.

Overall, Hypothesis 3 is supported where M-REIT returns are correlated significantly and positively with domestic stock markets. It is also identified that conventional M-REITs are more closely associated with the general stock market while Islamic M-REITs with the property sector market. Meanwhile, Hypothesis 4 is partially rejected whereby S&P 500 and the US-REIT show no significant correlation with M-REIT returns in the whole period but turn significant in the post-GFC subsample period. The conjecture that S-REITs have the highest correlation with M-REITs among the global indices is supported (Hypothesis 5).

The results provide a couple of important insights on the M-REIT market. One, M-REITs are more closely correlated with local stock market than global equity and REIT markets. Two, M-REITs become more integrated with global markets in recent time as evidenced by increasing significance in correlations between the two in the post-GFC subperiod.

5.2 Regression Analysis

The sensitivity of interest-rate changes, stock market returns and regional REIT markets returns on M-REIT returns are investigated through regression analysis of a multifactor model which is shown in equation 1. While the selection of the general factors is based on the extant literature, the choice of the proxies for these factors is made based on the indication from the results of correlation analysis.

For stock market proxy, both FBM-KLCI and FBMKLPRP are included in the model. Meanwhile, the interest-rate factor is represented by 3-month KLIBOR, 5-year IRS and 10-year MGS. The use of three interest-rate factors is to cover the full spectrum of the tenure from short- to long-term. Lastly, the global REIT markets are proxied by those REIT indices which show significant correlations with M-REIT returns for the whole period namely S-REIT, HK-REIT, J-REIT and A-REIT. Table 6 shows the correlations among the selected proxies for the factors.

Table 6 about here

All correlations, except for the one between the returns of FBM-KLCI and FBMKLPRP, are below 0.50. Hence there is little risk of multicollinearity problem. As a robustness check, we have excluded FBMKLPRP from the equation but the results are qualitatively unaffected except for a drop in the coefficient of determination, R^2. Hence we decided to retain both of these proxies in the model for better explanatory power. The results are tabulated in Table 7.

Table 7 about here

Panel A of Table 7 shows the results for the overall M-REITs while Panel B and Panel C present the results for conventional and Islamic M-REITs respectively. The discussion shall first focus on Panel A. In general, the full model (Model 1) explains about 14% of the variability in M-REIT returns which is comparable to the results reported for U.S. REIT returns in Allen et al. (2000) (i.e. 21%) and Mueller and Pauley (1995) (i.e. 9%). However, the goodness-of-fit reported here is considered low when compared against those obtained by He et al. (2003) (i.e. 40%) and Clayton and MacKinnon (2003) (i.e. 65%) who also employed similar set of factors for U.S. REITs.[2]

Upon dropping other factors, the single-type factor-specific models (i.e. Models 2-4) remain highly significant at 1% level of significance. It is observed that Model 2 yields the highest R^2 at 13% followed by Model 4 (4%) and Model 3 (<1%) which implies that the stock market factor explains the most of M-REIT returns variability. This finding is supportive of Glascock et al.'s (2000) conclusion that *'REITs behave more like stocks and less like bonds'*. Based on the results reported under Model 1 for whole period, every 1% increase (decrease) in FBM-KLCI, M-REIT returns will increase (decrease) by approximately 0.19%. This sensitivity is slightly larger than the sector-specific beta (i.e. FBMKLPRP) reported at 0.14. As a result, Hypothesis 6 is supported where M-REIT returns are shown to be strongly driven by stock market returns but it must be noted that sensitivity to property sector index is weaker than the sensitivity to the general stock market index.

From the subperiod analysis of Model 2, it is found that that the estimated coefficients for stock market proxies are not stable over time but the general pattern remains. For example, the sensitivity to FBM-KLCI is always larger than the sensitivity to FBMKLPRP. In fact, the gap between the two betas increased from 0.09 in pre-GFC to 0.14 in post-GFC which may indicate the growing importance of general market movements and/or diminishing impact of property-sector index to M-REIT returns. Hence, the conclusion for Hypothesis 6 remains robust over time.

Similar to Mueller and Pauley (1995), the sign of the estimated beta for interest-rate proxies are mixed for both the full model (Model 1) and factor-specific model (Model 3) (i.e. negative for both short- and long-term rates but positive for medium-term rate). However,

[2] Allen et al. (2000) and He et al. (2003) used both stock market and interest-rate factors as regressors for the period of 1993 to 1997 and 1972 to 1998 while Mueller and Pauley (1995) employed only interest-rate factors with varying tenure as regressors for a study period from 1972 to 1993. On top of stock market and interest-rate factors, Clayton and MacKinnon (2003) adopted an additional factor namely real estate returns in their model for the period of 1979 to 1998.

only the short-term interest-rate (i.e. 3-month KLIBOR) beta is significant under Model 1. The coefficient of -1.57 implies that for every one-percentage point increase (decrease) in 3-month KLIBOR, M-REIT returns will drop (rise) by 1.57%. While it appears that the impact of change in KLIBOR is much larger than all the factors combined, this estimated beta is also accompanied by a correspondingly large standard error[3] (i.e. 0.51) hence the need of caution when comparing the estimated coefficients.

Looking at Model 3, none of the interest-rate proxies are significant in the pre-GFC subperiod and 3-month KLIBOR became the only significant interest-rate proxy in the GFC subperiod but promptly lost its significance post-GFC. During post-GFC, there is some contradiction between Model 1 and Model 3 with regards to interest-rate proxies. While 3-month KLIBOR remains the only significant interest-rate proxy under Model 1, it became insignificant under Model 3 but both the both medium- and long-term interest rates became significant. Therefore something could be amiss.

Referring back to the correlation results, M-REIT returns became insignificantly correlated with any of the short-term interest rate proxies post-GFC but correlated significantly (albeit weakly) with some of the medium- and long-term interest rate proxies (i.e. 10- and 5-year MGS and 5-year IRS). Hence we suggest that the significant impact of both medium- and long-term interest rate proxies may have been encapsulated into short-term interest-rate proxy and/or other factors under Model 1. In order to infer which of the interest-rate proxies is important in post-GFC era, we should rely on the results under Model 3 which indicates 10-year MGS to be the most influential of these three proxies. This is a more plausible interpretation as it is corroborated by the finding from the correlation analysis.

Nevertheless, interest-rate factor has only diminutive influence on M-REIT returns as evidenced by both the weak result reported in the correlation analysis as well as the incredibly low R^2 (i.e. <1%) for the interest-rate factor model revealed under the regression analysis (i.e. Model 3). Therefore Hypothesis 7 on the importance of interest-rate in driving M-REIT returns is only partially supported.

Moving on, regional REITs seem to play an immaterial role in influencing M-REIT returns over the whole sample period as none of its proxies shows any significance in the full model. Even though S-REIT, J-REIT and A-REIT returns are significant under the factor-specific model (i.e. Model 4), their significance could have been subsumed by the stock market factor in the full model (i.e. Model 1). For the subperiod analysis, none of the regional REIT returns are significant under the full model until post-GFC when both S-REIT and J-REIT returns enter the equation significantly. Shifting the attention from Model 1 to Model 4, it is noted that the explanatory powers (i.e. R^2) of regional REIT returns increased from 3.6% pre-GFC to 6.5% during GFC and slightly over 10% post-GFC. This exponential increment supports the notion that as M-REIT market matures, it becomes more integrated with regional REIT markets. However, for the sample period, Hypothesis 8 on the significance of regional REIT returns in driving M-REIT returns is rejected.

[3] Standard errors of estimates are not reported in all the tables for brevity of space. These results are available upon request.

Next, we move on to compare and contrast the results between conventional and Islamic M-REITs. Expectedly, Panel B which reports results on conventional M-REITs show largely similar results as Panel A due to the large constituents of conventional M-REITs in the local REIT market (i.e. 14 out of 17). On the other hand, Islamic M-REITs displayed a couple of anomalies, as shown in Panel C, when compared with the overall M-REITs.

Firstly, the multifactor models employed have unremarkably low explanatory power on the returns of Islamic M-REITs with below 10% for the whole period as well as all the subsample periods. It recorded the lowest R^2 at 6.4% in recent time during the post-GFC subperiod. In addition, pure interest-rate factor model (Model 3) is not significant at all in any of the subperiods in explaining the returns of Islamic M-REITs. Secondly, both the proxies for stock market factor (i.e. FBM-KLCI and FBMKLPRP) were initially significant during the pre-GFC and GFC subperiods but their significance diminished in the post-GFC subperiod. This finding is corroborated with decreasing correlations between Islamic M-REIT returns and stock market proxies reported earlier. From this result, we suggest that Islamic M-REITs may potentially provide portfolio diversification benefit to equity funds.

Our finding also supports the argument presented by Newell and Osmadi (2009) that Islamic M-REITs are different from conventional M-REITs as they exhibited resilient characteristics in the face of crisis. However, there is a real concern that the results on Islamic M-REITs, especially during post-GFC, may be skewed towards the characteristics of KLCC REIT as it consists of two third of its composition. Upon exclusion of KLCC REIT from the Islamic M-REIT index, results remain largely unperturbed.

6.0 Conclusion

REIT has been a popular instrument among investors and property developers alike since its inception. For investors, REIT represents a new class of investment alternative, on top of the conventional instruments such as stocks and bonds, which are likely to enhance diversification benefits in a multi-asset portfolio. In particular to retail investors, REIT provides an opportunity for the ownership of high quality commercial real estate which are traditionally illiquid. In the case of property developers, REIT offers an efficient fund-raising channel for better allocation of resources in this capital intensive industry. While having the flexibility to retain significant ownership, property developers are also able to generate additional and sustainable fee income in the form of management fee from their sponsored REITs.

In the case of M-REITs, the market has grown by close to 20 times in less than a decade which is a testament to the popularity and feasibility of REITs to thrive in Malaysia. In this paper, we have documented the development of REITs in Malaysia since its inception in August 2005 to December 2013, in which the market has been acknowledged as one of the Asian leaders (HK-FSDC, 2013). We have also examined the dynamic inter-relationships between M-REITs and stocks, interest rates and global markets. In addition, we have

identified the key drivers in explaining M-REIT returns over the sample period. The summary of our results is shown in Table 8.

Table 8 about here

The results offer several important implications to various stakeholders such as investors, policymakers and researchers. For the investors, it must be noted that M-REITs conform more to the characteristics of stocks rather than bonds hence they are not purely yield-play instruments like bonds which are mainly driven by changes in interest rates. The most, M-REITs may be categorised as dividend-type stocks due to their high-payout nature. As for the policymakers, the lack of integration between M-REIT and the regional REIT markets is a cause for concern if we wish to continue keeping the growth momentum of the REIT market in Malaysia.

Policies and guidelines should be drawn with a clear objective to synchronise the best practices among the global and regional REIT markets in order to increase markets integration and in turn boost M-REITs' appeal among international investors. Lastly, the findings of this paper show that the characteristics of M-REITs are unique and there are some fundamental differences between conventional and Islamic REITs (e.g. conventional REITs are more sensitive to changes in long-term yields as compared to Islamic REITs which are more responsive to changes in medium-term yields). Researchers should take note that most findings reported in the extant literature are based on conventional REITs data hence impeding generalisation to Islamic REITs to a limited extent.

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Appendix 1: M-REIT Index Construction

The following *LasPeyres* index, which is an established formula used by most indexing entities, is employed:

$$Index_1 = \frac{\sum_i P_{i,1} X Q_{i,0}}{\sum_i P_{i,0} X Q_{i,0}}$$

P is the individual REIT unit price and *Q* signifies its outstanding units while subscripts *i* represent the individual M-REIT and *0* and *1* stand for period 0 and 1 respectively. The formula is usually presented in its modified form as follows:

$$Index\ Level_1 = \frac{\sum_i P_{i,1} X Q_{i,1}}{Divisor_1}$$

The divisor is adjusted whenever there is a change in the outstanding units of the respective M-REITs following any corporate exercise. Besides the ordinary equity-fundraising exercise, many M-REITs (e.g. Axis REIT, Sunway REIT, IGB REIT) also create new units to their respective REIT managers as settlement of management fees hence impacting the divisor rather frequently. In addition, Axis REIT also initiated an income-distribution-reinvestment plan (IDRP) in 2011 hence increasing the instances for revision of the divisor. We meticulously account for all of these activities and adjust the divisor accordingly. The detailed procedures for adjusting of the divisor can be read from S&P Dow Jones Indices: Index Methodology (2012).

The composite M-REIT index comprises all M-REITs while the conventional index consists of 13 M-REITs with the balance four Islamic M-REITs as constituents of the Islamic index. It must be noted that Axis REIT was initially conceived as a conventional REIT until its conversion into Islamic REIT on January 1, 2008 hence its membership was accordingly transferred from conventional index to Islamic index after its conversion date.

Tables & Figures

Figure 1: Asian REIT Markets and Their Maiden REITs

Japan is the first country in Asia which introduced REIT in its modern form in 2001. Prior to 2005, Malaysian REIT market was technically non-existent even though there were some listed property trusts on the Malaysian stock exchange, Bursa Malaysia, since 1989. China and Thailand are the two latest countries which added listed REITs to their respective stock markets in 2014.

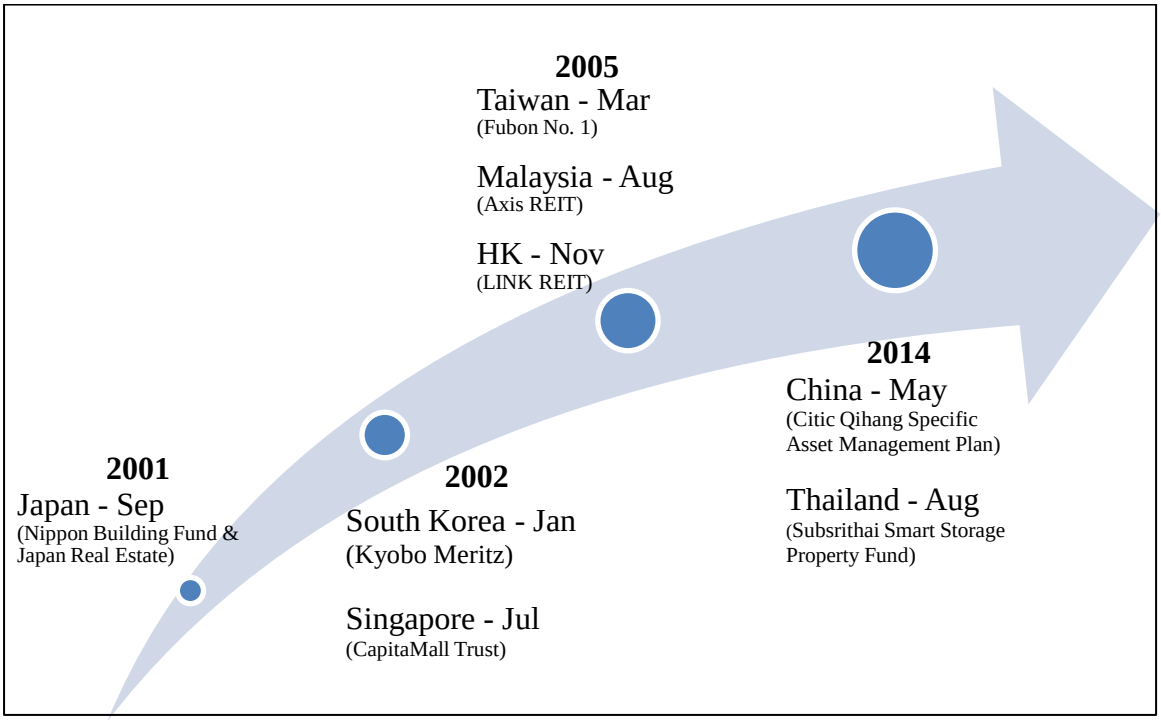

Figure 2: A Typical Malaysian-REIT Structure

Legally, REIT exists in the form of unit trust in Malaysia. A typical M-REIT is consists of a Trustee who holds the units on behalf of the unitholders, a REIT Manager who acts as the asset manager, and a Property Manager who mainly acts as the manager of the portfolio of properties. Sponsor is another key component of M-REIT as it is usually the largest unitholder of the REIT and shareholder the REIT Manager. Sponsor also viewed provider of pipeline assets to the REIT. In addition to the main components, an Islamic REIT in Malaysia must maintain a Shariah Advisor who comprises learned scholars in Shariah for the purpose of dispensing Shariah-related advice to the REIT Manager on Islamic asset management principles. In exchange for the services rendered, all parties are entitled to a set of prescribed fees as approved by the unitholders.

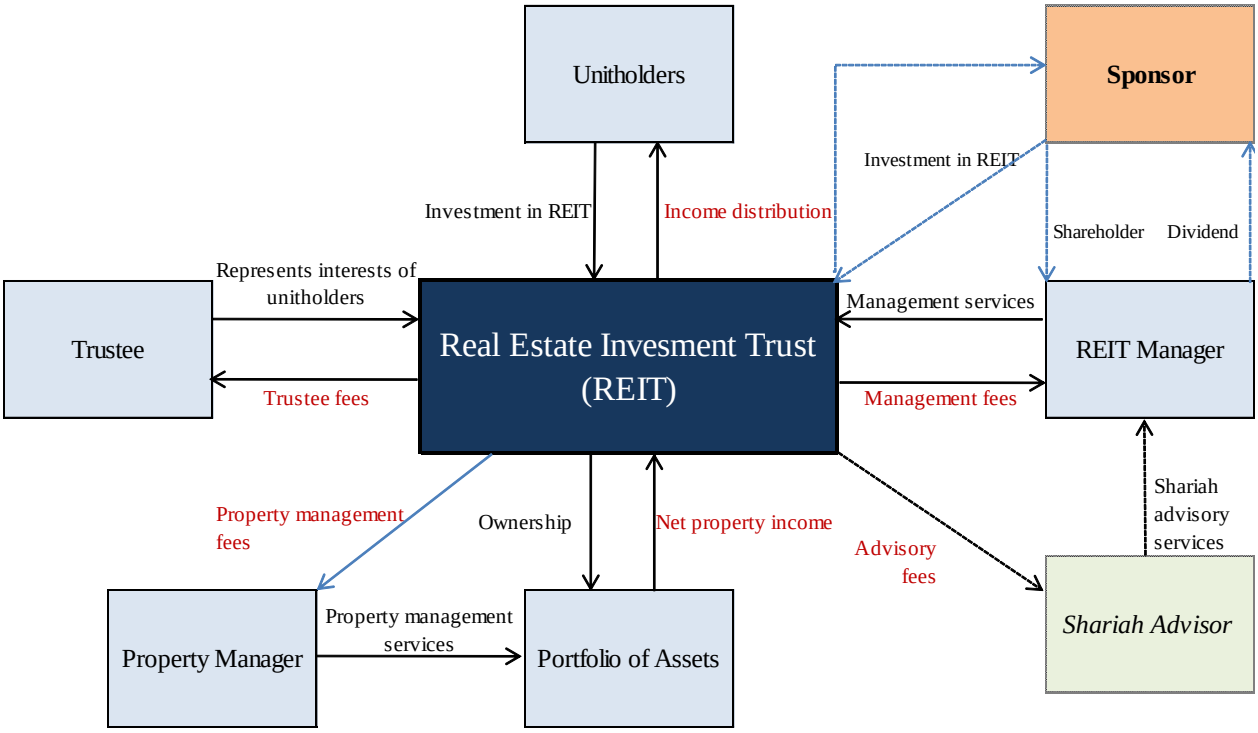

Figure 3: Total Market Capitalisation of M-REITs: As at 31 December of 2005 – 2013

The bars show total M-REIT market capitalisation measured on the last trading day of a calendar year. The M-REIT market has grown by close to 20 times in a relatively short span of less than one decade. As can be seen, the M-REIT market experienced robust growth in the post-GFC era of 2010 onwards. In 2010, two large REITs namely Sunway REIT and CMMT were listed followed by Pavilion REIT in 2011 and IGB REIT in 2012. KLCC REIT, which came in the form of stapled-securities, was the latest addition to the market in 2013.

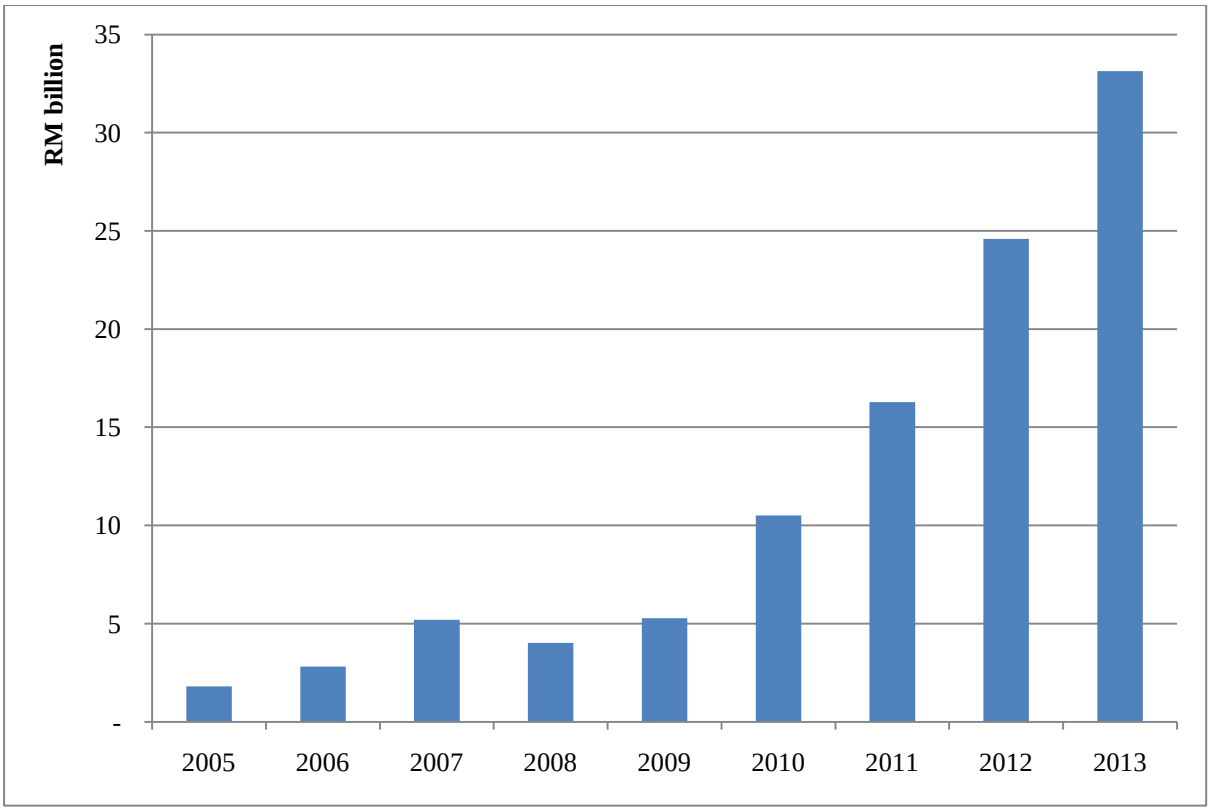

Table 1: Listed M-REITs as at 31 December 2013 and Performance Metrics

There are 17 listed Malaysian REITs (M-REITs) as at 31 December 2013 and they are stated in Column 1 of the table. Column 2 shows the listing date of the respective M-REITs with their listing prices and initial total market capitalisations presented in Column 3 and Column 4. The next two columns show the closing prices of the M-REITs on the first trading day and their respective returns. Meanwhile, Column 7 presents the closing prices of the M-REITs as at 31 December 2013 and followed by capital returns in the next six columns. The capital returns are calculated based on the differences in prices as at 31 December and the respective time horizons (i.e. since IPO, 1-year, 2-year and so on until 5-year).

M-REITs	IPO date	IPO Price (RM)	Debut Market Cap (RM'mil)	First-day closing (RM)	First-day returns	2013 Closing price (RM)	Capital Returns					
							Since IPO	1-yr	2-yr	3-yr	4-yr	5-yr
Amanah Hartanah PNB (AHP)*	28-Dec-90	-	NA	-	-	1.13	NA	2.7%	7.3%	12.2%	21.1%	41.0%
Axis REIT	03-Aug-05	1.250	257	1.680	29.6%	2.93	85.2%	-6.6%	11.2%	21.2%	41.7%	96.2%
YTL Hospitality REIT	16-Dec-05	0.960	998	1.030	7.0%	1.01	5.1%	-9.4%	13.2%	13.8%	16.7%	33.2%
UOA REIT	30-Dec-05	1.150	262	1.180	2.6%	1.45	23.2%	5.7%	3.5%	-3.4%	12.5%	30.4%
Tower REIT	12-Apr-06	1.070	254	1.050	-1.9%	1.50	33.8%	2.7%	15.1%	20.7%	27.4%	53.3%
Al-Aqar Healthcare REIT	10-Aug-06	0.950	323	0.985	3.6%	1.33	33.6%	3.1%	14.5%	17.2%	30.0%	34.7%
Hektar REIT	04-Dec-06	1.017	336	1.007	-1.0%	1.50	38.9%	2.7%	16.0%	13.8%	32.4%	69.8%
AmFirst REIT	21-Dec-06	0.903	429	0.804	-11.6%	1.00	10.2%	-5.8%	-4.6%	-7.1%	6.3%	32.6%
Quill Capita Trust	08-Jan-07	0.840	195	0.980	15.4%	1.18	34.0%	-4.1%	8.9%	6.1%	8.9%	24.9%
Al-Hadharah Boustead REIT	08-Feb-07	0.990	396	1.120	12.3%	2.07	73.8%	12.3%	29.6%	34.9%	46.5%	73.8%
AmanahRaya REIT	26-Feb-07	0.895	165	0.980	9.1%	1.00	11.1%	8.3%	10.0%	7.3%	15.7%	31.5%
Atrium REIT	02-Apr-07	1.000	122	0.935	-6.7%	1.30	26.2%	0.8%	19.5%	21.4%	34.6%	75.7%
Sunway REIT	08-Jul-10	0.900	2,412	0.885	-1.7%	1.24	32.0%	-22.3%	-0.8%	18.6%	NA	NA
CapitaMalls Malaysia Trust	16-Jul-10	1.000	1,400	0.980	-2.0%	1.40	33.6%	-25.1%	-2.8%	23.2%	NA	NA
Pavilion REIT	07-Dec-11	0.900	2,700	1.020	12.5%	1.28	35.2%	-8.2%	16.1%	NA	NA	NA
IGB REIT	21-Sep-12	1.250	4,250	1.390	10.6%	1.19	-4.9%	-11.1%	NA	NA	NA	NA
KLCC REIT	09-May-13	7.250	13,086	7.680	5.8%	5.85	-21.5%	NA	NA	NA	NA	NA
Average Returns					**5.2%**		**28.1%**	**-3.4%**	**10%**	**14%**	**24%**	**50%**

**AHP was re-classed from property trust to REIT in August 2005*

Figure 4: M-REIT Index and FTSE-Bursa Malaysia Kuala Lumpur Composite Index: 2 August 2005 to 31 December 2013

The chart shows the movements of the constructed M-REIT Index viz-a-viz FBM-KLCI for the whole period. The graph shows that M-REITs track closely the movements of the domestic equity market in most of the whole period except for 2013 when there was sign of divergence between the two indices.

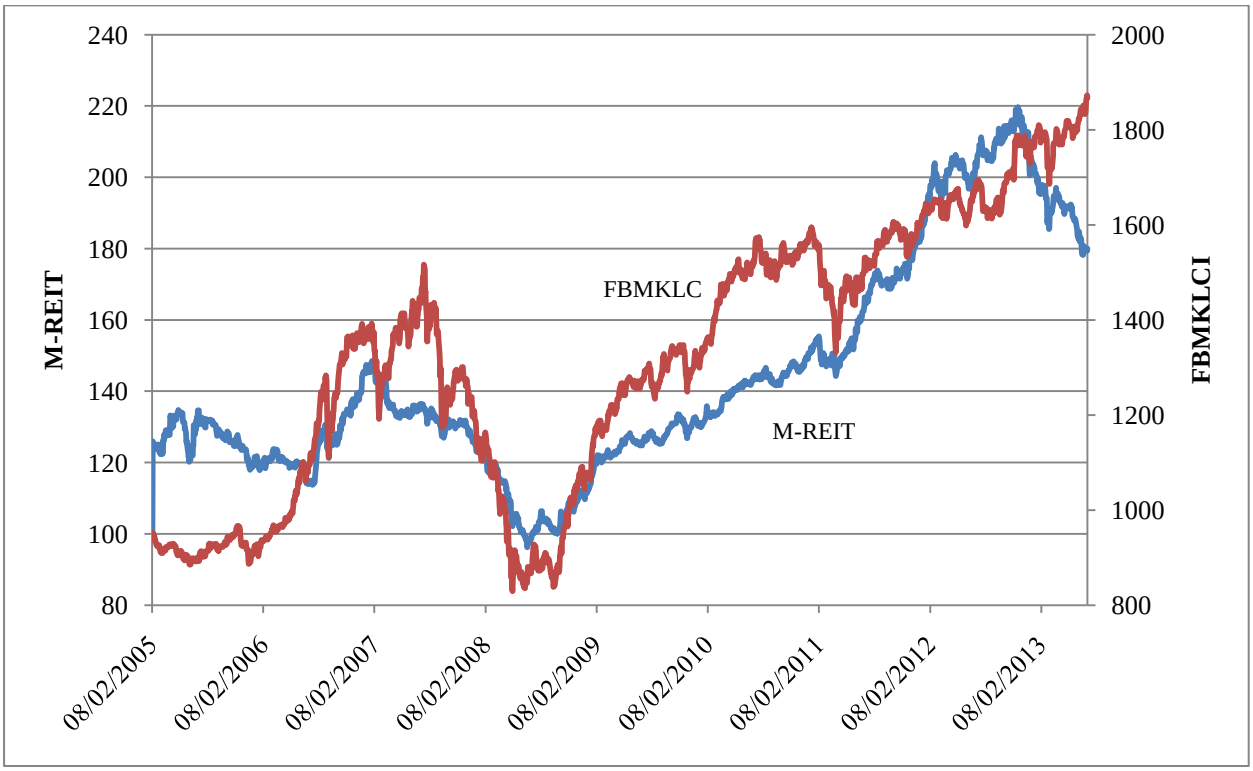

Figure 5: M-REIT Index and 10-year Malaysian Government Securities (MGS): 2 August 2005 to 31 December 2013

The graph shows the movements of the constructed M-REIT Index viz-a-viz 10-year MGS yield. There is a general pattern of mirror image between the two indices especially in the post-GFC subperiod of 2010-2013.

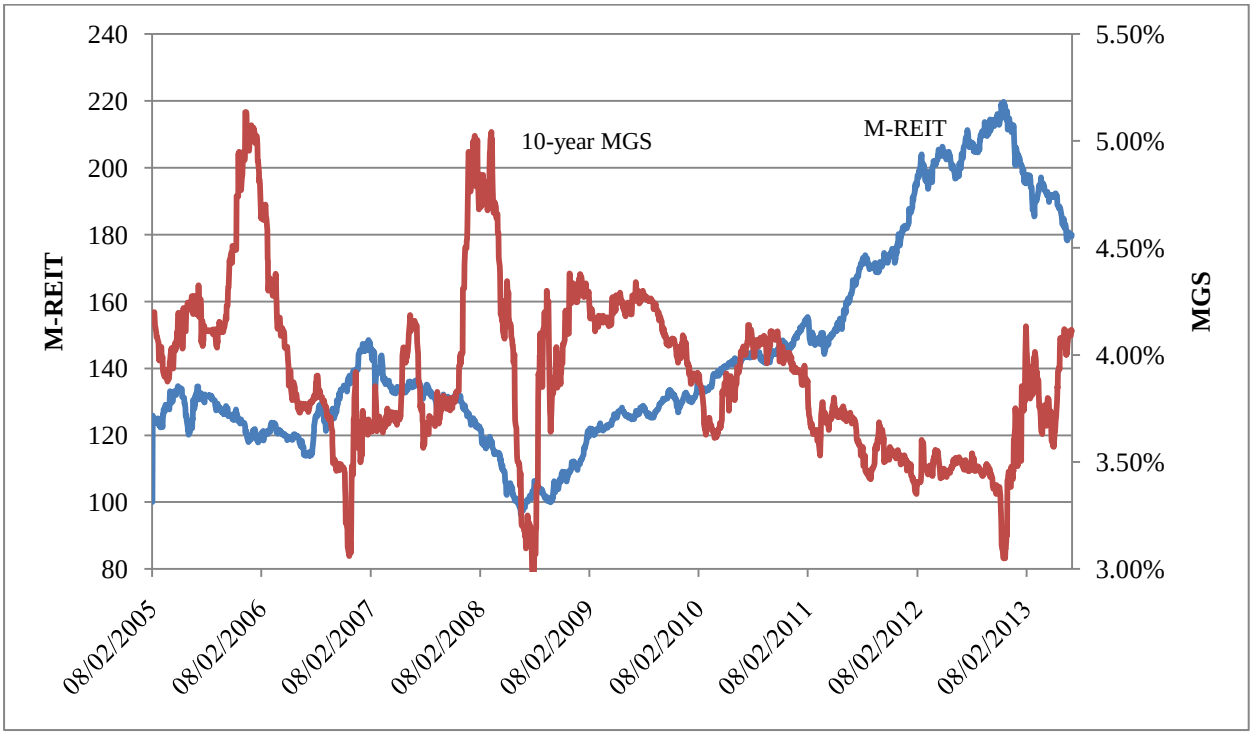

Table 2: Characteristics Comparison between of M-REIT Market and Key REIT Markets

Characteristics	Malaysia	Singapore	Japan	Hong Kong	U.S.	Australia
Legal structure	Unit Trust	Trust	Trust or corporate (in practice, corporate type)	Trust	Corporate	Unit Trust
Manager	External	External or internal	External	External or internal	External or internal	External or internal
Asset level	At least 50% of the total asset value must be invested in real estate and/or single purpose companies investing into real estate at all times.	At least 75% of deposited property should be invested in income-producing real estate.	At least 50% of total assets are invested in qualified assets.	Primarily in real estate that generate recurrent rental income.	At least 75% of total assets must be comprised of real estates, government securities or cash items.	No restriction except for public unit trust which must only carry on an eligible investment business.
Property development activities	Not more than 10% of total asset value.	Not allowed unless intends to hold upon completion and subject to 10% cap of deposited property.	Restricted by income-producing criterion.	Prohibited.	Allowed.	Allowed
Overseas investments/ geographical restrictions	No restriction but subject to regulatory approvals.	No restriction.	No restriction.	No restriction.	No restriction.	No restriction.
Distribution and tax exemption	Provided that 90% of total income is distributed, REIT enjoys tax transparency	Provided that 90% of taxable income is distributed, REIT enjoys tax transparency status.	Provided that 90% of distributable profit is distributed, REIT enjoys tax	Must distribute at least 90% of audited annual net income. Tax exempted.	At least 90% of ordinary taxable income must be distributed. Tax exempted.	No minimum distribution limit but in order to be fully tax transparent, REIT distributes all the trust
Leverage Cap	50% of total asset value.	35% of deposited property. Up to 60% for rated REITs.	No cap.	45% of total gross asset value.	No cap.	No cap.
Top 3 REITs as at Aug 2013	IGB REIT Pavilion REIT SunwayREIT	CapitaMall Trust Ascendas REIT CapitaCommercial Trust	Nippon Building Fund Japan REIT Japan Retain Fund Investment	Link REIT Hui Xian REIT Champion REIT	Simon Property American Tower Public Storage	Westfield Group Westfield Retail Trust Stockland
% of global REIT market as at Aug 2013	0.70%*	4.23%	5.98%	2.22%	57.68%	8.00%

Sources: European Public Real Estate Global REIT Survey 2013 and Asia Pacific REITs: A Comparative Regulatory and Tax Study, APREA, June 2014

*Excluded KLCC REIT

Figure 6: M-REIT Index and Major REIT Indices: 2 August 2005 to 31 December 2013

The chart shows the movements of the constructed M-REIT Index viz-a-viz the indices of major REIT markets such as Singapore (S-REIT), Hong Kong (HK-REIT), Japan (J-REIT), Australia (A-REIT) and the United States of America (US-REIT). In the whole period, M-REIT market appears to be the second-best performing REIT market behind HK-REIT market.

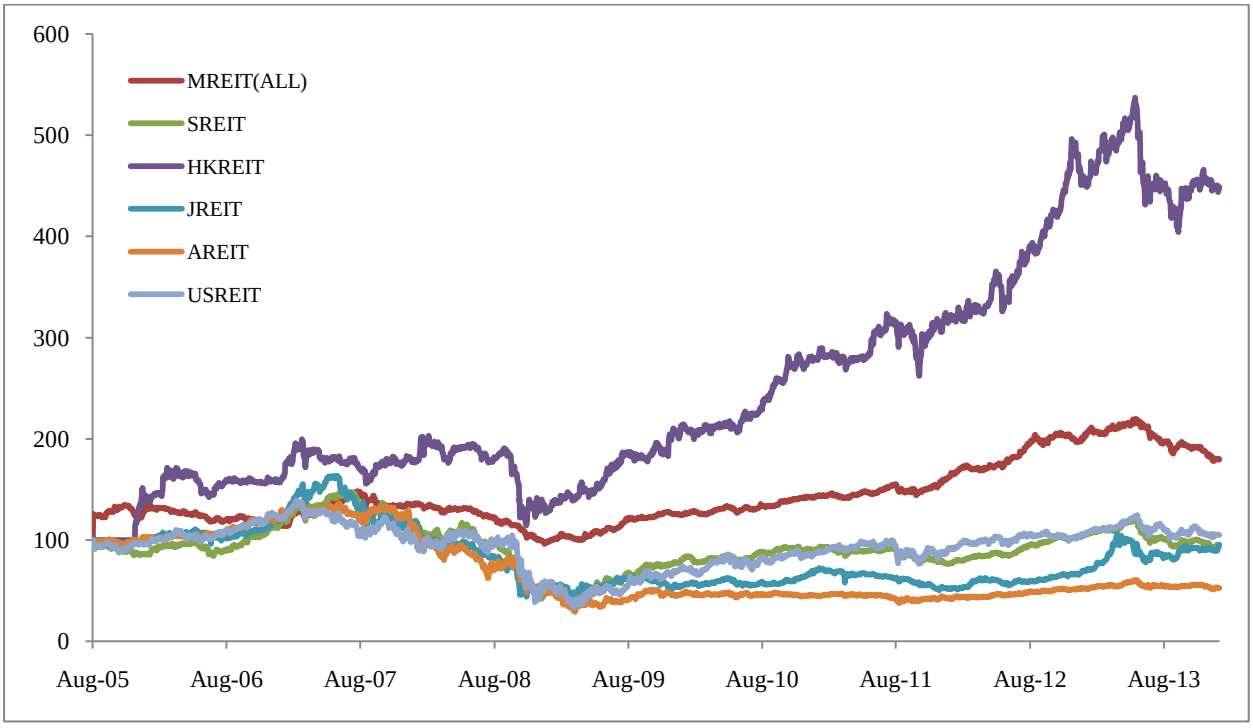

Figure 7: S&P500 Volatility Index: 2 August 2005 to 31 December 2013

The chart shows the movements of the S&P 500 Volatility Index (VIX) for the whole period. The VIX is generally used to measure the risk sentiment of market participants. A high level of VIX indicates market jittery and is often associated with risk-off sentiment while the opposite indicates market stability and risk-on sentiment. The GFC subperiod is identified as between January 1, 2008 to December 31, 2009 due to the peak of VIX in the centre of this period.

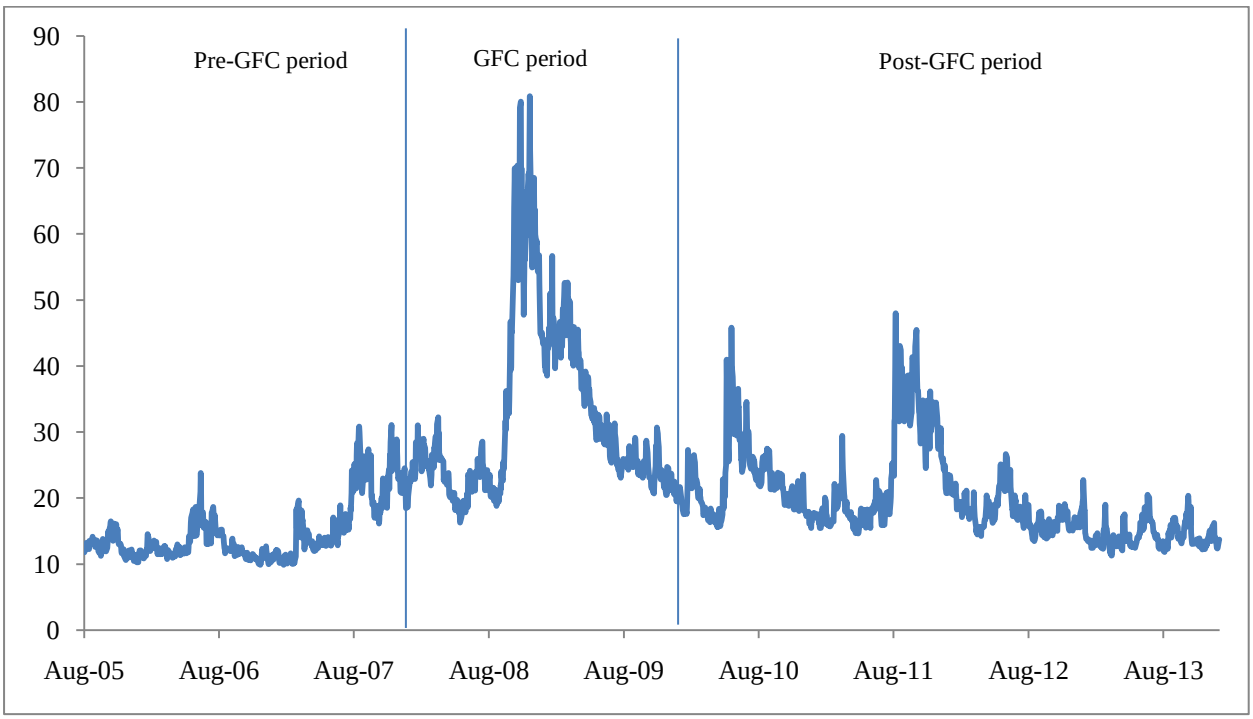

Table 3: Summary Statistics of Key Variables

Table below shows the descriptive statistics of the key variables employed in this study. The equity indices used are M-REIT is the constructed Malaysian REIT index, FBM-KLCI is FTSE Bursa Malaysia Kuala Lumpur Composite Index which is consisted of 30 large Malaysian stocks and it is often referred to as the key indicator of the performance of the Malaysian stock market, FBMKLPRP is the FTSE Bursa Malaysia Kuala Lumpur Property Stocks Index, S&P 500 is the Standard and Poor's global top 500 stocks, meanwhile the global REIT indices used are from Singapore (S-REIT), Hong Kong (HK-REIT), Japan (J-REIT), Australia (A-REIT) and the United States of America (US-REIT). The equity and REIT indices are measured based on daily log-difference which yield daily returns. The long term (>1year) interest rate proxies used are high- and low-grade private debt securities (AAA and BBB), Malaysian government securities (MGS) and interest rate swap (IRS) while the short term interest rate proxies are Kuala Lumpur Interbank Borrowing Rate (KLIBOR). Interest rate series are measured based on first-difference. Lastly, Term structure is defined as the difference between 10-year MGS and 3-month KLIBOR and Credit Spread as difference between 10-year BBB and 10-year MGS.

Desciptive Statistics	Daily Returns									Daily Change			
	M-REIT	FBM-KLCI	FBMKLPRP	S&P500	S-REIT	HK-REIT	J-REIT	A-REIT	US-REIT	10-yr AAA	5-yr AAA	10-yr BBB	5-yr BBB
Mean	0.0268%	0.0312%	0.0340%	0.0180%	-0.0020%	0.0684%	-0.0024%	-0.0293%	0.0023%	-0.0004%	-0.0001%	0.0006%	0.0004%
Median	0.0000%	0.0218%	0.0000%	0.0452%	0.0134%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%
Maximum	23.03%	4.26%	6.21%	10.96%	18.92%	13.60%	10.64%	8.05%	16.88%	0.65%	0.20%	1.23%	0.75%
Minimum	-4.81%	-9.98%	-9.67%	-9.47%	-16.56%	-13.57%	-12.78%	-12.13%	-21.53%	-0.63%	-0.17%	-1.43%	-0.89%
Std. Dev.	0.0081	0.0078	0.0110	0.0135	0.0144	0.0141	0.0164	0.0159	0.0246	0.0003	0.0002	0.0006	0.0004
Skewness	10.46	-1.29	-0.66	-0.32	0.28	0.00	-0.37	-0.73	-0.13	0.07	1.20	-1.77	-2.42
Kurtosis	305.61	19.33	11.99	13.38	29.80	18.32	11.47	10.42	14.66	321.69	57.33	225.22	225.84
Jarque-Bera (p-value)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Desciptive Statistics	Daily Change											
	10-yr MGS	5-yr MGS	10-yr IRS	7-yr IRS	5-yr IRS	3-yr IRS	2-yr IRS	6M KLIBOR	3M KLIBOR	1M KLIBOR	Term Structure	Credit Spread
Mean	0.0000%	0.0001%	0.0000%	-0.0001%	0.0000%	0.0000%	0.0001%	0.0002%	0.0002%	0.0001%	0.7349%	9.2692%
Median	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.5720%	9.4000%
Maximum	0.40%	1.02%	0.46%	0.30%	0.31%	0.28%	0.32%	0.27%	0.25%	0.22%	2.26%	10.73%
Minimum	-0.28%	-0.90%	-0.46%	-0.40%	-0.35%	-0.36%	-0.44%	-0.62%	-0.64%	-0.69%	-0.54%	7.27%
Std. Dev.	0.0004	0.0005	0.0006	0.0005	0.0004	0.0004	0.0003	0.0002	0.0002	0.0002	0.0063	0.0081
Skewness	1.12	1.43	-0.29	-0.27	-0.42	-0.70	-1.21	-18.13	-19.15	-18.89	0.82	-0.37
Kurtosis	15.02	97.39	13.06	10.81	12.45	16.53	34.63	590.12	619.19	614.77	2.85	1.89
Jarque-Bera (p-value)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table 4: Correlations between M-REIT Index and Interest Rates

The results on the correlation analysis between M-REIT indices and interest rate proxies are shown below. Three panels are presented vertically with Panel A shows the results for composite M-REIT index, Panel B on conventional M-REIT Index while Panel C on Islamic M-REIT Index. Bolded figures indicate significant correlations and *, ** and *** represent significance levels of 10%, 5% and 1% respectively. There are four columns, which present the results for the whole and three subsample periods, under each panel. The results generally show a weak correlation between M-REIT and interest rates.

	Panel A - M-REIT (All)				Panel B - M-REIT (Conventional)				Panel C - M-REIT (Islamic)			
	Whole period	Pre-GFC	GFC	Post-GFC	Whole period	Pre-GFC	GFC	Post-GFC	Whole period	Pre-GFC	GFC	Post-GFC
	Aug2005-Dec2013	Aug2005-Dec2007	Jan2008-Dec2009	Jan2010-Dec2013	Aug2005-Dec2013	Aug2005-Dec2007	Jan2008-Dec2009	Jan2010-Dec2013	Aug2005-Dec2013	Aug2005-Dec2007	Jan2008-Dec2009	Jan2010-Dec2013
LT (10y)												
MGS	**-0.0396***	-0.0569	0.0248	**-0.0906*****	**-0.0504****	-0.0639	0.0110	**-0.1058*****	**0.0150**	0.0413	0.0334	-0.0245
IRS	-0.0176	-0.0336	-0.0374	0.0253	-0.0199	-0.0341	-0.0523	0.0317	-0.0046	-0.0446	0.0172	-0.0108
PDS - AAA	-0.0183	-0.0025	-0.0493	-0.0468	-0.0208	-0.0051	-0.0445	**-0.0579***	-0.0040	0.0753	-0.0326	-0.0141
PDS-BBB	0.0095	0.0176	0.0257	-0.0254	-0.0022	0.0181	-0.0120	-0.0207	**0.0466****	0.0685	**0.0761***	-0.0185
MT (5y)												
MGS	0.0312	-0.0020	0.0677	**0.0746****	0.0201	0.0001	0.0350	0.0495	**0.0653*****	-0.0768	**0.1312*****	**0.0671****
IRS	0.0197	-0.0223	0.0507	**0.0586****	0.0170	-0.0207	0.0238	**0.0727****	0.0236	-0.0393	**0.0789***	-0.0164
PDS - AAA	-0.0056	0.0070	-0.0379	0.0124	-0.0087	0.0029	-0.0309	-0.0069	0.0089	0.0957*	-0.0375	0.0303
PDS-BBB	0.0287	0.0450	0.0400	-0.0208	0.0168	0.0468	-0.0003	-0.0166	**0.0662*****	0.0924*	**0.0904****	-0.0102
ST(<1y)												
KLIB1M	**-0.0434****	-0.0540	**-0.0763***	-0.0282	**-0.0442****	-0.0525	**-0.0828***	-0.0185	-0.0231	0.0686	-0.0336	-0.0345
KLIB3M	**-0.0478****	-0.0600	**-0.0772***	-0.0412	**-0.0497****	-0.0583	**-0.0826***	-0.0412	-0.0227	0.0343	-0.0365	-0.0239
KLIB6M	**-0.0510****	**-0.0726***	**-0.0785***	-0.0299	**-0.0517****	**-0.0714***	**-0.0839***	-0.0223	-0.0263	0.0014	-0.0376	-0.0331
Term Structure	0.0179	0.0214	**0.1003****	-0.0125	0.0169	0.0220	**0.1012****	-0.0186	0.0116	0.0176	0.0546	0.0051
Credit Spread	0.0074	-0.0071	0.0559	0.0338	0.0075	-0.0086	0.0292	0.0363	0.0126	-0.0463	0.0612	0.0197

Table 5: Correlations between M-REITs, Stock Markets and Global REITs

The table shows the results of correlation analysis between M-REIT indices and equity and global REIT indices. Three panels are presented vertically with Panel A shows the results for composite M-REIT index, Panel B on conventional M-REIT Index while Panel C on Islamic M-REIT Index. Bolded figures indicate significant correlations and *, ** and *** represent significance levels of 10%, 5% and 1% respectively. There are four columns, which present the results for the whole and three subsample periods, under each panel. The results show a relatively strong correlation between M-REIT indices and equity and global REIT indices.

	Panel A - M-REIT (All)				Panel B - M-REIT (Conventional)				Panel C - M-REIT (Islamic)			
	Whole period Aug2005-Dec2013	Pre-GFC Aug2005-Dec2007	GFC Jan2008-Dec2009	Post-GFC Jan2010-Dec2013	Whole period Aug2005-Dec2013	Pre-GFC Aug2005-Dec2007	GFC Jan2008-Dec2009	Post-GFC Jan2010-Dec2013	Whole period Aug2005-Dec2013	Pre-GFC Aug2005-Dec2007	GFC Jan2008-Dec2009	Post-GFC Jan2010-Dec2013
FBMKLCI	**0.3394 *** **	**0.3382 *** **	**0.4101 *** **	**0.3823 *** **	**0.3411 *** **	**0.3492 *** **	**0.3860 *** **	**0.3793 *** **	**0.2390 *** **	**0.2311 *** **	**0.2826 *** **	**0.1897 *** **
FBMKLPRP	**0.3403 *** **	**0.3408 *** **	**0.3914 *** **	**0.3586 *** **	**0.3397 *** **	**0.3505 *** **	**0.3538 *** **	**0.3566 *** **	**0.2490 *** **	**0.2753 *** **	**0.2742 *** **	**0.2020 *** **
S&P500	*0.0123*	*-0.0007*	*-0.0170*	**0.0685 ** **	*0.0089*	*0.0077*	*-0.0211*	*0.0490*	*0.0243*	*-0.0451*	*0.0163*	**0.0693 ** **
S-REIT	**0.1717 *** **	**0.1540 *** **	**0.2195 *** **	**0.2866 *** **	**0.1679 *** **	**0.1601 *** **	0.2068 *** **	**0.2564 *** **	**0.1523 *** **	**0.1814 *** **	**0.1406 *** **	**0.2009 *** **
HK-REIT	**0.1039 *** **	**0.0499 *** **	**0.1494 *** **	**0.1808 *** **	**0.1141 *** **	**0.0620 *** **	0.1725 *** **	**0.1644 *** **	**0.0786 *** **	**0.0958* *** **	**0.0573 *** **	**0.1032 *** **
J-REIT	**0.1421 *** **	**0.1494 *** **	**0.1609 *** **	**0.1788 *** **	**0.1489 *** **	**0.1504 *** **	0.1722 *** **	**0.1810 *** **	**0.1043 *** **	**0.1598 *** **	**0.0821* *** **	**0.1017 *** **
A-REIT	**0.1345 *** **	**0.1370 *** **	**0.1797 *** **	**0.1789 *** **	**0.1443 *** **	**0.1421 *** **	0.1986 *** **	**0.1754 *** **	**0.0949 *** **	**0.1322 ** **	**0.0897 *** **	**0.0984 *** **
US-REIT	*0.0076*	*0.0022*	*-0.0217*	**0.0782 ** **	*0.0035*	*0.0120*	*-0.0278*	**0.0537 * **	*0.0216*	*-0.0540*	*0.0170*	**0.0813 *** **

Table 6: Correlations between Independent Variables

The independent variables are selected based on the results from the correlation analysis. Those variables which display reasonably strong correlations with M-REIT indices are selected to be used in the regression analysis. Generally, the selected independent variables are weakly correlated with each other except for FBMKLCI and FBMKLPRP. The results generally lessen the multicollinearity concern.

	FBM-KLCI	FBMKLPRP	3M KLIBOR	5-yr IRS	10-yr MGS	S-REIT	HK-REIT	J-REIT
FBMKLPRP	0.7524							
3M KLIBOR	-0.0269	-0.0039						
5-yr IRS	0.0613	0.0626	0.1414					
10-yr MGS	-0.0681	-0.0740	0.1082	0.3982				
S-REIT	0.4520	0.4140	-0.0431	0.0774	-0.0467			
HK-REIT	0.2834	0.2361	-0.0286	0.0069	-0.0195	0.3445		
J-REIT	0.3217	0.2581	-0.0375	0.0732	0.0002	0.3535	0.3002	
A-REIT	0.3138	0.2538	-0.0899	0.0794	0.0015	0.3861	0.2274	0.3084

Table 7: Results on Regression Analysis

The table shows the results of regression analysis on the identification of factors which drive M-REIT returns. Three panels are presented horizontally with Panel A shows the results for composite M-REIT index, Panel B on conventional M-REIT Index while Panel C on Islamic M-REIT Index. *, ** and *** represent significance levels of 10%, 5% and 1% respectively. There are four broad columns, which present the results for the whole and three subsample periods, under each panel. Within each sample period, there are further four columns which show the results for each individual model. Model 1 is the full model as shown in Equation 1 while the other three models are factor-specific models which are variations of Model 1.

	Whole Period (Aug2005-Dec2013)				Pre-GFC (Aug2005-Dec2007)				GFC (Jan2008-Dec2009)				Post-GFC (Jan2010-Dec2013)			
Panel A	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
M-REIT (All)	FULL	MARKET	INT RATE	S-REIT	FULL	MARKET	INT RATE	S-REIT	FULL	MARKET	INT RATE	S-REIT	FULL	MARKET	INT RATE	S-REIT
Constant	0.0002	0.0002	0.0003	0.0003	0.0002	0.0001	0.0005	0.0004	-0.0001	-0.0001	-0.0002	-0.0001	0.0002	0.0002	0.0004	0.0003
FBM-KLCI	0.1862***	0.1995***			0.3173***	0.2926***			0.1396***	0.1570***			0.2118***	0.2459***		
FBMKLPRP	0.1444***	0.1438***			0.2132***	0.2017***			0.0973***	0.0920***			0.0738**	0.0999***		
3M KLIBOR	-1.5693***		-1.9566***		-2.8859		-4.7383		-1.2801*		-1.6037**		-3.1991***		-2.5667	
5-yr IRS	0.0561		0.8917**		0.4590		0.4192		0.0000		0.6071		-0.1718		1.4605**	
10-yr MGS	-0.2014		-1.0315**		-0.9984		-1.6350		0.6527		0.1143		-0.6314		-1.9048***	
S-REIT	-0.0056			0.0625***	-0.0653			0.0928*	0.0032			0.0390**	0.0637**			0.1528***
HK-REIT	-0.0029			0.0166	-0.0310			-0.0087	-0.0018			0.0151	0.0251			0.0401**
J-REIT	0.0152			0.0369***	0.0226			0.0784**	0.0031			0.0148	0.0283*			0.0446***
A-REIT	0.0102			0.0313***	0.0149			0.0772*	0.0112			0.0225*	0.0067			0.0303*
R^2	0.1349	0.1318	0.0054	0.0411	0.1351	0.1283	0.0064	0.0366	0.1913	0.1804	0.0103	0.0649	0.1840	0.1625	0.0165	0.1012
DW	1.7079	1.7079	1.6952	1.6954	1.4270	1.4239	1.4694	1.4485	2.3060	2.2973	2.1198	2.1689	2.1414	2.1242	2.0893	2.1166
Panel B	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
M-REIT (Conv)	FULL	MARKET	INT RATE	S-REIT	FULL	MARKET	INT RATE	S-REIT	FULL	MARKET	INT RATE	S-REIT	FULL	MARKET	INT RATE	S-REIT
Constant	0.0001	0.0001	0.0002	0.0002	0.0001	0.0000	0.0005	0.0004	-0.0002	-0.0002	-0.0003	-0.0002	0.0002	0.0002	0.0004	0.0003
FBM-KLCI	0.1994***	0.2174***			0.3440***	0.3173***			0.1519***	0.1814			0.2403***	0.2732***		
FBMKLPRP	0.1503***	0.1494***			0.2215***	0.2109***			0.0819**	0.0733**			0.0885***	0.1126***		
3M KLIBOR	-1.6618**		-2.1182***		-2.9148**		-4.7663***		-1.2957*		-1.7710***		-3.5301***		-2.8442*	
5-yr IRS	0.1000		0.9880**		0.6799		0.6128		-0.2284		0.3831		0.2469		2.0127***	
10-yr MGS	-0.4651		-1.3319***		-1.3041		-1.9649*		0.5946		0.1070		-1.1893*		-2.5233***	
S-REIT	-0.0141			0.0584***	-0.0688			0.0992*	-0.0013			0.0330**	0.0360			0.1424***
HK-REIT	0.0036			0.0243	-0.0223			0.0014	0.0096			0.0270	0.0230			0.0408**
J-REIT	0.0188*			0.0417***	0.0175			0.0772**	0.0058			0.0174	0.0361**			0.0558***
A-REIT	0.0170			0.0393***	0.0172			0.0833*	0.0194			0.0307**	0.0118			0.0407**
R^2	0.1369	0.1322	0.0066	0.0434	0.1428	0.1363	0.0072	0.0385	0.1701	0.1554	0.0084	0.0696	0.1784	0.1603	0.0227	0.0873
DW	1.7763	1.7787	1.7598	1.7612	1.4521	1.4488	1.4902	1.4695	2.3769	2.3636	2.2236	2.2722	2.2057	2.2006	2.1508	2.1678
Panel C	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
M-REIT (Islamic)	FULL	MARKET	INT RATE	S-REIT	FULL	MARKET	INT RATE	S-REIT	FULL	MARKET	INT RATE	S-REIT	FULL	MARKET	INT RATE	S-REIT
			Model not sig				Model not sig				Model not sig				Model not sig	
Constant	0.0002	0.0002	0.0003	0.0003	0.0004	0.0003	0.0007	0.0005	0.0000	0.0001	-0.0001	0.0000	0.0002	0.0002	0.0003	0.0002
FBM-KLCI	0.1095**	0.1246***			-0.0216	0.0182			0.1611**	0.1563**			0.0880	0.1169		
FBMKLPRP	0.1180***	0.1196***			0.2055***	0.1974***			0.1067*	0.1060*			0.0693	0.0980*		
3M KLIBOR	-0.9838		-1.1467		12.6154		10.9792		-1.2969		-1.4163		-2.5387		-2.0871	
5-yr IRS	-0.3050		0.4591		-3.5341*		-3.0483		0.6774		1.3175*		-1.5397*		-0.2752	
10-yr MGS	0.9502*		0.1657		4.2624**		2.9701		0.6718		0.0074		0.5507		-0.4849	
S-REIT	0.0219			0.0686***	0.0163			0.0996**	0.0064			0.0485**	0.1167***			0.1647***
HK-REIT	-0.0105			0.0067	-0.0341			-0.0041	-0.0228			-0.0057	0.0131			0.0207
J-REIT	0.0100			0.0239	0.0516			0.0548	-0.0027			0.0120	0.0193			0.0273
A-REIT	0.0016			0.0156	0.0019			0.0357	0.0008			0.0137	-0.0010			0.0067
R^2	0.0717	0.0680	0.0013	0.0269	0.0969	0.0759	0.0097	0.0411	0.0945	0.0868	0.0088	0.0221	0.0640	0.0454	0.0013	0.0436
DW	2.2097	2.2133	2.1633	2.1862	2.1494	2.1663	2.1175	2.1408	2.2604	2.2712	2.1736	2.1883	2.2221	2.2166	2.1820	2.2198

Table 8: Summary of Results

The table summarises the results for each hypothesis tested in this study.

Hypotheses	**Results**
H1: M-REITs returns are significantly and negatively correlated changes in interest rates.	Rejected
H2: M-REITs returns are more strongly correlated with changes in long term than short term interest rate.	Partially supported
H3: M-REITs returns are significantly and positively correlated with changes in local stock market and in particular the property sector index.	Supported
H4: M-REITs returns are significantly correlated with global stock and REIT markets returns.	Partially supported
H5: M-REITs returns are more significantly correlated with S-REITs returns than other global stock and REIT indices.	Supported
H6: Returns on stock markets are important in driving M-REITs returns.	Supported
H7: Changes in interest rates are important drivers of M-REITs returns.	Partially supported
H8: Returns on regional REIT markets are significant factors in explaining M-REITs returns.	Rejected