THE PERFORMANCE OF REAL ESTATE INVESTMENT TRUSTS IN MALAYSIA

YUEN MUN KWUN

MASTER OF BUSINESS ADMINISTRATION

UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF ACCOUNTANCY AND MANAGEMENT

APRIL 2016

The Performance of Real Estate Investment Trusts in
Malaysia

Yuen Mun Kwun

A research project submitted in partial fulfillment
of requirement for the degree of

Master of Business Administration

Universiti Tunku Abdul Rahman

Faculty of Accountancy and Management

April 2016

The Performance of Real Estate Investment Trusts In
Malaysia

By

Yuen Mun Kwun

This research project is supervised by:

David Ng Ching Yat
Associate Professor
Department of Economics
Faculty of Accountancy and Management
Universiti Tunku Abdul Rahman

DECLARATION

I hereby declare that:

(1) This Research Project is the end result of my own work and that due acknowledgement has been given in the references to all sources of information be they printed, electronic, or personal.

(2) No portion of this research project has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.

(3) The word count of this research report is _____22,901_____.

Name of Student: Yuen Mun Kwun

Student ID: 13UKM06650

Signature:

Date:

ACKNOWLEDGEMENTS

First and foremost, I would like to express my gratitude to Mr David Ng who has been giving me a lot of advices during the research process. I am grateful to receive his support and guidance during the research. Mr. David Ng also provided the best and sincere to achieve the study objective.

Secondly, I would like to thank to my family and friends who have been giving me support and strength while completing my research. I am thankful to have supportive family members and friends, which inspired me and keep me going. Without their support, I may not be able to complete the dissertation.

Last but not least, I would like to show my appreciation to the previous researchers who have contributed in relevant topics which are helpful in this research.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

THE PERFORMANCE OF REAL ESTATE INVESTMENT TRUSTS IN MALAYSIA

Yuen Mun Kwun

This study evaluates the performance of Real Estate Investment Trusts (REITs) in Malaysia from 2007 till 2015. The performance evaluation is based on risk-adjusted performance measurement tools namely Sharpe ratio, Treynor Ratio and Jensen Alpha, benchmarked with the FBM Kuala Lumpur Property Index (FBN KLPI). The results indicate that beta values are all less than one and conclude that M-REITs are poorly diversified. This follows that the potential to diversify are tremendous. All the M-REITs have lower systematic risk compared to FBM KLPI. Office related M-REITs carry higher market risk compared to other M-REITs. In terms of Sharp measure which measures risk-adjusted performance using standard deviation of return, all M-REITs reveal a positive Sharpe measure indicating that the return over the risk free rate is higher. In addition, all M-REITs with a positive Treynor ratio, which indicates that the portfolio is able to generate better returns as compared to the risk benchmarked by the market. However, all M-REITs have the negative result for Jensen measure which explains that the performance of M-REITs has not performed as compared to the market portfolio FBM KLPI.

CHAPTER 1

INTRODUCTION

1.0   Introduction

This study investigates the performance of the Real Estate Investment Trust (REIT) companies on extracting data from Bursa Malaysia. Chapter one is divided into six sections, namely the background of study, problem statements, research questions, research objectives, significance of study and a brief on the outline of this project.

1.1   Background of Study

Before 1960, there is only way to invest in property by having the properties physically. Besides, investor could invest in public listed property stocks or real estate linked debt securities for instant bonds which are issued on developing real estate projects (Anuar & Soi, 2011). Subsequently with the financial revolution, it has successfully developed a wide range of investments in the real estate sector, with the beginning of Real Estate Investment Trusts.

Real Estate Investment Trust, REIT is a company that owns or finances income-producing real estate. REITs are tied to almost all aspects of the economy including shopping malls, warehouses, apartments building, hospitals, hotels, industrial facilities, infrastructure, nursing homes, offices, student housing, and

timberlands. On the other hand, some REITs focus their investments specifically either by location or by property types (Lee, Ali, & Lee, 2006).

REITs allow anyone to invest in portfolios of large-scale properties the same way as they invest in other industries – through the purchase of stock or shares. Similar to where shareholders benefit by owning stocks in other corporations, the stockholders of a REIT earn a share of the income produced through real estate investment – without actually having to go out and buy or finance any properties.

In addition, the management company for a REIT is permitted to deduct distribution paid to its shareholders from its corporate taxable income. However, to enjoy this tax-free status, the REITs must have most of its assets and income tied to the real estate and distributes at least 90% of its total income to investors/unit holders annually. REITs are listed on a stock exchange trade just like others' stock. (Security Commission, Aug 2008)

Indeed, in 1960s, Real Estate Investment Trust were started in the United States. Subsequence, REITs has been developing over many developed countries over few decades with stable fixed earning. Because of the the attractive distribution yield, REITs provide an alternative investment scheme that has gradually replaced the existing fixed deposit investments as many of investors' portfolio. Typically, investors of REITs are long-term investors along with low risk strategy such as individual investors, insurance institution, pension funds bodies as well as unit trust funds (Lee, Kuo, Lee, & Lin, 2011). Because many investors could not affordable invest in a large real estate portfolio, as a result, REITs gain strength from funds raised and invest the funds into a high-profile and high value real estate nature for better return (Chin & Ahmad, 2006).

In the late 80s' of Malaysia, real estate funds are known as Listed Property Trusts (LPT). Subsequence, in 2005, Listed Property Trusts rename to Real Estate Investment Trusts. This is proud that Malaysia was the first country among Asian to have listed property trust in the board exchange in 1989. (Newell, Ting, & Acheampong, 2002) During 1997 to 1998 whereby those economists termed as

"Asian Economic Crisis Event", after this Asian economic crisis had significant improvement on the evolution of the REITs in other nations within Asia. As a result, REITs market were then developed in Japan and South Korea in 2001. Following by Singapore launched its first REIT in 2002 while Taiwan established its REITs legislation in 2004. In 2005, Hong Kong became the next country to announce its first REIT. Throughout the years, Japan became the most matured REITs industry while for the Singapore is widely regarded as the most aggressive REITs industry among other Asian nations (Husni, 2010).

The year of 2015 is a significant milestone for Malaysian REITs (M-REITs) market as it marks the first decade of its existence. Since the appearance of Axis REIT, the first M-REITs in the main board of Bursa Malaysia, in August 2005, the market has grown by leaps and bounds in terms of both market capitalization and number of listed REITs. As from 2013, KLCC REIT became Malaysia's largest REIT with investment properties up to RM 14.7 billion, three times the size of IGB REIT's of RM 4.6 billion. (Wong, 2012) There are 17 REITs listed in Kuala Lumpur Stock Exchange with total combined market capitalization of RM 37.545 billion, total asset value of RM 45.728 billion, total net asset value of RM 31.187 billion as at 31st Dec 2015.

In the date of 2006 August, Islamic Real Estate Investment Trust was born. This would be a proud news that Malaysia is he world's first developer of I-REITs which is compliant with the principles of Shariah. As a result, by the raising of Islamic REITs has been controlled by protocol issued which by the Securities Commission Malaysia. With these new protocol cater as a brand new international standard for the expansion of Islamic REITs. Because of this, which raising an important role in Malaysia to promote the growth and development of the Islamic market in the International Financial Community.

These protocol contributed a new international standard for the growth of Islamic REITs industry, and also established a significant role in Malaysia to facilitate the development and expansion of the Islamic industry in the International Financial Community.

With the ethical investment tools, Islamic REITs were adopted by international Muslim investors (Ibrahim & Ong, 2008). Up to year 2010, there are total four Islamic REITs was listed in Malaysia. As recorded Al-Aqar KPJ REIT listed in August 2006, Axis REIT and Al-Hadharah Boustead REIT was listed in Aug 2005 and February 2007 respectively. By then Axis REIT was reformed into a Islamic REIT in December 2008 which comply of Shariah's principle (AXIS, 2015).

The Malaysia government recently introduced and amended a brand new legislative measure to speed up the expansion of the local REITs industry as well as facilitate REITs as a feasible investment tools for investors as well as industries players (Rozali & Hamzah, 2006).

The intention of this research is to provide experimental evidence that referring on the risk associated with the investment in REITs as well as its historical performance. This research aims to develop on the existing literature by providing evidence on the risk return performance of REITs over a 10 years period in each economic cycle (Basse, Friedrich, & Bea, 2009).

1.2   Problem Statement

The Malaysia Real Estate Investment Trusts (M-REITs) is a relatively latest investment structure in the Bursa Malaysia and M-REITs has its own sector as well. Market capitalization of M-REITs has been growing in recent years. With the Initial Public Offer for KLCC REIT, total market capitalization of the MREITs was booted in a new dimension. However, if M-REITs were to be compared with regional REITs such as Taiwan, Hong Kong and Japan, there are still a lot of room to grow.

As evidenced from Bursa Malaysia, there has been an increasing number of domestic investors as well as the foreign investors interested in M-REITs. Although with market fluctuation, mainly from personal investors are still comparably modest alike with the continued listing M-REITs on Kuala Lumpur

Stock Exchange. A study required to be carried out to assess the present performance of each M-REITs in comparison with FBM Kuala Lumpur Property Index. As many investors treat M-REITs is a new investment tools and treat it as diversify in their investment portfolio. This would provide investors with evidence as to whether investment in M-REITs is a good investment tool.

Without the use of investment tools, it is very difficult to evaluate whether REITs investments outperform or underperform. As a result, the well known standard performance measurement methods, namely Jensen Alpha, Sharpe Ratio, Treynor Ratio will be used to generate a comparison report with other index such as FBM Kuala Lumpur Property Index.

Some researchers have restricted their studies of M-REITs to the first four Listed Property Trusts while ignoring the other M-REITs. Majority of the sampling was up to 2005 by the majority of researches (Chai, Choong, Koh, & Tham, 2011). A minority of researches conducted their study with sampling period up to 2009 and utilized 12 listed M-REITs. No other were studies being conducted for all the 17 MREITs listed with sampling period until 2015.

Previous studies mainly focused on the ascription of the notorious Asian Financial Crisis in the year 1997 to 1998. This study would like to highlight more recent global economic activities that will affect the performance of M-REITs such as the inflating of global property bubbles during the year 2004 till 2007 due to low United State's interest rates, but the key is, the United State National subprime bubble burst after 2007. Besides, Euro Credit crunch and the collapse in 2008 and 2009, the real estate industry in Dubai. In addition, sale tide sent shares down, mainly to create instability in global financial markets and the most recently United States Federal Reserve ended with the Quantitative Easing Program in the year 2014. All these external factors occurred within the frame of 2001 to 2014, and to examine all this external factors will contribute to the dynamics of M-REITs.

There are a lot of fund managers that advises clients to diversify their portfolio investments into M-REITs (Ong, 2012). Nevertheless, M-REITs offer some extraordinary strength as an investment compared to shares, equity structure of the trust, even bonds, such as low investment risk than stocks, while producing higher than average income higher than the bond market.

However, M-REITs for the realization of the application portfolio diversification is still insufficient for the exposure potential of the majority of domestic fund managers this type of investment provide relatively uncertain. M-REITs fund managers in the country most of the portfolio is still relatively limited understanding. Further, since the dividend yield of M-REITs are based investment fund that dividend yield is more implication than local inflation, increasing global, capital appreciation and possibly for M-REITs as an investment worth doubt. In a recent year, inflationary pressures have mounted eligibility for domestic and foreign investors with hedge effectiveness M-REITs.

1.3   Research Questions

This study aims to highlight and learn about numerous extensive issues of the Malaysia Real Estate Investment Trusts. The questions are:

(4) Are M-REITs a better investment tool for the investors?

(5) How each M-REITs or stock prices relative return of investment implementation of its provisions with FBM Kuala Lumpur Property Index with sampling period 2007 - 2015?

(6) What is the total risk of each M-REITs?

Broader market covers the performance of the entire real estate sector in Malaysia, with the measurement by FBM Kuala Lumpur Property Index. Lastly, 3 month Malaysian T-bill rate Malaysian to be used as risk-free rate.

1.4   Research Objectives

There are four directions of this study are as follow:

Secondary objective:

1) To evaluate the performance of M-REITs based on performance measurement tools, namely Sharpe Ratio, Treynor Ratio and Jensen Alpha

2) To investigate whether M-REITs provide higher returns as compared to the market portfolio, FBM Properties Index.

3) To examine the total risk of each M-REITs

Primary objective:

4) To determine if M-REITs is a worthwhile investment tool

1.5   Significance of Study

As the Malaysia Real Estate Investment Trusts (M-REITs) has been development for some time and growth for claiming as an emerging REITs market in the region. Besides, from this research provides to investors from individual or institution with a deeper and broader recognize on the character of M-REITs segment as well as the development in the past, present and future. The expansion of past cognition on M-REITs so that broader group of investor are able to comprehend what what M-REITs could offer as an investment tools and REITs are and could diversification of their investment portfolio.

In addition, as the study is exanimate the performance of Malaysia Real Estate Investment Trust, this would be a valuable information or indication towards to the investors or readers in accurate decision when they would like to invest in M-REITs. Throughout the research, the top performance as well as the worst

performance of of M-REITs will be determinate. As a result, potential investors could be identified which M-REITS is their favorite, and it could be treat as safeguard in their portfolio during economy crisis or generate steady income.

Although the results of this research can not 100% ensure accurate prediction of the future. However, the finding may be used as a basis for consideration of investment based on a historical perspective. Because of the this to define the predictability and potential of returns on each of the Malaysia Real Estate Investment Trusts.

Moreover, in this research may also offer a glimpse on the pattern and behaviour of M-REITs which being contrast to benchmark that set. Finally, this research could also drop a reference for researchers and other academics to continue to investigate in any field related to the M-REITs in the future as the recurrent and advanced methods for the growth of the extant literature on this subject.

1.6   Organization of Research

There are five chapters in this research study and contents have been compiled as Chapter One as part of a brief introduction on the explanation of the general overview of the study. Chapter Two Covers Literature Review in which the theoretical framework, the background of the development of Real Estate Investment Trusts in Malaysia will be discussed and clarified. The third chapter explains the research design, data collection and methodology. Chapter Four analyzes the results of this study as all interpretations of the results will be discussed and examined whether the hypothesis is significance. Lastly in Chapter Five, cover the the overall conclusions and recommendations section. There will be a discussion on overall conclusions which consist of the result findings, limitation, and future research recommendations.

CHAPTER 2

LITERATURE REVIEW

2.0   Introduction

The first section, the background of FTSE Bursa Malaysia Kuala Lumpur
Composite Index (FBMKLCI), Bursa Malaysia and FTSE Bursa Malaysia Kuala
Lumpur Property Index (FBMKLPI) will be discussed. The development of REIT
in Malaysia is further explained, along with the structure and comparisons of
conventional MREITs and Islamic REITs. An explanation on the governance of
M-REITs follows.

Efforts in promoting M-REITs industry by the Malaysian government will be
briefly explained. In addition, the key factors or the advantages of REITs will be
clarified. Finally, the US subprime mortgage crisis would be highlighted, followed
by listing the historical risk-free and inflation rates in Malaysia.

2.1   Bursa Malaysia Berhad

In 1930, Singapore Stockbrokers' Association which was established which is the
pioneer formal securities business organization in Malaysia. Subsequently, in
1937, Malayan Stockbrokers' Association was re-registered. Further on, in 1960,
the Malayan Stock Exchange was set. At that time on public trading of shares was

initiated. At those time, the board system had trading rooms in Singapore and Kuala Lumpur and which linked by direct telephone lines.

Subsequently, Stock Exchange of Malaysia was established in 1964. With the secession of Singapore from Malaysia in 1965, the Stock Exchange of Malaysia was then known as the Stock Exchange of Malaysia and Singapore. Currency interchange ability between Malaysia and Singapore ceased, and the Stock Exchange of Malaysia and Singapore was divided into the Kuala Lumpur Stock Exchange Berhad and the Stock Exchange of Singapore in 1973. On 14th December 1976, Kuala Lumpur Stock Exchange which was incorporated as a company limited by guarantee managed the operations of the Kuala Lumpur Stock Exchange Berhad in the same year.

Kuala Lumpur Stock Exchange changed its name to Bursa Malaysia Berhad on 14th April 2004, which was followed by the demutualisation exercise. Its purpose was to improve its competitive position and to respond to worldwide trends in the exchange industry by making more customer-driven and market-oriented. Bursa Malaysia was listed on the Main Board of Bursa Malaysia Securities Berhad on 18th March 2005,.

Bursa Malaysia accomplished two awards when the exchange received certifications for conformance to ISO 14001:2004 Environmental Management System as well as ISO 9001:2000 Quality Management System standards on 5 October 2007. Following by it entered into a strategic partnership with Chicago Mercantile Exchange (CME) with the aim of improving accessibility to its derivatives offerings worldwide in September 2009. Bursa Malaysia Berhad holds 75% of the equity stake in Bursa Malaysia Derivatives Berhad, while the remaining 25% interest is held by Chicago Mercantile Exchange.

The exchange holding company which need to be approved by Bursa Malaysia, which the securities commission of Malaysia is an according to Section 15 of the Capital Markets and Services Act 2007 in the Bursa Malaysia website. Bursa Malaysia's vision is to become a key partner in Asia for fund-raising, trade and

investment by offering the market a systematic and fair way for investors to invest with a counter and a different portfolio.

On March 2005, Bursa Malaysia was listed on Main Board of Bursa Malaysia Securities Berhad. Further to the explanation, Bursa Malaysia divided into three categories, namely bonds, derivatives and securities clearing. After three year of listing which is December 2008, Bursa Malaysia introduced the Bursa Trade Securities, that allows the execution and processing of orders faster and provide greater trading features and functions. Eight months later which is August 2009, the second board and main board the of Bursa Malaysia combined into an one market known as the Main Market. Besides, the Access, Certainty and Efficiency (ACE) is the new combined name which from Malaysian Exchange of Securities, Dealing & Automated Quotation (MESDAQ).

Today, Bursa Malaysia operates a fully-integrated exchange, offering a complete range of exchange-related services including settlement, clearing, trading, as well as depository services. The wholly-owned subsidiaries of Bursa Malaysia as set out below: -

- Bursa Malaysia Securities Clearing Sdn Bhd (109716-D) – Provide, operate and maintain a central depository

- Bursa Malaysia Securities Berhad (635998-W) – Provide, operate and maintain securities exchange

- Bursa Malaysia Information Sdn Bhd (152961-H) – Provide and disseminate prices and other information relating to securities quoted on exchanges within the group

- Labuan International Financial Exchange Inc (LL 02032) – Provide, operate and maintain offshore financial exchange

1.7 Bursa Malaysia Derivatives Clearing Berhad (358677-D) – Provide, operate and maintain a clearing house for the futures and options exchange

1.8 Bursa Malaysia Derivatives Berhad (261937-H) - Provide, operate and maintain a futures and options exchange

1.9 Bursa Malaysia Bonds Sdn Bhd (319465-T) – Provide, operate and maintain registered electronic facility for secondary bond market

1.10 Bursa Malaysia Islamic Services Sdn Bhd (853675-M) – Operate all Islamic Markets business and activities initiated under Bursa Malaysia

1.11 Bursa Malaysia Depository Nominees Sdn Bhd (240297-W) – Act as a nominee for the central depository and receive securities on deposit for safe-custody or management

(Source: http://www.bursamalaysia.com/corporate/about-us/overview/)

In order to achieve the development of the Malaysian capital market and strengthen international competitiveness, Bursa Malaysia is committed to maintaining an secure, efficient and active trading market for domestic as well as international investors. Figure 2.1 shown the regulatory structure of Bursa Malaysia under the supervision of and Ministry of Finance (MOF) and Securities Commission (SC)

Figure 2.1: Regulatory Structure
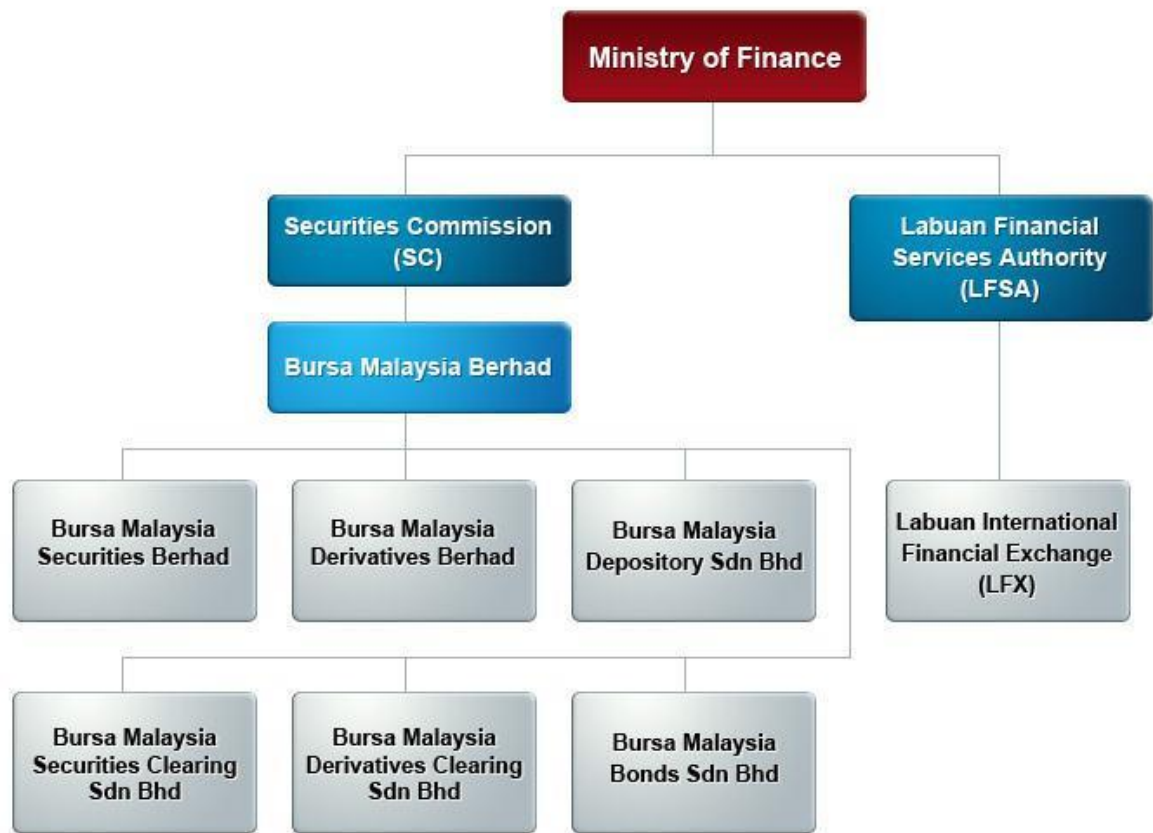
Source: (http://www.bursamalaysia.com/corporate/about-us/our-organisation/regulatory-structure/)

2.1.1 Bursa Malaysia Indices

On 2nd January 1970, Malaysia stock market indicators was established. As the Industrial Index by 30 industrial stocks with the base year 1970. Representatives of exchange and understanding where the industry has the necessary stock market index that reflects the performance of the general market, in response to the demand of investors, showed no change in government policies and reactive to changes in the economic structure.

There is using real time basis every 15 seconds and the closing price obtained from the Exchange to provide the calculations and adjustments to FTSE Bursa

Malaysia Kuala Lumpur Composite Index (FBM KLCI). The calculation is based on a formula determined by the free float factor and value-weight. In addition, the free float factors purpose to regulate the nature of the company's market activity index which level of investable opportunities and each company must have a minimum free float of fifteen percent.

Table 2.1 show the summary of the major highlights of FBMKLCI.

Table 2.1: Milestones of KLCI

Date	Descriptions
4th April 1986	The KLCI was launched as an open-ended index with a total of 83 companies and calculated three times a day. Trading volume criteria was set at minimum 250 lots per annum.
30th January 1990	Calculation frequency was increased to every 15 minutes.
29th May 1992	Trading volume criteria was increased to minimum of 1,000 lots per annum.
18th April 1995	Number of constituents was increased to and fixed at 100 largest capitalization companies as to accommodate the listing of stock index futures. Computation frequency was increased o every 60 seconds.
19th March 1998	Enhancement to the objectives to better track the economy.
15th May 2005	Discontinued the practice of adjusting index base for dividends.
6th July 2009	Change name to FTSE Bursa Malaysia KLCI (FBMKLCI). The number of constituents is reduced fixed at 30 largest capitalization free-float weighted compained and adopts the FTSE Bursa Malaysia Index calculation methology. The index computation is as follow: - $$\text{Index} = \frac{()^{**}+,-.//^{*}+/0-+\ 10^{*}2+-\ (34\text{-}05460\text{-}47,}{809+.//^{*}+/0\text{-}+\ 10^{*}2+\text{-}\ (034\text{-}05460\text{-}47,} : 100$$

8th Oct 2012	Launch of the FTSE Bursa Malaysia Small Cap Shariah Index to complement the existing FTSE Bursa Malaysia Shariah indices. This new Shariah index is designed to provide investors with a precise benchmark for Shariah compliant investment in Malaysian small cap companies
22nd Dec 2014	Launch of the Environmental, Social and Governance (ESG) Index and realised the Prime Minister's vision in Budget 2014 for it to be introduced. The FTSE4Good Bursa Malaysia (F4GBM) Index was developed in collaboration with FTSE as part of the globally benchmarked FTSE4Good Index Series and is aligned with other leading global ESG frameworks such as the Global Reporting Initiative and the Carbon Disclosure Project.

Source   :
(http://www.bursamalaysia.com/website/bm/market_information/fbm_klci.html)

There are totally nine main sector indices in Bursa Malaysia Main Market, which are: (i.) construction; (ii.) consumer product; (iii.) finance; (iv.) industrial product; (v.) mining; (vi.) plantation; (vii) property; (viii.) technology and (ix.) trading and services.

In Malaysia real estate sector index, known as FBM Kuala Lumpur Property Index (FBMKLPI), there are total of 88 listed property companies stock prices of was tracked with its base year on 1970 (Tan , 2009). Meanwhile, in Bursa Malaysia, the main market indicator is Bursa Malaysia FBM KLCI, deliver as a benchmark to track share price of 30 largest companies by full market capitalization. Meanwhile the FTSE EMAS Index composed and measure share price of 360 constituents of the FTSE Bursa Malaysia Top 100 Index and FTSE Bursa Malaysia Small Cap Index, which delivery as a improve approximation for the performance of Bursa Malaysia's Main Market. Figure 2.2 illustrates the structure of FTSE Bursa Malaysia indices for both Main and ACE market.

Figure 2.2: Structure of FTSE Bursa Malaysia

Source:(http://www.bursamalaysia.com/market/products-services/indices/ftse-bursa-malaysia-indices/overview/)
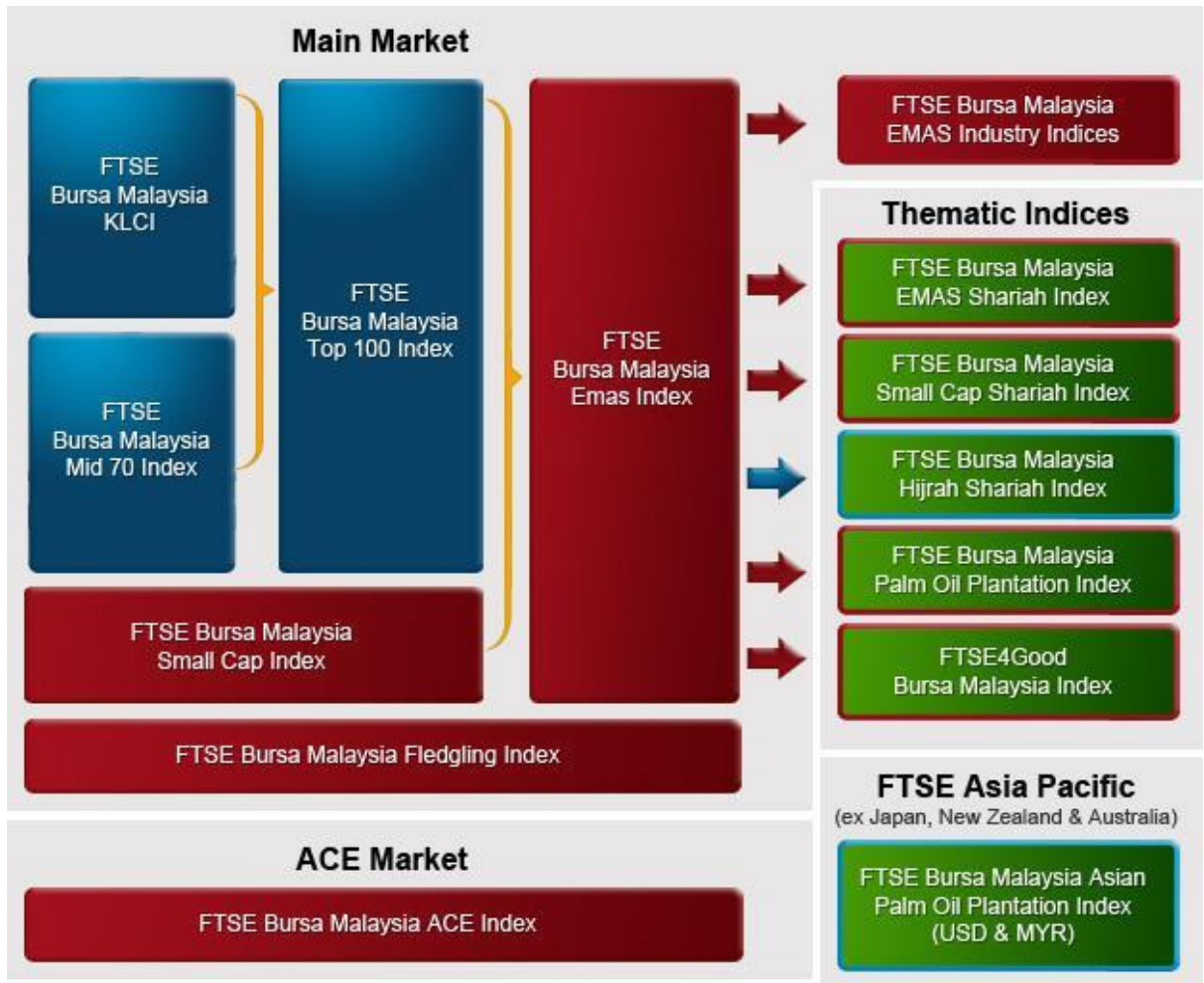
2.2 The Development in Malaysia Real Estate Investment Trusts (M-REITs)

In early of 1960, Real Estate Investment Trusts were initially established in the United States. However, for Malaysia, the legislation to permit the formation of listed property trusts which is similar to REIT was the first to be introduced among Asia countries. On 28th August 1989, the first Listed Property Trust (LTP) was born. Arab Malaysian First Property Trust (AMFPT) was listed on Kuala Lumpur Stock Exchange (Hamzah, Rozali, & Tahir, 2010).

As conclude by the end of the 1990s, totally, there are four number of LPTs listed on KLSE. First Malaysian Property Trust (FMPT) established on 23rd November 1989 recorded as second LPT. Following by the third LPT namely Amanah Harta Tanah PNB (AHTP) listed on 28th December 1990 and final by Mayban Property Trust Fund One (MPTF1) on 25th March 1997.

However, after being listed for thirteen years, FMPT ceased listing on July 2002. At the end of April 2005, there were only three LPTs left on Bursa Malaysia which are AmFirst Property Trust (formerly Arab Malaysian First Property Trust), Amanah Harta Tanah PNB and Amanah Harta Tanah PNB 2.

In the year 2005, there is new guidelines on which introduced by Securities Commission on Real Estate Investment Trusts (REITs). This would be end of the listed property trust (LPT) and given new name as Real Estate Investment Trusts as ensure a standardization of terms with other nations. The first Malaysian REIT (M-REITs), known as Axis REIT, was then listed on Bursa Malaysia in 2005.

Table 2.2 illustrates the summary of major policy changes of REITs regime in Malaysia. Table 2.3 shown the assets owned by each M-REITs as well as Appendix 1 illustrate the list of M-REITs as at 31st December 2015

Table 2.2: Major Policy Changes of REITs Regime in Malaysia

Date	Description of Policy
1986	Approval of the establishment of regulatory framework of listed trust by the Bank Negara Malaysia. The Principal Regulation was the Companies Act 1965 and Securities Industry Act 1983.
1989	In order to provide a framework for the establishment of property trust fund in Malaysia, Property Trust Guideline (PTG) was issued.
October 1991	Specific Securities Commission Guidelines for the property trust fund was developed.
16th June 1995	The first edition of Guidelines on Property Trust Funds was issued by Security Commission.
13th November 2001	Security Commission revised the Guidelines on Property Trust Funds (2nd Edition).
2004	Announcement by the government that RPGT and stamp duty are exempted for sale of property of REITs.
30th September 2005	In order to reduce the cost of establishment of REIT, government announced to allow tax deductions on legal, valuation and consultancy expenses incurred in the establishment of REITs
21st November 2005	The issuance of Guidelines on Islamic Real Estate Investment Trusts.

Source: (Chin & Ahmad, 2006)

Table 2.3: List Properties Own by each of M-REITs as at 31st December 2015

NO	REITs	Assets Owned
1	Amanah Harta Tanah PNB (4952.KL)	1) Plaza VADS, Taman Tun Dr Ismail, Kuala Lumpur 2) Bangunan AHP, Taman Tun Dr Ismail, Kuala Lumpur 3) Sri Impian, Taman Setiawangsa, Kuala Lumpur 4) Shopoffice, Taman Tun Dr Ismail, Kuala Lumpur 5) Shopoffice, Jalan Negara, Taman Melawati, Kuala Lumpur 6) Shopoffice, Kota Kinabalu, Sabah 7) Shopoffice, Taman Inderawasih, Butterworth, Penang 8) Shopoffice, Lorong Selangor, Taman Melawati, Kuala Lumpur 9) Shopoffice, Off Jalan Rubber, Kuching, Sarawak 10) Shopoffice, Jalan Permaisuri, Miri, Sarawak 11) Shopoffice, Jalan Semabok, Melaka
2	Al-'Aqar Healthcare REIT (5116.KL)	1) Ampang Puteri Specialist Hospital 2) Damansara Specialist Hospital 3) KPJ Johor Specialist Hospital 4) KPJ Ipoh Specialist Hospital 5) Puteri Specialist Hospital 6) KPJ Selangor Specialist Hospital 7) Kedah Medical Centre 8) KPJ Perdana Specialist Hospital 9) Kuantan Specialist Hospital 10) Sentosa Medical Centre 11) KPJ Kajang Specialist Hospital 12) Taiping Medical Centre Damai Specialist Hospital 13) KPJ College Bukit Mertajam 14) Tawakal Health Centre Selesa Tower 15) KPJ Healthcare University College, Nilai 16) KPJ Seremban Specialist Hospital 17) KPJ Penang Specialist Hospital 18) KPJ Tawakkal Specialist Hospital 19) KPJ Klang Specialist Hospital

		20) Kluang Utama Specialist Hospital 21) Jeta Garden Aged Care Facility and Retirement Village
3	AmFirst Real Estate Investment Trust (5120.KL)	1) Bangunan AmBank Group 2) Menara AmFirst 3) Menara AmBank 4) Wisma AmFirst 5) The Summit Subang USJ 6) Prima 9 7) Prima 10 8) Kompleks Tun Sri Lanang 9) Mydin Hypermall Bukit Mertajam
4	AmanahRaya Real Estate Investment Trust (5127.KL)	1) Selayang Mall 2) AIC Factory 3) SilverBird Factory 4) Gurun Automotive Warehouse 5) Holiday Villa, Alor Setar 6) Holiday Villa, Langkawi 7) Block A & B, South City Plaza 8) Wisma AmanahRaya, Jalan Ampang 9) Wisma Amanah Raya Berhad, Jalan Semantan 10) Dana 13, Dana 1 Commercial Centre 11) Wisma Comcorp 12) SEGi College 13) SEGi University
5	Atrium Real Estate Investment Trust (5130.KL)	1) Atrium Shah Alam 1 2) Atrium Shah Alam 2 3) Atrium Puchong 4) Atrium Rawang 5) Atrium USJ

6	Axis Real Estate Investment Trust (5106.KL)	1) Axis Business Park 2) Crystal Plaza 3) Menara Axis 4) Infinite Centre 5) Wisma Kemajuan 6) Axis Business Campus 7) Axis Shah Alam DC 1 8) Giant Hypermarke 9) FCI Senerai 10) Fonterra HQ 11) Quattro West 12) Strateq Data Centre 13) BMW Centre PTP 14) Niro Warehouse 15) Delfi Warehouse 16) Axis Steel Centre 17) Bukit Raja Distribution Centre 18) Seberang Prai Logistic Warehouse 1 19) Seberang Prai Logistic Warehouse 2 20) Tesco Bukit Indah 21) Axis PDI Centre 22) Axis Technology Centre 23) D8 Logistics Warehouse 24) Axis Eureka 25) Emerson Industrial Facility Nilai 26) Wisma Academy Parcel 27) The Annex 28) Axis Shah Alam DC 3 29) Axis MRO Hub 30) Axis Steel Centre @ SiLC
7	CapitaLand Malaysia Mall Trust (5180.KL)	1) Gurney Plaza 2) Sungei Wang Plaza 3) The Mines 4) East Coast Mall
8	Hektar Real Estate Investment Trust (5121.KL)	1) Subang Parade 2) Mahkota Parade 3) Wetex Parade 4) Central Square 5) Landmark Central
9	IGB Real Estate Investment Trust (5227.KL)	1) Mid Valley Megamall 2) The Gardens Mall

10	KLCC Real Estate Investment Trust (5235SS.KL)	1) PETRONAS Twin Towers 2) Menara ExxonMobil 3) Menara 3 PETRONAS
11	MRCB-Quill REIT (5123.KL)	1) QB1 -DHL 1 & QB 4-DHL2 2) QB 2- HSBC 3) QB 3- BMW 4) Wisma Technip 5) Part of Plaza Mont' Kiara 6) QB5- IBM 7) Tesco Building Penang 8) Platinum Sentral Industrial building 9) QB 8 -DHL XPJ
12	Sunway Real Estate Investment Trust (5176.KL)	1) Sunway Pyramid Shopping Mall 2) Sunway Carnival Shopping Mall 3) Suncity Ipoh Hypermarket 4) Sunway Putra Mall 5) Sunway Resort Hotel & Spa 6) Pyramid Tower Hotel 7) Sunway Hotel Seberang Jaya 8) Sunway Putra Hotel 9) Menara Sunway 10) Sunway Tower 11) Sunway Putra Tower 12) Sunway Medical Centre 2
13	Pavilion Real Estate Investment Trust (5212.KL)	1) Pavilion Kuala Lumpur 2) Pavillion Tower
14	Tower Real Estate Investment Trust (5111.KL)	1) Menara HLA 2) HP towers 3) Menara ING
15	UOA Real Estate Investment (5110.KL)	1) UOA Centre Parcels 2) UOA II Parcels 3) UOA Damansara Parcels 4) Wisma UOA Pantai 5) Wisma UOA Damansara II 6) Parcel B – Menara UOA Bangsar

16	YTL Hospitality REIT (5109.KL)	1) JW Marriott Hotel Kuala Lumpur 2) The Residences at The Ritz-Carlton, Kuala Lumpur 3) The Ritz-Carlton, Kuala Lumpur 4) Vistana Penang Bukit Jambul 5) Vistana Kuala Lumpur Titiwangsa 6) Vistana Kuantan City Centre 7) Pangkor Laut Resort 8) Tanjong Jara Resort 9) Cameron Highlands Resort 10) Hilton Niseko Village 11) Sydney Harbour Marriott 12) Brisbane Marriott 13) Melbourne Marriott

2.2.1 Structure of Malaysia Real Estate Investment Trusts.

Figure 2.3: Typical Conventional Malaysia REIT's Structure.

Source: (http://www.bursamalaysia.com/market/securities/education/faqs-on-real-estate-investment-trusts-reits/)
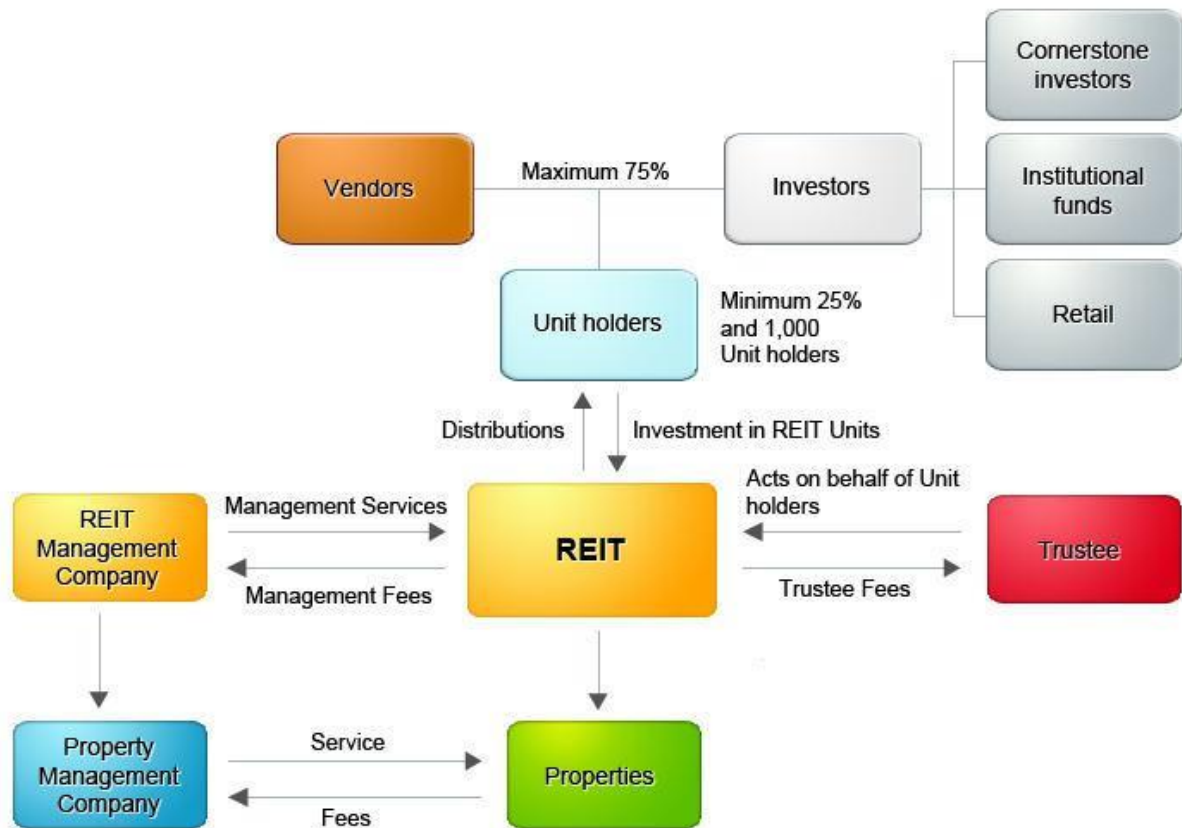
Figure 2.4: Typical Malaysia Islamic REIT's structure

Source: (http://www.bursamalaysia.com/market/islamic-markets/products/islamic-capital-market/islamic-real-estate-investment-trusts-ireits/)
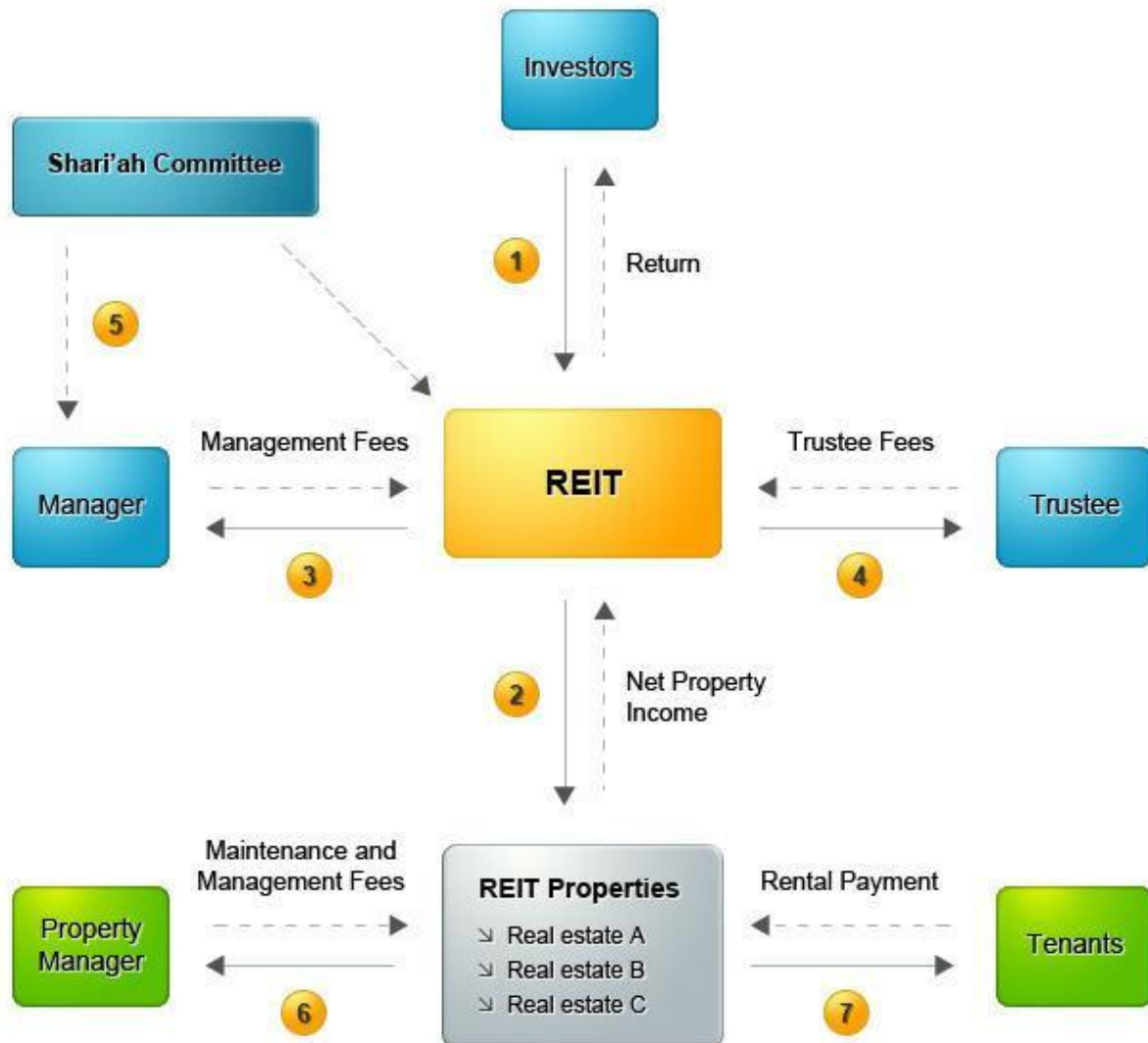
2.2.2   Comparison of Malaysia Typical REITs and Islamic REITs

Real Estate Investment Trust a cumulative investment scheme in property which the combination of the best features of trust fund and property. To further explanation, Islamic REIT (iREIT) is the Shari'ah version of the conventional REIT.

Malaysian government, via Securities Commission issued guidelines for iREIT in November 2005, setting a new international standard for the development of this instrument and making

Malaysia the first jurisdiction to introduce such guidelines in the industry. These guidelines provide guidance to market players on Shari'ah compliance in developing and managing an iREIT. These guidelines also serve to complement the existing guidelines on REIT.

As compared to the conventional one, the income of iREIT:

a. Must be from Shari'ah permissible activities; or

b. In case of mixed activities, must adhere to the 20% benchmark as determined by the SAC.

The activities below are deemed Shari'ah non-permissible as per the Securities Commission Guidelines

2.3 Financial services based on riba (interest);

2.4 Gambling/gaming;

2.5 Manufacture or sale of non-halal products or related products;

2.6 Conventional insurance;

2.7 Entertainment activities that are non-permissible according to the Shari'ah;

2.8 Manufacture or sale of tobacco-based products or related products;

2.9 Stockbroking or share trading in Shari'ah non-compliant securities; and

2.10   Hotels and resorts.

Besides that, a Shari'ah committee or Shari'ah advisor must also be appointed to advise the fund manager on Shari'ah compliancy matters

Essentially, iREIT works like any other trust funds which involve the following parties:

1. Investors invest in REIT through holding of units

2. REIT acquires real estates as its pool of assets

3. Manager manages and administers REIT e.g. sets up strategic direction

4. Trustee acts as the custodian of the fund

5. Shari'ah Committee advises on matters pertaining to Shari'ah

6. Property Manager provides maintenance and management services of the real estates

7. Tenants rent the real estates

In terms of tax treatment in Malaysia, both REIT and iREIT receive same tax treatment on stamp duty, real property gains tax as well as corporate tax. The regulatory framework is also similar for both with the exception that iREIT must comply with the Shari'ah requirements above.

2.2.3 The Governance of M-REITs

In Malaysia, Securities Commission (SC) is the statutory origination to govern Malaysia REITs with enforcement powers granted and investigative under the Securities Commission Act 1993. REITs are generally regulated by the Securities Commission through the following guidelines and legislations (LHDN Malaysia, Nov 2012):-

- ☐ Guidelines on Asset Valuation
- ☐ Guidelines on Real Estate Investment Trusts 2008
- ☐ Securities Commission Act 1993
- ☐ Guidelines on Islamic REIT

As pursuant to Section 158 of the Securities Commission Act, all the guidelines were issued by the Securities Commission. Any breaches or non-compliance of any of the requirements may cause administrative sanction under the guidelines or securities laws. Other laws and guidelines which also contribute in regulatory function of REITs are as follows:-

- ☐ Valuers, Appraisers and Estate Agents Act 1981
- ☐ Securities Industry Act 1993
- ☐ Foreign Investment Commission (FIC) Guidelines
- ☐ Malaysia Income Tax Act, 1967 (MITA)
- ☐ The Listing Rules of Bursa Malaysia
- ☐ Guidelines on Unit Trust Funds
- ☐ Capital Markets and Services Act, 2007 (CMSA)

Under the Securities Act 1993, several matters are required for approval. For example:-

2   For a company to act as a REIT manager

☐ For the offering and issuance of REIT units or the establishment of a REIT

☐ For the listing of a REIT on Bursa Securities

☐ For a trust company to act as trustee

Whereas under the Guidelines, the matters need approval are:-

☐ Approval for delegation of any function to a delegate

☐ Approval for the appointment of the Board members, Investment Committee members and CEO of a REIT Manager

☐ Approval on valuation of real estates for certain types of acquisition and revaluation of real estates

☐ Approval for any exemptions or waivers that may be required

2.2.4 Malaysia Government - the Efforts in Promoting M-REITs Industry

Typically, the M-REITs investment returns in developed market peaked at about three to five per cent year-on-year basis, depending on the performance of individual fund. Meanwhile, M-REITs look very superior as Malaysia is in the stage of a developing country whereby the local real estate values are still in the price range is relatively low, lagging behind the developed countries in Asia such as the volume of those are still very solid. As such, there is extensive potential for expansion for the Malaysia's real estate sector and it has consolidated as a changes to generate average attractive yields between six to eight per cent which is much more attractive than other developed countries.

In the Asia region, their REIT markets have a merit aspect over M-REITs. In Region countries such as Hong Kong or Singapore both have zero percent with holding tax as compared to ten percent in here. In recent decades, the tax regime for M-REITs has fall off behind Hong Kong, make both more attractive destination for REIT listing. As a result, in order to promote Malaysia Real Estate Investment Trusts market, the government or Securities Commission need to come up with convinced and better initiatives.

On 3rd January 2005, the Securities Commission issued new guidelines on M-REITs in order to speed up the growth of capital market and creating a REIT industry competitive and

vibrant in Malaysia. The main aspects include a restrictions relaxed on M-REITs in the following transactions for instance loan limits property purchases and the ownership of the leasehold property encumbered by financial charges. For the purpose of facilitate the expansion of M-REITs, approved by the Securities Commission are provided treatment as income distributed or tax incentives to shareholders are exempt from income tax and the accumulated income that has been taxed and subsequently distributed was qualified for recovery tax by shareholders.

On 21st November 2005, the Securities Commission also released new guidelines for establishment of Islamic REITs in order to promote the expansion of Islamic capital market. This protocol is to further develop the Islamic capital market products that are new and therefore, making Malaysia the first country in the international Islamic financial sector to issue such protocol. These protocol are expected to be the international benchmark for the growth of Islamic REITs in the world.

In the regulation, all M-REITs need to distribute at least ninety percent of net income, and the net income attributable to be tax exempt. M-REITs managers also hopes the government will also set aside ten percent withholding tax for residents and non -resident individuals. But, the reduced withholding tax of ten percent on non corporate and individual investors is only available up to 31st December 2011. Following, M-REITs dividends received after the last payable will be taxed at the twenty percent to oversea institutional investors and fifteen percent to non-corporate investors.

The elimination of withholding tax is often incorporated in the proposed Malaysian REIT Managers Association (MRMA) for the government to consider the current annual budget. In Budget 2010, the Real Property Gain Tax (RPGT) was rebuilt, primarily to curb speculative buying attraction in property. Meanwhile, there are no publication of any changes in the M-REITs industry was made at the point of time.

It is expected that the entire industry was reduced withholding tax of ten percent will continue, if not reduced again which contrast to zero percent withholding tax in Singapore. In the coming budget, to provide vast orientation of tax and tax position to REIT investors in the future.

In addition, the government also has form up a regulatory framework specially for Islamic REIT as another step to reinforce the country's reputation as a hub for Islamic finance in the world. The regulatory framework is similar for both with the exception of Islamic REITs must comply with Shariah requirements, where Islamic REIT must appoint a Shariah Committee or Advisor that will act as an advisor to the REIT and be a point of reference and consultation on approved investments as provided below Securities Commission's Guidelines on Islamic REIT.

Income distribution, although similar to those of conventional REITs in which it can only be made from the realized gain or income realized for Islamic REIT 's income must be derived from activities that comply with Sharia or from within 20 % benchmark. This benchmark is used to measure the contribution of rental payment from Shariah non-compliant activities such as rental of premises involved receipts or dealing with gambling and liquor sales.

Contraction to the Malaysian REITs, so far, there are total 17 M-REITs listed in Malaysia including two Islamic REITs, namely Al- Aqar KPJ REIT , the first Islamic REIT in the world and Al -Hadharah Boustead REIT , the first Islamic plantation REIT in the world , Both Al- Aqar KPJ REIT and Al -Hadharah Boustead REIT ranks among the three largest REIT in Malaysia in terms of dividend yield.

2.3 Essence of Attractive for M-REITs

Corresponded to Mr. Stewart LaBrooy , CEO of Axis REIT Managers Bhd , although in 2009 the M-REITs has faced difficulties from the effects of the international economic crisis, the company still managed to distribute about seventy to eighty percent of their retained earnings and net income for investors M-REITs (LaBrooy, 2012).

Consequence, the main draw is M-REIT units or shareholders will receive dividend income that is steady and acceptable distributors each year. Mr. Labrooy also mentioned that a high dividend yield of about seven percent per year, a low entry cost and is supported by the efficiency of corporate governance, M-REITs should be an investment option for investors of all levels as well as increasing the asset size M- REIT has increased to about RM 16 billion.

Moreover, M-REITs in fact allow investors to let go their time and allow property management into the hands of capable professionals with expertise in managing real estate. They will be responsible for maximizing the performance of their duties with wealth consequence of the growth, develop the trust of shareholders and more portfolio by increase the total market value of assets and acquiring strategic assets and under their management.

Thus, M-REITs will also offer investors liquidity to be able to easily convert their share into cash within three working days, just like other invest in share market. Life is full of uncertainties. Liquidation of part of the investment are not available for investment in physical properties, while the M- REIT does not allow investors to liquidate any portion of the stocks as required or necessary, not all shares held, at any time.

Finally, M-REITs allow investors to have partially own the larger scale real estate or property for instant industrial and retail complex with a minimum expenditure. But can profit from the developing and expansion of such assets. In contrast, investment in large scale physically real estate would have been hopeless for a small time investor for instant individual investors or household because they will have finite capacity to own and manage physical property like. Therefore, investors M-REITs comes with wider investment occasion in the property sector in Malaysia.

2.3.1   An Overview for Regional REIT Market

For general view, M-REITs with some developing countries in Asia as they are in the same stage of development in terms of market growth REIT selected, Japan is not included, all REIT Asia to overcome the other countries in the global in terms of return on investment, according to Global REIT Report 2014 by Ernst and Young. Apart from Japan, there is a different economic system than others in the region, the Asian economies are commonly more flexible to the financial crisis. One and three years old Asian REIT sector 's total return relative outperformers by the Ernst and Young Global REIT 2014.

In 2002, Singapore REITs (S-REITs) law was launched and is widely regarded as one of the the region in more liberal regime. In fact, Singapore Exchange (SSE) is authorities body to

become critical stock exchanges in the country, contend with the Hong Kong (HKSE) and Tokyo (TSE). In October 2005, it legislative REITs through a modified version of the Guidelines Property Fund (Ooi, Newell, & Sing, 2006). The Monetary Authority of Singapore released a list of recommendations for the development of codes REIT including rising the minimum compulsory investment in real estate from thirty-five percent to seventy-five percent corresponds to a rate closer similar in Hong Kong, and also introduced a licensing framework to the REIT manager in March 2007. Singapore has had the worst overall performance of the economy in early 2009, it seen as accessible during the impact of the financial crisis in 2008. Since March 2009, since the global financial markets have stabilized, the S-REITs have pick up greatly.

In July 2003, Hong Kong REIT (HK -REIT) law was launched, unfortunately HK-REITs did not meet the same success as other countries initially, this is partly reason of a lower level of tax transparency. HK-REIT company is subject to a sixteen percent property tax for property which held directly. After from this incident numerous adjustment were made to the law in order to resemble demand, including the ability to hold the property and allowing holding international assets through a special purpose vehicle (SPV) that is controlled by the REIT manager. Only seventy point five percent return tax imposed on return of the SPV. Malaysia and Hong Kong fence positive return in the last three years. Meanwhile, Singapore had a rate of only three years of negative returns of four point fifteen percent.

In 2003, REITs force in Taiwan following the legislation of the Real Estate Securitization Act. The law was passed in response to the need to stimulate the real estate market in Taiwan and to provide another alternative investment to the public and institutional investors, selection which has been limited mostly to funds focusing on corporate bonds and shares. To meet legal TW- REIT, a trust must have been launched for three years and meet convinced standards of credit ratings. Based on the regulatory approvals, TW-REITs can invest in overseas assets is completed, while investment in real estate expansion is still not allowed, despite the efforts of certain interest groups to change this rule when it was introduced in 2003.

In addition, Thailand also established its REITs since the 2000s has the REIT market capitalization of US $ 2.248 billion in June 2010, was not included in comparison because

there are certain political upheavals affecting the development of country's real estate sector growth. It will not be as comparable with Thailand proxy for performance comparison. Japan, on the other hand, was considered to be more in advance or advanced level compared to the Malaysian REIT market as it is a developed country.

2.3.2 The Causes and consequences of US Subprime Mortgage Crisis 2008

US subprime mortgage crisis in 2008 was chosen as the REIT market in Malaysia has apparently influenced by the crisis. The event of disaster does not occur suddenly. There are certain reasons that contribute to the development of the crisis.

Story begin with American banks have billions of dollars of mortgage loans to borrower with lower earning, where many of these borrower incapable to repay the loan from 2002 till 2004. As a result, on 30th June 2004, the US Federal Reserve (Fed) began a cycle of interest rate increases that would raise the cost of borrowing than one percent, the lowest level since the 1950s, so that the current level of five point two five percent. The Fed has raised interest rates 17 times in a row as it tries to reduce inflation in the US economy. The Fed stopped increasing in June 2006 and not withdrawn borrowing charge of five point two five percent since.

After that, from August 2005 to 2006, higher borrowing charge began to affect the real estate market in the US as the real estate boom started to relax and bubbles start to appear. Real estate prices are falling and construction projects fall intensely. Subprime mortgages are in default and the default rate raise by the day. Thus, as more borrowers discovered it hopeless to refinance their existing loans. As real estate prices fall, they could not liquidate their assets to pay their mortgages. Those who borrowed to buy a real estate during the boom must be marked down the price to sell their property of by fifty percent to seventy percent.

on 12th March 2007, a huge portion of subprime loans in the US has failed. Shares in New Century Financial, one of the largest lenders in the US sub-prima suspended for fear of bankruptcy. Finally, on 2nd April 2007 New Century Financial declared for bankruptcy. On 4th July 2007, The United Kingdom Financial Services Authority (FSA) promulgated that it will take action against five mortgage brokers that sell sub -prima. Chairman of the US

Federal Reserve, Mr. Ben Bernanke, the crisis in the US subprime mortgage market could expand to $ 100 billion was warned at that time.

Following on 3rd August 2008, the US share market plummeted because many fear in the exposure to problems in the subprime market. On 9th August 2008, France's largest bank, BNP Paribas suspended three investment funds worth 2 billion euros, citing problems in the US subprime mortgage sector. The following day, global stock markets remain under enormous pressure, particularly with London's FTSE 100 index had the terrible drop in more than four years. On 13th August 2007, since the crisis began, the European Central Bank (ECB) was pumping 47.7 billion euros into the financial market, the third cash injection. The US Federal Reserve had cut interest rates at which it lends to banks with a quarter of a percentage point to help the banking sector to deal with credit fatigue. In early November 2008, the S & P 500 fell forty-five percent from the peak of 2007, housing prices fell twenty percent, on average, off their 2006 peak together with futures markets signaling the US another thirty to thirty-five percent potential drop. In December 2008, the Fed further lowered the target federal funds rate to near zero range of zero percent to zero point two five percent as a last attempt to restore stability in the credit market.

Began in February 2007, when this crisis initially to impact to the financial sector, HSBC, which is the Europe's biggest bank, wrote holdings (MBS) Mortgage-Backed Securities subprime related to USD 10.5 billion. At least 100 mortgage companies have either close up, break off operations or were sold in 2007. Top management as Chief Executive Officer of Merrill Lynch and Citigroup resigned within a week of each other at the end of 2007. As of November 2008, about $ 750 billion of subprime-related securities was identified. After the drop of one of the largest investment bank in the US, Lehman Brothers Holdings, and other major financial institutions such as AIG and Bear Stearns Co. in September 2008, the crisis hit a key point. Many major financial institutions such as Fannie Mae, Merrill Lynch, Freddie Mac and Citigroup have had to be rescued because they are on the verge of collapse. During the crisis, hundreds of billions of dollars of credit has dried up and millions of dollars' equity capitalization has been obliterated from international share markets, as conclude it will be the worst economic crisis in the United States since the Great Depression in 1932. From 2007-until early 2009, many economists regard as a grim period of the Great Depression, which saw the unemployment rate rising and declining growth rates in the US economy.

In order to avoid the situation was serious international financial markets from further depth into a spiral, the US Federal Reserve in collaboration with central banks around the world measures taken to deal with the crisis. In November 2008, the US Federal Reserve published it would distribute $ 600 billion to help buy subprime related debt securities or subprime - collateralized government-sponsored enterprises (GSE), to help lower mortgage rates. Subsequently, in March 2009, Federal Open Market Committee (FOMC) decided to buy an additional USD 750 billion worth of debt securities. The Committee also buy up to USD 300 billion of long-term Treasury securities to boost the money supply in the US economy after the crisis. Then on 13th February 2008 the President Mr. George Bush, US President signed into law an economic stimulus package worth USD 168 billion.

After that, Recovery and Reinvestment Act was signed by US President Mr. Barack Obama, in 2009. On 17th February 2009, with USD 787 billion economic stimulus plan with tax cuts and a broad spectrum of spending. Meanwhile, in Asia, when the crisis worsening begin in mid-2008 to early 2009, the Asian market as a whole also feel the impact of rising nearby, including FBMKLCI Malaysia which has dropped to the lowest level at 800 points from a high of 1500 points level in early 2008, get away almost fifty percent.

Since in 1997, the Malaysian market fell the most serious financial crisis in Asia. Therefore, the subprime crisis in the United States certainly has a great impact on the Malaysian financial market as well as economy. Such a division would allow clear observation of the effects of the US subprime crisis to the performance of REITS.

2.3.3 Malaysia Treasury Bill (T-bill) and Inflation Rates

Table 2.4 shows that Malaysian Treasury Bills rates (3-month) in the past 9 years (2007-2015) was historical short-dated. Malaysia Treasury bill rate as a measure of earnings in a given year using the risk-free rate of agent. From 2007 until 2010, the average annual risk-free interest rate was around 2.865% and the a monthly-high of 3.39% in year 2008. As recorded monthly-low rate of 2.00% was noted in February 2009, following of the financial crisis that impact the Malaysian economy in middle of 2008. As able to noticed that from the year 2010, the interest rate is increasing from 2.29% till 3.11% at the year 2015.

Table 2.4: 3 Month Malaysian Treasury bill (T-bill) Rates

Years	3 months Treasury Bill Rates (%)
2007	3.43
2008	3.39
2009	2.05
2010	2.59
2011	2.92
2012	3.04
2013	3.00
2014	3.13
2015	3.11

Source: Bank Negara (http://www.bnm.gov.my/index.php?ch=statistic_nsdp)

Table 2.5: Malaysian Annual Inflation Rates

Years	Inflation Rates (Consumer Price Index
2007	2.0
2008	5.4
2009	0.6
2010	1.7
2011	3.2
2012	1.7
2013	2.1
2014	3.2

Source: Bank Negara
(http://www.bnm.gov.my/index.php?ch=en_publication_catalogue&pg=en_publication_msb
&mth=1&yr=2015&lang=en&eId=box1)

The consumer price index or inflation rates shown in Table 2.5 refers to the general rise in prices for the standard level of purchasing power in Malaysia. From 2007 till 2010, the average inflation rate was 2.425% while achieving a monthly-high of 8.5% in July 2008 and a record monthly flow of -2.4% in July 2009. Inflation corrode the nation purchasing power

and with the Malaysian economy allow an expansive state in 2010 and Expected for several years, rising inflation is bound to happen. There notice that the increase of the inflation rates from 2012 till 2014 with 1.7% and 3.2% respectively.

Nowadays, with the saving rate generally around the same or lower than the local inflation rate, many of the citizen try to search alternative choices of investment plan that allows to hedge against inflation as a way to protect their wealth. Therefore, this research was to determine whether M-REITs are a suitable investment tool to hedge inflation effectively.

2.4   Risk Adjusted Performance Measures

Risk-adjusted performance Measurement included a set of concepts. These concepts may be dependent on the details of their use in context varies. Hence, there are one common direction for all the risk-adjusted performance measures, which is compare the return on portfolio to the risk taken to earn the return. In general, return in risk-adjusted performance measures is measured either by relative returns or by absolute returns, the differences prevailing exactly how dangerous the literature should be taken into. This has caused considerable development of alternative risk-adjusted performance indicators. Therefore, the risk-adjusted performance measures can take many forms (Wiesinger, 2010).

In the past few decades, risk-adjusted performance indicators have gained great importance. The main reason for the expansion is of risk adjusted performance measures is the investment fund as an important investment category. This is because as a investors, they require an effective measurement tool to assess the risk borne by the fund managers of their different performance of the fund capital allocation to select the right choice (Weisman, 2002). The introduction of the Basel II regulatory framework is the second reason, which needed financial institutions to holds a stake in a number of positions as per the risk of accidental loss for shooting buffer. Therefore, not only to financial institutions according to the returns, but also great interest in the efficient allocation of risk capital (Wiesinger, 2010).

The performance measures discussed in this composition can be categorized according to the risk-measure applied in the respective measures. The risk adjusted performance measurement

can be categories into three groups which is performance measures based on volatility, beta of portfolio and, Capital Asset Pricing Model .

2.4.1   Performance Measure Based on Volatility – Sharpe Ratio

In 1966, William F. Sharpe was in his seminal and Journal of Business article, introduced the first risk-adjusted performance measure. From that incident, the risk adjusted performance measure named as Sharpe Ratio. Because of its simplicity, ease of application and thus it has found wide acceptance in the literature and in practice. In further explanation, the Sharpe Ratio measures risk by volatility or standard deviation, which reflects the modern portfolio theory prevalent model of the process of the origin of the Sharpe ratio.

The major flaw of the Sharpe ratio is the concept of volatility represented. In addition, volatility is not treated separately earnings variability and variability of loss. To further explain the Sharpe Ratio penalizes for both upside and downside variability in returns. Therefore, the distinction between gains and losses, preferring to consider the benefits of high variability is an attractive return potential (Zakamouline, 2010). Thus, by measuring risk-adjusted performance with the Sharpe Ratio could conduct that has the disadvantage of high volatility upside assets rank lower than assets with low volatility

Furthermore, if the volatility risk is measured, assuming normally distributed returns. However, starting with the research of (Mandelbrot, 1963), many empirical studies have shown that many theoretical assumptions of normal distribution income asset class does not hold true. There is a considerable body of literature which demonstrates that returns are not normally distributed but often show 'fat tails' (Ekholm & Pasternack, 2005), (Leland, 1999), (Aparicio & Estrada, 2001). To further explanation, that extreme events are more likely than predicted by the normal distribution. This has practically been proven by numerous global financial crises in the past. For alternative investment forms like hedge funds researchers (Brooks & Kat, 2002) (Malkiel & Saha, 2005) (Kosowski, Naik, & Teo, 2007) have shown that this asset class especially exhibits significant amounts of skewness with rare but extreme gains or losses due to their dynamic trading strategies and their holding of derivatives. As a result, some of those researches (Hodges, 1998) (Bernardo & Ledoit, 2000)conclude that

performance evaluation by Sharpe ratio seems doubtful, if the rate of return on non-normal distribution. Thus, the Sharpe ratio formula will be further explained on Chapter 3.

2.4.2   Performance Measure Based on Portfolio's Beta – Treynor Ratio

The Treynor ratio is named after Jack Treynor. But it is not the ratio Treynor intended to develop initially. The ratio originated from his 1965 paper pioneering an innovative concept of performance evaluation that went beyond rate of return: how to evaluate portfolio performance "with the market effect subtracted" (Treynor, 2009). Subsequently, Treynor developed his index to measure reward to volatility, which was later misinterpreted as beta. In 1966, Sharpe expanded upon Treynor's work to develop the reward-to- variability ratio. In the same way that the Sharpe ratio measures excess return per unit of total risk, or standard deviation, the Treynor ratio measures excess return per unit of market risk. The numerator of the Treynor ratio is the difference between the portfolio's return and rate free rate, and which the denominator is the portfolio's beta.

To the further explanation, beta indicated the portfolio's sensitivity to market movements; it quantifies the degree of benchmark-related risk inherent in the portfolio. Thus, beta is calculated as the covariance between the portfolio returns and the benchmark returns divided by the variance of the benchmark. A beta of 1 indicates that the portfolio's returns vary around the portfolio's mean to the same magnitude and in the same direction as the benchmark returns vary around the benchmark mean; it does not mean that the portfolio will have the same returns as the benchmark. Betas greater than 1 or less than 1 indicate corresponding degrees of more or less sensitivity to market movements. A beta of zero does not signify a lack of volatility relative to the market but rather a lack of correlation with market volatility.

The use of beta as the sole measure of portfolio risk is both the point and the criticism of the Treynor ratio. The Capital Asset Pricing Model (CAPM) makes the assumption that a portfolio's total risk comprises systematic risk, or market risk, and idiosyncratic risk specific to individual securities. The CAPM does not reward idiosyncratic risk because it asserts that such risk can be eliminated through proper diversification; market risk, however, is not diversifiable. Because the Treynor ratio does not capture the effect of idiosyncratic risk, it is

most relevant when applied to a diversified portfolio. Investors should be aware that it will understate the relationship of return to total risk for a portfolio that contains diversifiable risk. A poorly diversified portfolio with a relatively low beta but higher total risk can appear to have a superior risk-adjusted return profile compared with a well-diversified portfolio with a higher beta.

Besides, investors should also consider the appropriateness of the benchmark index for the portfolio being evaluated. In the study by Roll (Roll, 1978), even small changes in the proxy used for the market had large effects on risk- adjusted ratios. A portfolio with a low beta relative to a highly volatile index could have a higher Treynor ratio than it would if the ratio were based on a higher beta relative to a less volatile index. Without knowing the benchmark index, an investor selecting the portfolio with the higher Treynor ratio and lower beta might inadvertently choose a portfolio that falls outside his or her risk parameters. Thus, the Treynor ratio formula will be further explained on Chapter 3.

2.4.3   Performance Measure Based on Capital Asset Pricing Model – Jensen Alpha

In 1968, Jensen's alpha, also known as *ex post* alpha, was developed by Michael Jensen. Initially this measurement is used as a tool to identify skilled mutual fund managers in an absolute rather than a relative manner. The main purpose the develop this measurement is to exanimate wheatear the manager able to consistently earn returns higher than expected given by the level of market-related risk taken. Jensen's alpha is derived from the Capital Asset Pricing Model (CAPM) equation. In addition, Jensen Alpha is the difference between the fund's return and the theoretical return required to compensate the investor for the degree of systematic risk taken.

Furthermore, Jensen's alpha is the excess return over and above the expected return derived according to the CAPM. The alpha is expressed in basis points, so evidence of skill is readily observable. A positive alpha indicates manager skill have the better the manager performed on a risk-adjusted basis. Meanwhile, a negative alpha indicates that the manager failed to generate the return that would be expected under the CAPM for the amount of market risk taken.

Because Jensen's alpha is derived from the CAPM and relies on beta, it is also subject to the same constraints as the Treynor ratio. It accounts for market risk only, not total risk, and is sensitive to the choice of market index. In addition, because it is expressed as an actual return, Jensen's alpha will be understated relative to the theoretical return of the CAPM to the extent that transaction costs matter. Thus, the Jensen alpha formula will be further explained on Chapter 3.

2.5   Reviewing Previous Literatures

First of all, invest in equity most dependent on capital gains as a major source of returns to investors. This is during the upward movement of the stock price; investors will receive income if the stock price moves opposite. REIT investment have been expected to have less than favorable to the capital growth due to variation in share prices lower, but they have a stable dividend pay-out quite large and every year. By investments in REITs or real estate market have some similarities where both of them will lead to ownership of real estate investing through the stock market or real estate market physical.

On another hand, the main discrepancy is that REITs can be more easily convert back to cash than real estate as a REIT, investors able to freely of buy and sell REIT shares through the stock market, while the purchase of the property such as real estate and a lot of shops will take a longer time to bargain or searching for potential buyers and sellers. The procedures and the process for buying and selling physical property will become more time consuming and complicated.

2.5.1   REITs Performance Review during US Subprime Crisis

Basse, Friedrich and Bea (2009) indicated that based on their research, during financial crisis in US from 1999 until 2009, they found that investing in REIT is more risky than utility stocks. For 1995 to 2005 was examined by three standard performance measurement methods (Sharpe Index, Treynor Index and Jensen Index), and the performance of Real Estate Investment Trusts (REITs) or Listed Property Trusts (LPT) in Malaysia was tested and found that the risk-adjusted performance of REITs vary over time and the average systematic risks of REITs were slightly higher than the market portfolio during the pre-crisis and crisis

periods but were significantly lower in the post-crisis period (Hamzah, Rozali, & Tahir, 2010).

In addition, both stocks and REITs display mean reversion after large declines and the investment advice was to prevent liquid immediately after a large drop in asset value. Furthermore, there is a research showing that the equity REITs market should be avoided for about four months after a large monthly gain (Bley & Olson, 2003). Besides that, there is a research found that the fall in REIT stock value was about the one-half as large as the drop of non-REIT stocks and REITs like defensive stocks in general that they are less significant declines during the market-wide crisis in New York on 1997 (Glascock, Michayluk, & Neuhauser, 2004).

2.5.2   Performance Review: REITs, Stock Market and Property Market

REIT returns change abroad with the share market in the interim, but often closely linked to a longer holding period (Corgel & Rogers, 1991). However, REIT returns to 'better reflect changes in rents and property values underlying the trust portfolio.

In addition, the REIT equity returns appears to be more strongly related to those in commercial property or closed funds unsecuritised (Myer & Webb, 1993). Return on equity REIT Index found Granger cause unsecuritized returns for most property index.

Furthermore, there is a study on the performance of the Malaysian REIT shares compared with indices of Bursa Malaysia from the period June 2007 to June 2009 (Tan , 2009). Stock index relationship between returns and Malaysia REIT returns are not sure but low and Malaysia REIT systematic risk is lower compared with the wider market. In the research, the results show that the performance of Malaysia REIT affected by movements in the stock exchange over the same period through the Granger Causality.

2.5.3   Summary of Review on Previous Literatures

In Malaysia, there are numerous researches contributed their study in to Malaysia Real Estate Investment Trusts. Low Soo Wah and Answar Johari (2014) which is using Sharpe Ratio,

Treynor Ratio, Jensen Alpha and M-square to measure the performance of M-REITs during 2007 till 2012 based on the FBM KLCI as benchmark which the results shown that the findings indicate that beta values are all less than one and total risk of REITs mostly come from unsystematic risk component. Besides, low R-square values equivalent to low reliability of beta coefficients, and can be concluded that M-REITs are very poorly diversified. In addition, the researcher found that Sharpe Ratio and M-squared evaluation than the Treynor Index and Jensen Measures.

Another researchers Abhay Kaushik, and Anita K.Pennathur (2012) measured the real estate fund over the period of 1990 till 2008 in US based on US REIT Index by using Tryenor Ratio and Jesnon Ration with the result of indicated that fund managers have under performance for the period 1990 till 2008. Meanwhile, when the researcher breakdown the measurement into before global financial crisis and post global financial crisis, the findings indicated that for the period 1990 till 2006, fund managers were out performed. As conclude that results indicated mutual fund investors can earn superior return in large in size and rebalanced more frequently.

In addition, Tiong Chai Ping, Rohaya Abdul Jalil (2015) to reviewed the performance of Malaysia REITs based on property type. The researches concluded that majority of the pervious studies indicated that underperformance of Malaysian REITs was linked to the unique characteristics of REITs' property allocation. Besides, M-REITs' portfolio has used property type as determinant to examine their risk and return performance. Furthermore, the researchers concluded that the property type is the important determinant which can influence the performance of M-REITs.

Furthermore, based on Anuar Alias and Soi Tho C.Y (2011) performance comparison of M-REITs and UK-REITs by using Total Revenue, Net Income, Total Return, Dividend Yield, Price to Earning Ration (PE Ratio) which is examined six companies was selected in both countries from the period 2007 till 2008. As the result, the researches concluded that total revenue is the main factor affecting the performance for both M-REITs and UK-REITs.
Moreover, Ong Tze San,Teh Boon Heng and Chong Mei Pong (2011) measured the performance of M-REITs from 2005 till 2010 based net asset value (NAV) method. There were total thirteen M-REITs selected. In this study assessed the noise theory and explains

why Malaysia REITs trade at NAV premium and NAV discount. As the researcher concluded the overall M-REITs are traded at NAV premium.

With further extend to the study, Ong Tze San (2012) once again measured the performance of M-REITs based on risk adjusted measurement tools such as Sharpe ratio, Treynor ratio and Jensen Alpha with total fourteen M-REITs companies selected and the sampling period from 2005 till 2010. The research separates the sampling data into three segment, which are before global finance crisis (GFC), during GFC and post GFC. As the result shown that based on Sharpe ratio and Treynor ratio measurement, most of M-REITs under performed the market portfolio in pre, during and post GFC period. Meanwhile, Jensen alpha measurement show that REITs under performed the market portfolio in the pre GFC but out performed in during and post GFC period.

Table 2.6: Summaries of Existing Literatures on REITs

Authors	Published Title	Sample Used	Methodology	Finding (s) / Conclusion (s)
Low Soo Wah, Answar Johari (2014)	Risk Adjusted Performance of Malaysian Real Estate Investment Trust Funds	M-REITs, KLCI, weekly price from 2007 till 2012	Sharpe Ratio, Treynor Ratio, Jensen Alpha and M-Squared	The results indicate that beta values are all less than one and total risk of REITs mostly come from unsystematic risk component. Low R-square values equivalent to low reliability of beta coefficeints Sharpe Ratio and M-squared evaluation than the Treynor Index and Jensen Measures.
Abhay Kaushik, Anita K.Pennathur (2012)	An Empirical Examination of the Performance of Real Estate Mutual Funds	Real estate mutual funds , US REIT Index for period 1990 – 2008,	Treynor Ratio and Jensen Alpha	Initial result shown fund manager no over performance for the period 1990 -2008. Fund manager out perform for the period 1990 – 2006 after accounting for the down market on 2007-2008. Results show that mutual fund investors can earn superior return in large in size and rebalanced more frequently.

Tiong Chai Ping, Rohaya Abdul Jalil (2015)	A Literature Review on Diversification Strategy of Malaysian Real Estate Investment Trust (M-REIT) and It's Performance		Review of previous studies	Underperformance of Malaysian REITs was linked to the unique characteristics of REITs' property allocation. REITs' portfolio has used property type as determinant to examine their risk and return performance. This may show that the property type is the important determinant which can influence the performance of REITs
Anuar Alias, Soi Tho C.Y (2011)	Performance Analysis of REITs: Comparison Between M-REITs and UK-REITs	6 companies was selected in both country with the period of 2007 till 2008	Total Revenue, Net Income, Total Return, Dividend Yield, Price to Earning Ration (PE Ratio)	Total revenue is the main factor affecting the performance for both M-REITs and UK-REITs
Ong Tze San (2012)	Malaysian Real Estate Investment Trusts: A Performance and Comparative Analysis	14 nos of M-REITs monthly price , KLCI Index from 2005 till 2010	Sharpe Ratio, Treynor Ratio, Jensen Alpha.	Based on Sharpe and Treynor measurement, most of M-REITs under performaed the market portfolio in pre, during and post

				Global Finance Crisis (GFC) period. Jensen measurement show that REITs under performed the market portfolio in the pre GFC but out performed in during and post GFC period.
Ong Tze San, Teh Boon Heng, Chong Mei Pong (2011)	A Study on the Performance of Malaysian Real Estate Investment Trusts	13 nos of M-REITs for the period 2005 - 2010	Net Asset Value Approach	M-REITs are traded at NAV premiums have superior historical and future earning capabilities, organizational and operation efficiencies and quality of management.

2.6   Chapter Summary

This chapter provides information on Bursa Malaysia and throughout the study using, and then since its launch, is discussed in detail discussed M- REITs background and development of several Bursa Index. In addition, the study also compared the current situation REIT market in Malaysia and other Asian counterparts between. Finally, in order to promote domestic REIT market, the efforts made by the Government of Malaysia has been described**.**

CHAPTER 3

RESEARCH METHODOLOGY

3.0   Introduction

Research methodology is a process which is step-by-step used to determine an empirical study in an organized manner. It gathers and analyses all relevant data of the research. Besides, the research methodologies also enable to understand the analysis of the outcomes. In addition, research methodology also portraying the entire understanding of the research steps. Research methodology refers to an overall approach to the research process, from the theoretical underpinning to data collection and finally data analysis (Jill & Roger, 1997).

In the chapter three, the identified research design and data sourcing are defined for the research. The primary aim is to explain and analyze how the research would proceed. However, the research methodology of this research will clearly demonstrates the research design, data collection methods, sampling techniques, fieldwork procedures and data analysis methods in order that will be able to explain the aims of this research.

3.1   Research Design

Research design is an organized plan describing the procedures and methods that are required in collecting and analyzing the collected data. It will allow a step-by-step guideline that plans on how to carry out the research project. The objectives of the research is to find out during the preliminary stages and are included in the design to ensure that the data collected according for problem settled.

A research design also could bee explained as the structure and plan of evaluation so precise and to formulate finding to research questions. Besides, research design consists of the outlines for collection, measurement, result of operational final analysis of information obtained. Generally, it explains both the structural question and strategy review investigation used to obtain experimental findings for problems.

Research design encompasses many options to make rational decisions (Sekaran, 2003). Issues pertaining decisions on the purpose for research such as descriptive, exploratory, hypothesis testing. Moreover, research design temporal aspects like time horizon and the degree at which data will be analyzed like unit of analysis are extremely crucial to it. A researcher had mentioned that a research design provides a guideline for the collection and analysis of data (Bryman & Bell, 2007). Therefore, the design of the study given the choice of a series of studies have shown that in the process of priority determined size.

In this research, longitudinal studies are used. Longitudinal studies are studies whereby the researcher would exanimate phenomena in more than one direction in time to response to the research questions (Sekaran, 2003). Totally, four basic method of research design to be used in the research, namely observation, surveys, experiments, as well as secondary data.

In this research, secondary data to be is used to analyses the performance of M-REITs and draws a comparison with the performance of, FTSE Bursa Malaysia Kuala Lumpur Property Index (FBMKLPI). Besides that, 3-month treasury bill to be use as the free rate during the exanimate the performance tools.

3.2   Method of Data Collection

In this research, secondary data is being used in this research. The secondary data were collected from several sources such as directly from Bursa Malaysia official website, Bank Negara Malaysia official website as well as Yahoo Finance.com which is a database used by registered equity securities firm.

Firstly, an in-depth examination into the databases for weekly each M-REITs adjusted close price, FTSE Bursa Malaysia Kuala Lumpur Property Index and three-months Malaysian T-bill rates for the period of nine whole years. As we looked into the starting years for each prices and indexes, Malaysian Listed Property Trusts (LPTs) had been renamed as Malaysian Real Estate Investment Trusts (REITs) since 2005. This seems to be more consistent with the standardized term. Not only this, during research period, on since 6th July 2009, Kuala Lumpur Composite Index (KLCI) was renamed into FTSE Bursa Malaysia Kuala Lumpur Composite Index (FBMKLCI) and various improvements were executed. In addition, Kuala Lumpur Property Index is a capitalization-weighted index of all property stocks and namely FBM Kuala Lumpur Property Index.

Because there is no parallelism between the formation of the index and the number of companies under the M-REITs index, the data collected is not consistent and not parallel in terms of the time horizon of comparison. In order to solve the problem, the average-weighted indexes of prices in the last sampling date to b matched with existing data which availability for each M-REITs.

Lastly, average of the M-REITs to be used from different data. In this research, there are total three independent variables or entity factors to be examined which are M-REITs stock prices, FBM Kuala Lumpur Property Index and annual dividend yields of M-REITs. All these factor will then be used to determine entity's performances of M-REITs and compared with the market benchmark FBM Kuala Lumpur Property Index is to identify relative performances.

Table 3.1: Definition of Independent and Dependent Variables

Independent Variable	Name	Definition
X_1	Weekly M-REITs stock price	Represent stock prices of 16 MREITs companies from the year 2007 to 2015, subject to establishment years
X_2	FTSE Bursa Malaysia Kuala Lumpur Property Index	Represents performance of Malaysian property sector companies from year 2007 to 2015, subject to establishment years
X_3	Beta Value for each M-REITs	Represents M-REITs volatility which compare with market benchmark, subject to establishment years.
Y_1	Performance of each MREITs relative to Malaysian equity indices as well as MREIT market to regional REIT markets performance	Measured using M-REITs' annual returns, standard deviation, Sharpe Ratio, Treynor Ratio, Jensen Alpha.

3.3   Design of Sampling Data

Sampling frame is the list of elements where samples may be drawn (Zikmund, 2003). The sampling design used in this research is not a probability sample. In addition, the sampling of nonprobability defined as the probability of any particular person of the population is unknown. FBM Kuala Lumpur Property index, M-REITs stock prices, which archives obtained from Bursa Malaysia and Yahoo Finance databases while Treasury bill rate and the annual inflation rate was obtained from Bank Negara Malaysia (BNM) the statistical database. Thus, the sampling design of the study was non-probability sampling can be concluded.

3.4   Theoretical Framework

A conceptual model of how a person expresses the relationships among various dimensions that have been identified as vital to the problem is called theoretical framework (Sekaran,

2003). By the way of explanation, theoretical framework will enable any readers to easily comprehend the relationships of the factors and variables related to the issue.

A variable nothing can assume numerical values or different absolute. The dependent variable is the criterion to predict, whereas the independent variables are variables that are expected to affect the dependent variable. The value can be altered or change independently of any other variable.

Figure 3.1 Theoretical Framework

Independent Variables   Dependent Variable
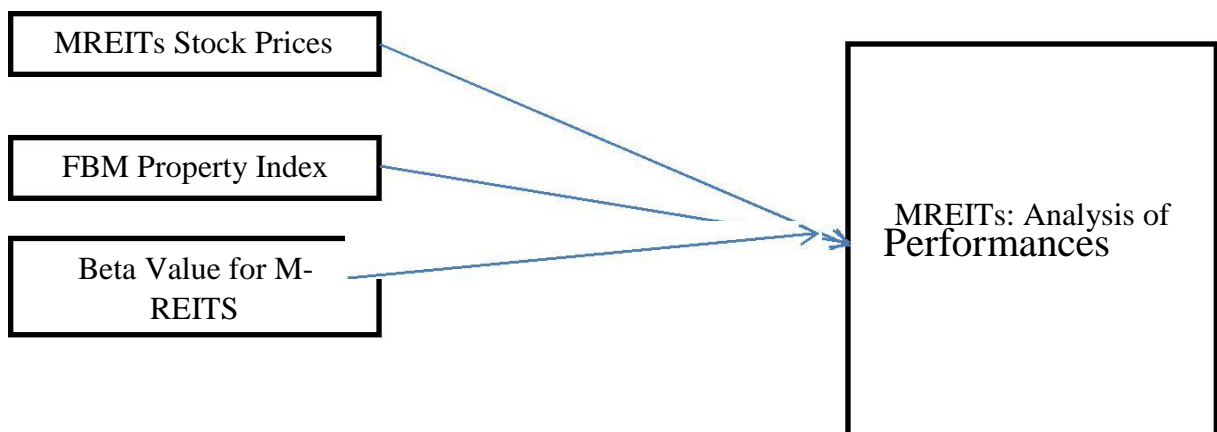
3.5   Measurement of Data

In order to measure each of the variables listed, weekly returns from raw data for all M-REITs prices and FBM Kuala Lumpur Property Index respectively. M-REITs stock prices or returns are used as a proxy for value compared to other index. In the research, the M-REITs index consisting of all 16 REITs listed companies in Malaysia. The sample to be used in this research coincidentally falls under the entire data for M-REITs sector in Malaysia.

In 2010 to 2013, there are four new M-REITs listings (SUNREIT, CMMTREIT, Pavillion REIT and KLCC REIT) into Bursa Malaysia, the sample period has been chosen to make a better analysis on the performance of M-REITs with similar time period coverage. Based on 2007 to 2015. This will ensure our findings will not have any impact towards M-REITs performance from the financial crisis.

Meanwhile, the consequences from latest financial externalities to be determined, especially the United State subprime mortgage crisis in 2008 that affect equity markets around the world. The M-REITs weekly stock returns were acquired in advance of price adjusted and weighted M-REITs shares on the last day of the week. The formula for the weekly return in M-REITs share price is calculated by:-

$$R_t = \frac{P_t - P_{t-1}}{P_{t-1}} * 100, \text{ whereby}$$

Rt = M-REIT share return for week t.

Pt = Adjusted share price of M-REIT at last day of week t.

Pt-1 = Adjusted share price of M-REIT at last day of week prior to week t (Previous week).

Correspondingly, the weekly returns for FBM Kuala Lumpur Property Index are calculated by:-

$$R_{index_t} = \frac{I_t - I_{t-1}}{I_{t-1}} * 100, \text{ whereby}$$

Rindext = Equity index return for week t.

It = Closing index value at last day of week t.

It-1 = Closing index value at last day of week prior to week t.

Weekly returns for M-REITs share prices and equity indices are computed based on weekly adjusted closing prices would be highlighted. As such, 9 years total annual return of each M-REIT by adding up all the weekly returns of each year to be calculated. In the research, the total annual return for each M-REITs, FBM Kuala Lumpur Property Index and M-REITs share price to be computed. Furthermore, the annual dividend yields M-REITs is calculated and corresponds to the rate of inflation to determine in Malaysia to determine whether

investment in M-REITs provide min to <u>hedge against inflation. The formula</u> to compute annual M-REIT dividend yields (%) is as follows: -

$$>?@67 ;9:9;<4; A6B?5@C D?E B<6E @ \frac{344567\ 89:9;<4; =9<7;}{D?E\ @h< B<6E @} = 3:<E6F< C@?GH AE9G<$$

Microsoft Excel to be used for analyze and study the raw numerical data as well as calculations and tabulate the data.

3.6 Hypotheses

In order to determine the experimental relationship and the meaning from the independent variables and dependent variables, few hypothesis has to be formed. The hypothesis is a proposal that has not been proved or assumption that seem to explain the facts or phenomena. Furthermore, a hypothesis is present when a proposition is formulated for empirical testing, which can be explained as declarative statements about the relationship between two or more variables (Cooper & Schindler, 2008). In addition, a hypothesis can be defined as a logically conjectured relationship between two or more variables expressed in the form of a testable statement (Sekaran, 2003). In conducting this research and to meet the objective of the propose research, certain variables were examined based on the hypothesis established. As a result, the null hypotheses (H_0) and alternate hypotheses (H_1) that are formed for this research is as follows: -

Hypothesis 1

To examine the Beta value for each M-REITs share price covariant to FBM Kuala Lumpur Property Index:

H_0: â<1 (it signifies the underlying instrument is likely to move less, for example with lower volatility, than the market movement)

H_1: â>1 (it signifies the underlying instrument is likely to move more, for example with higher volatility, than the market movement)

Hypothesis 2

To examine the performance measurement between M-REITs index based on Sharpe ratio:

H_0: SI<0 (A negative Sharpe Ratio shows that the elemental of the particular investment has gained a worse return which compare to risk free rate)

H_1: SI>0 (A positive Sharpe Ratio explains that the elemental of the particular investment has gained an exuberance return over which compare to risk free rate)

Hypothesis 3

In order to examine the performance measurement between M-REITs index by using Treynor ratio, we suggest that

H_0: T<0 (A negative value of Treynor ratio signifies the investment has not performed up to a risk free instrument)

H_1: T>0 (A positive value of Treynor ratio signifies the investment has performed up to a risk free instrument)

Hypothesis 4

In order to examine the performance measurement between M-REITs index by using Jensen's Alpha, we suggest that

H_0: JA<0 (A negative Jensen alpha indicates that the investment has performed underperformed the market)

H_1: JA>0 (A positive Jensen alpha indicates that the investment outperformed the market)

3.7 Sampling Size

The suggested sample size of this study for the independent variables of M-REITs, FBM Kuala Lumpur Property Index weekly for a total of nine years, from 2007 to 2015. For Malaysian Treasury bill rates, the size of sampling rates of weekly data for the same period.

Table 3.2 shown on the study period for each of the M-REITs, as noticed that not all the M-REITs are available from Nov 2007, this is because some of the M-REITs listed in Bursa Malaysia later than 2010, for example Sunway REIT, Pavillion REIT, CMMT REIT and KLCC REIT. As a result, the average for the study in take into consideration in order to generate the fair data and result.

Table 3.2 Study Period for each M-REIT

No	REITs	Study Period		No
		From	Till	Observation
1	Amanah Harta Tanah PNB (4952.KL)	24/08/10	28/12/15	282
2	Al-'Aqar Healthcare REIT (5116.KL)	07/11/07	28/12/15	425
3	AmFirst Real Estate Investment Trust (5120.KL)	07/11/07	28/12/15	425
4	AmanahRaya Real Estate Investment Trust (5127.KL)	07/11/07	28/12/15	425
5	Atrium Real Estate Investment Trust (5130.KL)	07/11/07	28/12/15	425
6	Axis Real Estate Investment Trust (5106.KL)	07/11/07	28/12/15	425
7	CapitaLand Malaysia Mall Trust (5180.KL)	16/07/10	28/12/15	252
8	Hektar Real Estate Investment Trust (5121.KL)	07/11/07	28/12/15	425
9	IGB Real Estate Investment Trust (5227.KL)	21/09/12	28/12/15	172
10	KLCC Real Estate Investment Trust (5235SS.KL)	02/04/13	28/12/15	144
11	MRCB-Quill REIT (5123.KL)	23/08/10	28/12/15	280
12	Sunway Real Estate Investment Trust (5176.KL)	08/07/10	28/12/15	287
13	Pavilion Real Estate Investment Trust (5212.KL)	07/11/07	28/12/15	212
14	Tower Real Estate Investment Trust (5111.KL)	07/11/07	28/12/15	425
15	UOA Real Estate Investment (5110.KL)	07/11/07	28/12/15	425
16	YTL Hospitality REIT (5109.KL)	07/11/07	28/12/15	425

Based on the weekly data recorded, the model inclined to be normal because of the distributed as according to Central Limit Theorem, the sample size is large enough to assume that the normality of data distribution is present.

3.8   Method of Data Analysis

The data analysis will be explained how gathered data is being determined, analyzed and interpreted to match the objectives of the research. In order to gain a improve and precise results, researchers utilize various analysis methods and hypothesis testing. The following subsection describes the analysis methods that we plan to use in our data analysis: -

3.8.1   Total Risk

Total risk measurement constitutes of both systematic risk and unsystematic risk. In another word, the total risk or variance of return for each M-REITs is divided into its systematic and unsystematic risk which formed by the formula below as show by Levy and Sarnat (1984) and employed by Kim, Zheng, & Mattila (2002) and Low & Anwar (2014) in the context of REITs.

$$J_{-}^{K} = L_{-}^{K} \cdot J_{N}^{K} + J_{0}^{K}$$

where

$\acute{o}_i^2$ = Total risk or the variance of return for M-

REITs $\hat{a}_i^2$ = Square of Beta of M-REIT i

$\acute{o}_m^2$ = Variance of return of the market portfolio

$\hat{a}_i^2 \cdot \acute{o}_m^2$ = Systematic risk of M-REITs i

$\acute{o}_e^2$ = Unsystematic risk of M-REITs i which also represents the portion of the total risk that can be diversified away.

Additionally, as explained in Levy and Sarnat (1984) and Kim, Zheng & Mattila (2002). The diversifiability measurement could be calculated by the ratio of unsystematic risk to total risk for instant $\acute{o}_e^2 / \acute{o}_i^2$.

This ratio will give the information on whether further diversification is required and whether it is synonymous to one minus the R-squared value (1 - R -squared). If the ratio is closer to 0, it signifies less unsystematic risk remains in the portfolio and the portfolio's risk constitutes mainly of systematic risk which is not need to be diversifiable. However, if a portfolio's

diversifiability measurement value ratio that is closer to one, it signifies that the M-REITs has a larger segment of unsystematic risk that is meant to be diversified aboard.

The systematic risk or some called as market risk are political risk and inflation risk which can not be diversified and is commonly determined as beta, â. Meanwhile, the unsystematic risk could be minimized or eliminated by using circumstance which are manageable by the market. Furthermore, the representative level of risk with the beta is slightly more than the asset portfolio represents individual asset risk.

3.8.2 Standard Deviation

The standard deviation, ó, which commonly used to measure the spread of diversity, to express the diversity of the population and the confidence measure statistical conclusions. In the research of economics, the standard deviation is used to determine the amount of variability or risk investment returns. The higher of the standard deviation, the higher the amount of investment risk.

In addition, the standard deviations of the average calculated for each M-REITs, FBM Kuala Lumpur Property Index by summing the annual standard deviations for each period following divided by the number of years including the period. Here, from each M-REITs mean return, standard deviation to be used to measure the spread of individual M-REITs return.

Standard deviation could be formulated and expressed as below:

$$J = \sqrt{\frac{\sum_{\cdot\cdot UV} (Q_{\cdot} - S)^K}{4 - 1}}$$

, whereby

Xi = weekly return (%)

μ = the mean return for the year

(%) n = sample period (years)

3.8.3 Sharpe Ratio

The main aim of this research is to determine the performance of M-REITs with compare with all FBM Kuala Lumpur Property Index as the market benchmark. Sharpe ratio is the degree of performance measurement tools for M-REITs along other market indexes over a stipulated sampling period. Sharpe ratio gauges the performance of investment or security performance to get the reward per unit of risk taken.

The main key aspect of the Sharpe Ratio is that takes into account the cumulative risk of the security or portfolio. In order to use this, portfolio's return or security's return, risk free rates of return and the standard deviation of it must be determined in advance. The higher of Sharpe Ratio value is more attractive by investor based on the Sharpe ratio decision rules. This is because, Sharpe Ratio is expressed as a ratio of risk premium could also be described as net rate of return on riskless rate to the total risk position, which also expressed as a standard deviation of return on a particular investment.

As the risk-free rate of return, average return over a stipulated time period of short-dated (3-months) Malaysian Treasury bills be used. The calculation for Sharpe Ratio is shown as below: -

$$SR = \frac{r_i - r_f}{\sigma_i}$$

whereby,

SR = Sharpe Ratio

r_i = portfolio i's return

r_f = risk free rate

σ_i = standard deviation of portfolio i

With the Sharpe Ratio, the average Sharpe Ratio for each M-REITs can be tabulated. After that, rank and sort sampling M-REITs companies could be form. FBM Kuala Lumpur Property Index which according to the Sharpe Ratio measurement and finally determine each performance of M-REITs during the sampling periods.

A positive Sharpe Ratio explains that the elemental of the particular investment has gained an exuberance return over which compare to risk free rate. Likewise, a negative Sharpe Ratio shows that the elemental of the particular investment has gained a worse return which compare to risk free rate on a risk-adjusted basis.

3.8.4 Treynor Ratio

The Treynor Ratio is an alternative risk-adjusted performance character that acts the same to the Sharpe Ratio. Both Treynor ratio and Sharpe Ratio gauge how great an investment tools pays the shareholders for a given degree of the risk. Treynor Ratio measures exuberance gain which higher than the risk-free rate per unit of risk. As the main differences between Sharpe ratio and Treynor ratio is one using standard deviation as the risk measure and the other using beta.

$$> = \frac{E_. - E_X}{L_.}$$

whereby,

T = Treynor Ratio

r_i = return of portfolio i

r_f = risk free rate

L_i = beta of portfolio i

In addition, Treynor Ratio is commonly used to measure well diversified investment or portfolio. Thus, similar betas is necessary for comparing investments or portfolio. To explain further, it is a very good investment when reviewing the same set of peer systematic risk. A positive value of Treynor ratio indicates that the portfolio able to generate more return compare to the risk which the risk benchmark by the market . Meanwhile, negative value of Treynor ratio signifies the investment has not performed up to a risk free instrument.

3.8.5 Jensen Alpha

Alpha is a coefficient directly proportional to additional return of a portfolio over the expected return for the expected risk as determined by its beta. Thence, alpha is measured by the basic values of the companies in the portfolio varies with the beta, which calculates the return on such portfolio volatility. The Jensen Alpha (Jensen index) which developed by Michael C. Jensen, by using the Capital Asset Pricing Model (CAPM) to determine the rate of the return that is dedicated strictly due to market volatility as measured by the firm's beta in relation to the market beta.

By simplify, Jensen's alpha = Portfolio Return − [Risk Free Rate + Portfolio Beta * (Market Return − Risk Free Rate)]

$$á_Z = R_Z − [R] + â_Z(R_- − R])]$$

$á_a$ = Jensen's Alpha for M-REIT i

R_i = return of M-REIT i

R_f = risk free rate

2.4 $_i$ =beta of portfolio i

R_m = return of portfolio market

As conclude, positive value of alpha indicate the M-REITs has exceeded compare with the market, meanwhile a negative value of alpha explains that the M-REITs has not up to the performed which compare to the market.

3.8.6 R-Squared

R-squared is a statistical measurement that serve as the indication of fund or security movement that can be explained by changes in the benchmark index. For example, fixed-income securities, the benchmark is the Malaysia Treasury Bill, meanwhile for M-REITs the benchmark is the FBM Kuala Lumpur Property Index.

$$! = \frac{L_{-K} \cdot J_{N}K}{J^{-K}}$$

Where,

R = R-squared Value,

L^K = Square of portfolio i's beta

$ó_m^2$ = Variance of return of the market portfolio

$â_i^2 \cdot ó_m^2$ = Systematic risk component of M-REITs

$i\ ó_i^2$ = Variance of return of the portfolio i

The range of R-squared values range from 0 to 100. An R-squared of 100 means that all movements of M-REITs are completely explained by movements in the FBM Kuala Lumpur Property Index. A high R-squared in value higher than 85 indicates the M-REITs performance patterns have been in line with the FBM Kuala Lumpur Property Index. Meanwhile if M-REITs with a low R-squared value lower than 70 indicated that does not act much like the FBM Kuala Lumpur Property Index.

A higher R-squared value will indicate a more useful of Beta. For instant, if a M-REIT has an R-squared value of close to 100 but it Beta's vale is less than 1, it is most likely offering higher risk-adjusted returns, vice verse a low R-squared means as beta could be ignored.

In some areas, it is fully expected that R-squared values will be low. For example, any fields that trying to predict human behavior, such as psychology will have a value of R-squared values lower than 50%. Humans certainly harder to predict than, physical processes.

Moreover, if R-squared value is low but the predictors are statistically significant, they will still be able to have key conclusions as to how variations in the predictor values are synonymous with changes in the response value. No matter what, the coefficients of R-squared marks mean change in the response to a unit change in the predictor, while assuming that the other predictors are remain constant.

A low R-squared would be challenging when to show a reasonable prediction right as another meaning R-squared have a small enough predication interval. How much variability in the

data determine how much accuracy is the R-squared. Despite the high R-squared required for accurate predictions, it may not be case for all studies.

A higher R-squared do not necessarily signifies that the model has appropriate fit. However, a variety of bias can happen when the linear model is missing an important predictor, polynomial terms, and interaction terms. This are known as specification bias, and due to underspecified model.

3.9   Chapter Summary

In conclusion, this chapter elaborate the design of research, samples and sample sizes to be used, methods of secondary data gathering and data analysis methodologies. In this research, theoretical and empirical frameworks have been shown to get a better understanding on the overall significant interconnection between the dependent variables and independent variables used.

According to the order, appropriate data is being selected and identify the sampling sizes. After that sampling data is gathered, following by test the sampling data with the proposed measurement tools and analysis procedures of manipulate the total returns, standard deviations, R-squared as well as the risk adjusted measurement tools, such as Sharpe Ratio, Treynor Ratio, Jensen Alpha and rankings. From the above assessment and investigation, relevant outputs and data which would be used to fulfil the research objective in this research.

CHAPTER 4

ANALYSIS AND RESULTS

4.0   Introduction

In this chapter, all the sampling data from various sampling periods will be analyzed and interpreted step-by-step. Firstly, standard deviation of returns as volatility of each M-REITs and FBM Property indices as the market portfolio will be analyzed. Secondly, the variance of return or the total risk for each M-REITs is explained.

Subsequently, correlation analysis for each M-REITs will be compared with the FBM Kuala Lumpur Property Index. In the fourth section, risk adjusted performance of each M-REITs and FBM Kuala Lumpur Property index are being measured according to Sharpe's Index. It will be followed by Treynor's Ratio to evaluate the performance of each M-REITs' excess return per unit of risk in alliance movement to the market.

Jensen's alpha will be used to determine how much excess returns on each M-REITs has generated over market returns. Finally, a combination of the three risk adjusted performance measurement readings along with the best and most valuable M-REITS to be invested will be determined.

4.1   Standard Deviation or Volatility for M-REITs

Table 4.1 represents descriptive statistics of average weekly returns over the nine-year period from November 2007 till December 2015 for each M-REITs and market portfolio as indicated in the FBM Kuala Lumpur Property Index. As reported, the overall average weekly

return of 0.1688% is no very close to the average weekly return of 0.0684% for market portfolio. The KLCC REIT on retail and office related M-REITs observes the highest average weekly return of 0.4435% and it outperforms all other M-REITs sectors while AmanahRaya REIT has the lowest average return of 0.0948%.

In terms of standard deviation on return, KLCC REIT on retail and office sector records the highest of return volatility of 2.8802% while office REIT, namely MRCB-Quill REIT has the least volatile return of 1.5514%

Table 4.1: Average Weekly Return and Standard Deviation of M-REITs

No	REITs	Average Weekly Return (%)	Standard Deviation (%)	Weekly Return Minimum (%)	Weekly Return Maximum (%)
1	Amanah Harta Tanah PNB (4952.KL)	0.0948%	1.6986%	-8.4084%	9.1803%
2	Al-'Aqar Healthcare REIT (5116.KL)	0.2060%	2.4483%	-9.1241%	19.6736%
3	AmFirst Real Estate Investment Trust (5120.KL)	0.0878%	1.7071%	-8.3829%	7.8925%
4	AmanahRaya Real Estate Investment Trust (5127.KL)	0.0637%	2.6937%	-14.8214%	13.9241%
5	Atrium Real Estate Investment Trust (5130.KL)	0.1210%	1.7812%	-8.2547%	5.9305%
6	Axis Real Estate Investment Trust (5106.KL)	0.2991%	2.5347%	-49.2230%	103.0603%
7	CapitaLand Malaysia Mall Trust (5180.KL)	0.2129%	2.5518%	-7.6923%	10.0537%
8	Hektar Real Estate Investment Trust (5121.KL)	0.0959%	2.6930%	-12.8713%	12.9011%
9	IGB Real Estate Investment Trust (5227.KL)	0.0762%	1.8004%	-4.6729%	6.0870%
10	KLCC Real Estate Investment Trust (5235SS.KL)	0.4435%	2.8802%	-7.0209%	17.7326%
11	MRCB-Quill REIT (5123.KL)	0.1404%	1.5514%	-7.8868%	5.9361%
12	Sunway Real Estate Investment Trust (5176.KL)	0.2654%	2.0522%	-6.0436%	6.9040%
13	Pavilion Real Estate Investment Trust (5212.KL)	0.2953%	2.4557%	-6.0156%	7.8313%
14	Tower Real Estate Investment Trust (5111.KL)	0.0709%	1.8679%	-7.9561%	0.0000%
15	UOA Real Estate Investment (5110.KL)	0.0792%	1.8587%	-7.1345%	13.2104%
16	YTL Hospitality REIT (5109.KL)	0.1165%	1.5556%	-6.9565%	7.0000%
	Average	0.1668%	2.3117%	-10.7791%	15.4573%
17	Market Portfolio : FBM Kuala Lumpur Property Index	0.0684%	2.5507%	-12.3530%	11.3417%

4.2   Risk Features for M-REITs

Table 4.2 represents the risk features of each Malaysia Real Estate Investment Trusts, R-square value, and the diversifiability which is determined as a proportion of total risk that is due to the unsystematic components. Findings indicate that office related M-REITs have relatively higher market risks than other M-REITs sectors. For instance, KLCC REIT has the highest percentage of systematic risk marked at 0.68821% followed by Tower REIT and UOA REIT with systematic risk values of 0.44111% and 0.42953% respectively.

Meanwhile, hospital related REIT such as Al-'Aqar Healthcare REIT recorded the lowest systematic risk of 0.00595%, followed by Amanah Harta Tanah PNB and Hektar REIT with systematic risks levels of 0.02536% and 0.05084% respectively.

For the beta ("$^{\#}$) value that is greater than one denotes the underlying instrument is likely to move more, for example due to greater volatility than the market movement. If it is less than one, it signifies the underlying instrument is likely to move less, for example with lower volatility, than the market movement. A beta equal to one indicates that the instrument is likely to move in tandem with the market.

In the study period, it was found that all M-REITs are less than one, averaging at 0.18785. There is not no surprise that M-REITs have the low beta values since M-REITs are secured by real estate properties and thus, they incline to have a lower degree of market risk. KLCC REIT recorded the highest beta values of 0.32524 while Al-'Aqar Healthcare REIT recorded the lowest of 0.03025.

Thus, instrument betas can not be viewed separately. In other words, a value of 0.6 may not necessarily superior than 1.2. These results can be evaluated together with the strategy of portfolio construction and entities in view of the market. As a result, the higher beta viewed as better for the bull market where the price of the instrument is expected to increase at a rate faster than the market index. Besides, a lower beta viewed more favorably when an instrument weaker prices are expected to fall at a slower rate than the market.

Furthermore, as all M-REITs' beta values are less one, it shows that M-REITs has slightly

less systematic risk than the market portfolio FBM Kuala Lumpur Property Index. To conclude this subsection, it can be said that M-REITs are defensive portfolio.

4.3   R-Square for M-REITs

The R-square column indicates the percentage of M-REITs' total variability of returns which has been explained by the systematic factors as discussed above. It explains the relationship that exists between the total variability, systematic variability and specific variability of M-REITs.

Table 4.2 indicates that the R-square value for all M-REITS are extremely low with an average of 0.06363, which indicates that all the M-REITs funds are very poorly diversified. In average, the total risk of M-REITs which is caused by the unsystematic risk component is very high, so much larger than the total risk attributed to the systematic risk component as indicated. However, the average diversifiability is only valued at 0.93637. The lowest and the highest value ranged from 0.86296 and 0.99901 which is MRCB-Quill REIT and Al-'Aqar Healthcare REIT respectively. On short, such high diversifiability values suggest that there are tremendous opportunities for diversification.

Table 4.2: Risk features of M-REITs

No	REITs	Beta	R-Square	Total Risk	Systematic Risk	Unsystematic Risk	Diversifiability measure
1	Amanah Harta Tanah PNB (4952.KL)	0.06243	0.00879	2.88511	0.02536	2.85975	0.99121
2	Al-'Aqar Healthcare REIT (5116.KL)	0.03025	0.00099	5.99397	0.00595	5.98802	0.99901
3	AmFirst Real Estate Investment Trust (5120.KL)	0.23635	0.12471	2.91434	0.36345	2.55089	0.87529
4	AmanahRaya Real Estate Investment Trust (5127.KL)	0.10181	0.00929	7.25617	0.06744	7.18873	0.99071
5	Atrium Real Estate Investment Trust (5130.KL)	0.20380	0.08517	3.17273	0.27023	2.90250	0.91483
6	Axis Real Estate Investment Trust (5106.KL)	0.21172	0.04543	6.42490	0.29190	6.13300	0.95457
7	CapitaLand Malaysia Mall Trust (5180.KL)	0.18115	0.03279	6.51168	0.21351	6.29817	0.96721
8	Hektar Real Estate Investment Trust (5121.KL)	0.08840	0.00701	7.25235	0.05084	7.20151	0.99299
9	IGB Real Estate Investment Trust (5227.KL)	0.18195	0.06645	3.24155	0.21540	3.02615	0.93355
10	KLCC Real Estate Investment Trust (5235SS.KL)	0.32524	0.08296	8.29566	0.68821	7.60745	0.91704
11	MRCB-Quill REIT (5123.KL)	0.22516	0.13704	2.40693	0.32986	2.07708	0.86296
12	Sunway Real Estate Investment Trust (5176.KL)	0.24144	0.09006	4.21151	0.37927	3.83224	0.90994
13	Pavilion Real Estate Investment Trust (5212.KL)	0.22503	0.05463	6.03037	0.32947	5.70090	0.94537
14	Tower Real Estate Investment Trust (5111.KL)	0.26038	0.12642	3.48919	0.44111	3.04808	0.87358
15	UOA Real Estate Investment (5110.KL)	0.25694	0.12433	3.45485	0.42953	3.02532	0.87567
16	YTL Hospitality REIT (5109.KL)	0.14202	0.05423	2.41999	0.13123	2.28876	0.94577
	Average	0.18785	0.06363	6.16226	0.27036	5.89190	0.93637

4.4   Sharpe Ratio for M-REITs

Table 4.3 shows the risk-adjusted performance analysis for M-REITs by using Sharpe ratio measure. The main key aspect of the Sharpe Ratio is that takes into account the cumulative risk of the security or portfolio. In order to use this, portfolio's return or security's return, risk free rates of return and the standard deviation of it must be determined in advance. The higher of Sharpe Ratio value is more attractive by investor based on the Sharpe ratio decision rules. This is because, Sharpe Ratio is expressed as a ratio of risk premium could also be described as net rate of return on riskless rate to the total risk position, which also expressed as a standard deviation of return on a particular investment.

Table 4.3 indicates KLCC REIT has the highest Sharpe's index of 0.71306, followed by Axis REIT and Sunway REIT 0.65922 and 0.53929 respectively. On the other hand, the worst performance is AmanahRaya REIT with the value of 0.01319, and Tower REIT and IGB REIT with the value of 0.0346 and 0.04497 respectively.

Table 4.3 Risk-adjusted Performance Measure – Sharpe Ratio

No	M-REITs	Sharpe's Ratio
1	Amanah Harta Tanah PNB (4952.KL)	0.08709
2	Al-'Aqar Healthcare REIT (5116.KL)	0.35322
3	AmFirst Real Estate Investment Trust (5120.KL)	0.08025
4	AmanahRaya Real Estate Investment Trust (5127.KL)	0.01319
5	Atrium Real Estate Investment Trust (5130.KL)	0.16556
6	Axis Real Estate Investment Trust (5106.KL)	0.65922
7	CapitaLand Malaysia Mall Trust (5180.KL)	0.31046
8	Hektar Real Estate Investment Trust (5121.KL)	0.12631
9	IGB Real Estate Investment Trust (5227.KL)	0.04497
10	KLCC Real Estate Investment Trust (5235SS.KL)	0.71306
11	MRCB-Quill REIT (5123.KL)	0.22433
12	Sunway Real Estate Investment Trust (5176.KL)	0.53929
13	Pavilion Real Estate Investment Trust (5212.KL)	0.39703
14	Tower Real Estate Investment Trust (5111.KL)	0.03460
15	UOA Real Estate Investment (5110.KL)	0.16555
16	YTL Hospitality REIT (5109.KL)	0.18543

A positive Sharpe Ratio explains that the elemental of the particular investment has gained an exuberance return over which compare to risk free rate. Likewise, a negative Sharpe Ratio shows that the elemental of the particular investment has gained a worse return which

compare to risk free rate on a risk-adjusted basis.

4.5   Treynor Ratio for M-REITs

Table 4.4 explains the risk-adjusted performance analysis for M-REITs by Treynor ratio measure. Further to the explanation, Treynor Ratio is commonly used to measure well diversified investment or portfolio. Thus, similar betas are necessary for comparing investments or portfolio. To explain further, it is a very good investment when reviewing the same set of peer systematic risk.

A positive value of Treynor ratio indicates that the portfolio able to generate more return compare to the risk which the risk benchmark by the market. Meanwhile, negative value of Treynor ratio signifies the investment has not performed up to a risk free instrument.

From table 4.4 the highest value of Treynor's ratio is Al-'Aqar Healthcare REIT with extremely high value of 4.53852, this indicates that its outperformance among all M-REITs. It is then followed by Axis REIT and KLCC REIT with the value of 1.25287 and 1.00243 respectively. During the sampling period, there are no single M-REIT recorded negative Treynor's ratio value.

Table 4.4 Risk-adjusted Performance Measure –Treynor Ratio

No	REITs	Treynor's Ratio
1	Amanah Harta Tanah PNB (4952.KL)	0.37616
2	Al-'Aqar Healthcare REIT (5116.KL)	4.53852
3	AmFirst Real Estate Investment Trust (5120.KL)	0.09201
4	AmanahRaya Real Estate Investment Trust (5127.KL)	0.05538
5	Atrium Real Estate Investment Trust (5130.KL)	0.22971
6	Axis Real Estate Investment Trust (5106.KL)	1.25287
7	CapitaLand Malaysia Mall Trust (5180.KL)	0.69424
8	Hektar Real Estate Investment Trust (5121.KL)	0.61086
9	IGB Real Estate Investment Trust (5227.KL)	0.07063
10	KLCC Real Estate Investment Trust (5235SS.KL)	1.00243
11	MRCB-Quill REIT (5123.KL)	0.24537
12	Sunway Real Estate Investment Trust (5176.KL)	0.72766
13	Pavilion Real Estate Investment Trust (5212.KL)	0.68778
14	Tower Real Estate Investment Trust (5111.KL)	0.03940
15	UOA Real Estate Investment (5110.KL)	0.19012
16	YTL Hospitality REIT (5109.KL)	0.32242

4.6   Jensen Alpha for M-REITs

Table 4.5 shows the risk-adjusted performance analysis for M-REITs based on Jensen's Alpha. Jensen' Alpha is a popular risk-adjusted performance measure to determine how much excess returns their portfolio has generated over and above the market returns as suggested by the Capital Asset Pricing Model (CAPM) model. A positive alpha indicates that the M-REITs has outperformed in the market, meanwhile a negative alpha indicates the M-REITs has underperformed. From Table 4.5, all M-REITs have negative value which indicated that underperformed as compared to the benchmark of FBM Kuala Lumpur Property Index.

Form Table 4.5, even though all M-REIT are negative values, KLCC REIT's performance is the best at -0.01672, followed by Axis REIT and Sunway REIT and with a value -0.02162 and -0.02128 respectively. The worst performance is Amanah Harta Tanah PNB with -0.002829, followed by Al-'Aqar Healthcare REIT and Hektar REIT with -0.02811 and -0.02741.

Table 4.5 Risk-adjusted Performance Measure –Jensen Aplpha

No	REITs	Jensen's Alpha
1	Amanah Harta Tanah PNB (4952.KL)	-0.02829
2	Al-'Aqar Healthcare REIT (5116.KL)	-0.02811
3	AmFirst Real Estate Investment Trust (5120.KL)	-0.02309
4	AmanahRaya Real Estate Investment Trust (5127.KL)	-0.02733
5	Atrium Real Estate Investment Trust (5130.KL)	-0.02360
6	Axis Real Estate Investment Trust (5106.KL)	-0.02162
7	CapitaLand Malaysia Mall Trust (5180.KL)	-0.02359
8	Hektar Real Estate Investment Trust (5121.KL)	-0.02741
9	IGB Real Estate Investment Trust (5227.KL)	-0.02483
10	KLCC Real Estate Investment Trust (5235SS.KL)	-0.01677
11	MRCB-Quill REIT (5123.KL)	-0.02296
12	Sunway Real Estate Investment Trust (5176.KL)	-0.02128
13	Pavilion Real Estate Investment Trust (5212.KL)	-0.02139
14	Tower Real Estate Investment Trust (5111.KL)	-0.02235
15	UOA Real Estate Investment (5110.KL)	-0.02241
16	YTL Hospitality REIT (5109.KL)	-0.02555

4.7   Ranking for M-REITs

Table 4.6 shown the summary and combine all the three risk-adjusted performance evaluation tools, such as Sharpe ratio, Treynor ratio and Jenson's alpha with the rankings. As discussed earlier, the three risk-adjusted performance evaluation tools are different from each other as they are used in different platforms as measurement. Sharpe ratio is using standard deviation, Treynor using beta coefficient, and Jensen's alpha using portfolio return to compare with the market benchmark return.

As from the research finding, comparison each M-REITs with varying amounts of market risk to identify what are their rank according to risk-adjusted return. The ratio is most informative when the M-REITs being compared are benchmarked to FBM Kuala Lumpur Property Index. As with the Sharpe ratio, the value of the Treynor ratio is relative which higher is better. On the other hand, Jensen alpha, can be used in an absolute context; the existence and degree of manager skill are apparent by the sign and the size of the alpha. For the measurement to be significant, the benchmark index must be appropriate for the portfolio under consideration.

From the result, KLCC REIT has the highest Sharpe ratio and Jensen's Alpha but ranked third for Treynor ratio. Meanwhile Al-'Aqar Healthcare REIT ranked five in Sharpe ratio, but was the first in Treynor ratio. In Jensen's Alpha, it fared a disappointing at rank fifteen.

For the worst performance based on the three risk adjusted measurement are AmanahRaya REIT which Sharpe rank it as sixteen, Treynor rank it as fifteen and lastly Jensen rank it as thirteen.

Besides KLCC REIT, there are two others M-REITs are a good choice for investor is Axis REIT and Sunway REIT. Both of these two M-REITs have a steady ranking from the risk-adjusted performance measure. For Axis REIT, rank 2 for Sharpe measure and Treynor measure but at rank 4 for Jensen measure. Meanwhile, Sunway REIT, rank 3 for Sharpe measure, rank 4 for Treynor and rank 2 for Jenson Alpha.

Table 4.6 Risk-adjusted Performance and Rankings

No	REITs	Sharpe Ratio	Ranking	Treynor Ratio	Ranking	Jensen's Alpha	Ranking
1	Amanah Harta Tanah PNB (4952.KL)	0.08709	12	0.37616	8	-0.02829	16
2	Al-'Aqar Healthcare REIT (5116.KL)	0.35322	5	4.53852	1	-0.02811	15
3	AmFirst Real Estate Investment Trust (5120.KL)	0.08025	13	0.09201	13	-0.02309	8
4	AmanahRaya Real Estate Investment Trust (5127.KL)	0.01319	16	0.05542	15	-0.02734	13
5	Atrium Real Estate Investment Trust (5130.KL)	0.16540	10	0.22872	11	-0.02360	10
6	Axis Real Estate Investment Trust (5106.KL)	0.65922	2	1.25287	2	-0.02162	4
7	CapitaLand Malaysia Mall Trust (5180.KL)	0.31046	6	0.69424	5	-0.02359	9
8	Hektar Real Estate Investment Trust (5121.KL)	0.12631	11	0.61086	7	-0.02741	14
9	IGB Real Estate Investment Trust (5227.KL)	0.04497	14	0.07063	14	-0.02483	11
10	KLCC Real Estate Investment Trust (5235SS.KL)	0.71306	1	1.00243	3	-0.01677	1
11	MRCB-Quill REIT (5123.KL)	0.22433	7	0.24537	10	-0.02296	7
12	Sunway Real Estate Investment Trust (5176.KL)	0.53929	3	0.72766	4	-0.02128	2
13	Pavilion Real Estate Investment Trust (5212.KL)	0.39703	4	0.68778	6	-0.02139	3
14	Tower Real Estate Investment Trust (5111.KL)	0.03460	15	0.03940	16	-0.02235	5
15	UOA Real Estate Investment (5110.KL)	0.16555	9	0.19012	12	-0.02241	6
16	YTL Hospitality REIT (5109.KL)	0.18543	8	0.32242	9	-0.02555	12

4.8   Chapter Summary

In this chapter, the findings recommended that the differences in performance ranking orders due to differences are mainly applied to differences in risk measure used, such as beta versus standard deviation of return yield. As the value of R-squared reported to M-REITs are very low, and indicate a low reliability on the beta coefficients. Therefore, when risk adjustments are made by using beta, the command causes performance finding and position rank is not meaningful. Furthermore, measurement of Sharpe ratio that adjusts its risks will help to adjust the risks using the standard deviation of return yield. It signifies a more impressive performance ranking than Jensen and Treynor measures that adjusts its risk using beta coefficient.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.0   Introduction

The overall outcomes will be concluded for the sampling period which is from Nov 2007 till Dec 2015. The implications of this research will be explained. The limitations for this research will be highlighted. Recommendation for the future studies as well as the literature extension will be discussed in the final sub topic.

5.1   Conclusion

M-REITs have been established in Malaysia since 2005 and it is an important property investment vehicle in Malaysia, which can provide better diversification benefits. On the hand, the findings suggest that it is important to embed risk into M-REIT performance evaluations.

5.1.1   Diversification of M-REITs

From the findings, all the M-REITs' R-Squared are in low value, this can be concluded that M-REITs are poorly diversified. Thus, the diversifibility opportunities are tremendous. Besides, the findings again focused the adoption of measures different risk, for instant standard deviation of returns compared to beta leads to large discrepancies in the position of REIT performance.

5.1.2 Low Systematic Risk of M-REITs

From the findings, all the M-REITs have lower systematic risk compared to market portfolio, FBM Kuala Lumpur Property Index. Besides, office related M-REITs carry higher market risk compare to others M-REITs. This is because M-REITs have the low beta values since M-REITs are secured by real estate properties and thus, they incline to have a lower degree of market risk.

5.1.3 Return Over the Risk Free Rate

In term of Sharpe ratio measure, which measure risk adjusted performance using standard deviation of return, all M-REITs reveal a positive Sharpe measure indicating a return over the risk free rate. The highest is KLCC REIT with value of 0.71306 and the lowest is AmanahRaya REIT with value of 0.01319.

5.1.4 Return Over the Market Risk

In term of Treynor ratio measure, which measure risk adjusted performance using beta, all M-REITs reveal a positive value with the highest Al-'Aqar Healthcare of 4.53852 and the lowest Tower REIT of 0.03940. a positive value indicates that the portfolio able to generate more return compare to the risk which benchmarked by the market portfolio.

5.1.5 Underperformance of M-REITs

Based on Jensen Alpha measurement tools, all M-REITs have a common result, which is negative value, highest value is KLCC REIT of -0.01677 and the lowest is Amanah Harta Tanah PNB of -0.02829. Negative value of alpha explains that the M-REITs has not up to the performed which compare to the market portfolio FBM Kuala Lumpur Property Index.

5.1.6 Better Risk-adjusted Performance Measurement - Sharpe Ratio

From the results suggest that the performance assessment using the Sharpe ratio measure, the results will be more meaningful than using Treynor ratio and Jensen alpha method employs beta as a risk measure. This can be explained as the sample M-REITs have low R-squared values and thus implying that the beta coefficients may be unreliable. All the beta values of the M-REITs with less than one, proposed that low level of market risk which is not surprising since M-REITs are secured by real estate properties.

5.2 Meeting the Objectives of This Research

5.2.1 To Evaluate of the Performance of M-REITs

In order to evaluate the performance of Malaysia Real Estate Investment Trusts, performance measurement tools been used namely Sharpe Ratio, Treynor Ratio and lastly Jesnen Alpha. As conclude that, some of the M-REITs performance with superior result but some are worst performance, for example based on Sharpe Ratio, KLCC REIT have outperformed result, meanwhile AmanahRaya REIT have the worst result with the value of 0.71306 and 0.01319 respectively. In term of Sharpe ratio measure, which measure risk adjusted performance using volatility or standard deviation of return, all M-REITs reveal a positive Sharpe measure indicating a return over the risk free rate.

On the other hand, based on Treynor Ratio, Al-'Aqar resulted the best performed through out the sampling period with value of 4.53852, meanwhile Tower REIT is the underperformed and as rank 16 with value of 0.03940. In term of Treynor ratio measure, which measure risk adjusted performance using beta, all M-REITs reveal a positive value indicates that the portfolio able to generate more return compare to the risk which benchmarked by the market portfolio FBM Kuala Lumpur Property Index.

However, based on Jensen Alpha measurement tools, all M-REITs have a common result, which are all negative value, negative value of alpha explains that the M-REITs has not up to the performed which compare to the market portfolio FBM Kuala Lumpur Property Index.

5.2.2 To Investigate the Return of M-REITs

Since from the finding, based on the Jensen Alpha risk-adjusted performance measure based on Capital Assets Pricing Model. All the Jensen measure are negative value which indicating that M-REITs is under performed which benchmarked market portfolio FBM Kuala Lumpur.

5.2.3 To Examine Total Risk of M-REITs

From the findings, overall total risk for M-REITs is 6.16226 is lower compare to the market benchmark of 6.50607. Since the findings show that average of total risk is lower than market risk which is supported by risk-adjusted performance measure by Treynor Ratio as well. Besides, from the findings, office related M-REITs carry higher market risk compare to others M-REITs.

5.2.4 To Determine M-REITs is Worthwhile Investment Tools

From the findings, M-REITs seemingly unattractive when evaluated by Jensen Alpha as the performance is under market portfolio FBM Kuala Lumpur Property Index. Meanwhile, if based on the risk-adjusted performance measures by Sharpe Ratio and Treynor Ratio, both indicators explain that both measurement on return is over the risk free rate and market risk respectively.

As conclude M-REITs is low risk investment tools which is suitable for those investors with low risk strategy with steady passive return investment portfolio.

5.3   Implications on this Study

First of all, investors could consider adding M-REITs into their investment portfolio. From the findings, M-REITs are considered low risk investment tools and does not strongly correlated with the portfolio market FBM Kuala Lumpur Property Index, only a certain degree of portfolio diversification can be achieved.

Because the level of the risk in M-REITs is low, M-REITs is more suitable for the low risk investment strategy group of investors. M-REITs concentrate on the four-time annual dividends rather than the growth of stock price. M-REITs can also be an alternative investment tool during bear markets or economic crisis, as investors could temporary switch their portfolios to the low risk M-REITs in order to minimize losses.

For those investors looking for stable and steady passive income, M-REITs are a better selection. It can therefore conclude that M-REITs supported by the 'bird-in-the-hand' theory. This theory concerns the dividend policy in a venture. being advanced by John Litner in 1962 following by Myron Gordon in 1963.

This very clear that, majority of the investors in M-REITs require highest dividend yield out of all forms of investments and M-REITs able to generate a steady income as compared to other stock investments. In fact, the regulation for M-REITs state that 90% and above of the net income must be allocated to their shareholders.

As conclude, investors should prepare their own strategy in their investment portfolio along with fundamental technical analysis of the market cycles. Along with the major swings or volatile in the market as well as economy, M-REITs have certain protection an effective mean to lost capital as well as which able to name it as safeguard the investment values.

As the empirical findings may help both investors and readers to understand the total risks involved and take into account the M-REITs as another viable

investment alternative. The research could deliver useful quantitative experimental valuation of the performance of the Malaysia Real Estate Investment Trusts to help investors choose their preferable investment vehicle. Thus, practical investors need to assess complement qualitative statement such as the quality of corporate management, trust management, asset quality and lastly the growth strategies of each M-REITs to make a better assessment on the performance of M-REITs to be precise when making investment decisions in both quantitatively and qualitative.

5.4   Limitations on this Study

Same with other experimental research available, definitely weaknesses and limitations in the research would appeared that could wherefore the findings are not sufficient to draw conclusions for undertakings regarding the future. Future research on this issue or related field would be inconsistent with the findings due to some limitations of the research, which will be highlighted.

Firstly, the limitation of this research is a comparatively short sampling period of Malaysia REITs, as the sampling period is only from November 2007 until December 2015. Due to short period of research with only limited listed REITs in Malaysia, 16 number of M-REITs might not be trustworthy for performance as compared with well-developed countries such as the USA, Australia, Japan, France and so forth.

Hence, there are five M-REITs, namely Capitaland Malaysia REIT, Sunway REIT, Pavilion REIT, KLCC REIT, IGB REIT that were not giving the empirical information as they were publicly listed only after 2010. Stochastic variables will only be likewise normal with a large sampling size which is preferably greater than 30 according to the central limit theorem. Therefore, the normal distribution data which being assumption early can not maintain good in this research.

Secondly, the limitation of this study is the absence of data on the M-REITs own Index and used FBM Kuala Lumpur Property Index as benchmark for return of

the market portfolio. As FBM Kuala Lumpur Property Index may not fully represent of the entire M-REITs market capitalization, a close relationship still exists and is considered to be significant to M-REITs as compared to FBM KLCI Index.

Thirdly, in this study, consideration was not taken into account on the level of profitable of the income stream from rental of property portfolios to investor. For the income distribution procedures, there are no standardize polices among the company of M-REITs. Furthermore, as the present operator M-REITs only has a portfolio of commercial properties and land bank only, consequences, there is also limited coverage of the nature of the business or operations of the M-REITs. Thus, the findings of the evaluation may be affected if the operator M- REIT has other real estate related assets such as hotels or residential facilities in their portfolio due to differences in cash flow or income streams with various types of real estate assets. Moreover, there may be differences in performance although among Islamic and conventional REITs in terms of portfolio management policies, and cost management. Therefore, any conclusions drawn now would in no way represents the present Islamic REITs or the nature of the future.

Finally, longer confined to offshore investments M-REITs may happen due to low returns and low volatility M-REITs. In addition, this spectacle can be endorsed by the low volume of daily transactions as well as turnover rate. These are the main factors may affect the Malaysia Real Estate Investment Trust share price change during the period. In addition, there is narrow materials provided by local REITs in their ancient financial information to a greater extent in the investigation.

5.5   Recommendations on Future Research

Further research proposal envisages a solution to overcome this limitation of study, as well as areas that deserve further investigation. Future researches could be extended to consist of other measures of performance such as Dividend Yield, Net Asset Value, Net Income and size (Ong, Teh, & Chong, 2011) to complement the effective of the results. Furthermore, they need to be focus on the performance

analysis of M-REITs for both international and local overview to recommend investors on whether they wish to invest in internationally or locally. An exploratory study can be undertaken to better comprehend the performance of M-REITs.

Besides that, evidence could be compiled via observations and interviews to investigate the attitudes and perception of global and local investors towards M-REITs. With the expanding number of REITs, the future researches could give significant developments and developed of property sector in Malaysia.

Furthermore, they could also investigate on the comparison between Malaysia conventional REIT and Islamic REIT. Thus, able to generate appropriate results that able to provide to investors to understand each risk-return trade off and to consider M-REITs as alternative feasible investment carried out.

Likewise, in the comparison between conventional and Islamic REIT. Moreover, future researches could investigate on the performance of different sector in M-REITs property types such as the retail, office, healthcare, warehouse or diversified. In addition, it would be a appropriate information to the investors and reader to conclude which M-REITs that match each investment portfolio.

Lastly, future researches could extend their analysis and study into Asian REITs Markets as well as comparison of Asian REITs verses Europe REITs. As the mutuality of the Europe REITs market could able to generate an empirical finding to benefit investor as well as reader.

References

Akkaya, G., Kutay, N., & Tukenmez, M. (2005). Real Estate Investment Trusts and Furndamentals of Real Estate Investments : A Case of Turkey. *Yonetim Ve Ekonomi*, 39-46.

Anuar, A., & Soi, T. C. (2011). Performance Analysis of REITs: Comparison Between M-REITs and UK-REITs. *Journal of Surveying, Construction and Property*, 38-61.

Aparicio, F., & Estrada, J. (2001). Empirical distributions of stock returns: European securities markets 1990-95. *The European Journal of Finance*, 1-21.

AXIS, R. M. (2015). *AXIS REIT Annual Report.* AXIS REIT Management Team.

Basse, T., Friedrich, M., & Bea, E. (2009). REITs and The Financial Crisis : Empirical Evidence from the US. *International Journal of Business and Management*, 4-11.

Bernardo, A., & Ledoit, O. (2000). Gain, loss and asset pricing. *Journal of Political Economy*, 144-172.

Bley, J., & Olson, D. (2003). An Analysis of Relative Return Behaviour. REITS vs Stocks. *American University of Sharjah*.

Brooks, C., & Kat, H. (2002). The Statistical Properties of Hedge Fund Index Returns and Their Implications for Investors. *Journal of Alternative Investments*, 26-44.

Bryman, A., & Bell, E. (2007). *Business Research Method (2nd ed).* Oxford: Oxford University Press.

Bryman, E., & Ehrhardt, M. (2005). *Financial Management Theory and Practice (11th ed).* South Western: Thomson.

Chai, M., Choong, Y., Koh, C., & Tham, W. (2011). Malaysia Real Estate Investment Trusts (M-REITs): A Performance and Comparative Analysis. *University Tunku Abdul Rahman*, 1-114.

Chang, Y., & So, C. (2006). Devising a Conducive Regulatory Framework for Hong Kong Real Estate Investment Trusts. *Journal of Finance Management of Property and Construction*, 91-104.

Chin, Y., & Ahmad, R. (2006). An Evaluation of the Performance of Malaysian Real Estate Investment Trusts (M-REITs) 1990-2006. *Proceeding of Asia Pasific Management Conference XII*.

Compton, W. S., Don, T. J., & Kunkel, R. A. (2006). The Turn of Month Effect in Real Estate Investment Trusts REITs. *Managerial Finance*, 969-980.

Cooper, R., & Schindler, S. (2008). *Business Research Methods (10th ed).* Mcgraw-hill Professional.

Corgel, J., & Rogers, R. (1991). Market Trading Cahracteristics of REITs: Tests of The Stock Market and Hybridsecurities Hypotheses. *Cornell University and University of South Carolina*.

Dimvski, W., Lombardi, L., & Copper, B. (2013). Women Directors on Boards of Australian Real Estate Investment Trusts. *Journal of Property Investment & Finance*, 196-207.

Dusuki, A. W. (2008). Practice and Prospect of Islamic Real Estate Investment Trusts (I-REITs) in Malaysian Islamic Capital Market. In S. S. Ali, *Islamic Capital Markets, Products, Regulation & Development* (pp. 265-293). Malaysia: First Published 1429H.

Ekholm, A., & Pasternack, D. (2005). The Negative News Threshold – An Explanation for Negative Skewness in Stock Returns. *The European Journal of Finance*, 511–529.

Emst, & Young. (2010). *Global Real Estate Investment Trust Report 2010.*

Glascock, J., Michayluk, D., & Neuhauser, K. (2004). The Riskiness of REITs Surrounding the October 1997 Stock Market Decline. *Journal of Real Estate Finance and Economics* , 339-354.

Hamzah, A. H., Rozali, M. B., & Tahir, I. M. (2010). Empirical Investigation on the Performance of the Malaysian Real Estate Investment Trust in Pre-Crisis, During Crisis, and Post-Crisis Period. *International Journal of Economics and Finance.*

Ho, K., Satyannarain, R., & Lum, Y. (2013). Green Building and Real Estate Investment Trust's (REIT) Performance. *Journal of Property Investment & Finance*, 545-574.

Hodges, S. (1998). A Generalization of the Sharpe Ratio and Its Applications to Valuation Bounds and Risk Measures. . *Working Paper, Financial Options Research Centre, University of Warwick.*, 1-100.

Husni, H. A. (2010, May). Empirical Investigation of the Performance of the Malaysian Real Estate Investment Trusts in Pre-Crisis, During Crisis and Post Crisis Priod. *International Journal of Economics and Finance, 2*, 62 to 69.

Ibrahim, M., & Ong, S. (2008). Shariah Complianec in Real Estate Investment. *Journal of Real Estate Portfolio Management*, 401-414.

Jill, H., & Roger, H. (1997). *Business Research.* London: MacNillian Press Ltd.

Kim, H., Zheng, G., & Mattila, A. (2002). Hotel Real Estate Investment Trusts' Risk Features and Beta Determinants. *Journal of Hospitality & Tourism Research*, 138-154.

Kok, C. (2015). *Volatile Boand Market, Slowing Consumer Spending and Moderating Growth to Affect Performance in The Quarters Ahead.* Kuala Lumpur: The Star Online.

Kosowski, R., Naik, N., & Teo, M. (2007). Do Hedge Funds Deliver Alpha? A Bayesian and Bootstrap Analysis. *Journal of Financial Economics*, 229–264.

LaBrooy, S. (November, 2012). Malaysia REIT Investment Outlook 2013. (C. F. Lieu, Interviewer)

Lean, H., & Russell, S. (2012). REITs, Interest Rates and Stock Prices In Malaysia. *International Journal of Business and Society*, 49-62.

Lee, J. Y., Ali, H. M., & Lee, C. (2006). The New Real Estate Investment Trusts in Malaysia: Lessons from Listed Property Trusts. *Centre for Real Estate Research and Dept of Property Management*, 1-17.

Lee, M., Kuo, S., Lee, M., & Lin, C. (2011). Market Signals Associated with Taiwan REIT IPOs: Reactions of Non REIT Real Estate Stocks. *Journal of Real Estate Literature*, 93-110.

Leland, H. (1999). Beyond Mean-Variance: Risk and Performance Measurement in a Nonsymmetrical World. *Financial Analysts Journal*, 27–36.

Levy, H., & Sarnat, M. (1984). *Portfolio and Investment Selection: Theory and Practice.* Englewood Cliffs, NJ: Prentice Hall International.

LHDN Malaysia. (Nov 2012). *Real Estate Investment Trusts / Property Trust Funds - An Overview.* Inland Revenue Board Malaysia.

Low, S., & Anwar, J. (2014). Risk-Adjusted Performance of Malaysian Real Estate Investment Trust Funds`. *Jurnal Pengurusan 41*, 3-11.

Lu, C., Tse, Y., & Williams, M. (2012). Returs Transmission, Value at Risk, and Diversification Benefits in Internatinal REITs: Evidence from Financial Crisis. *Springer Science + Business Mdeia*, 293-318.

Malkiel, B., & Saha, A. (2005). Hedge funds: Risk and return. *Financial Analysts Journal* , 80-88.

Mandelbrot, B. (1963). The variation of certain speculative prices. *Journal of Business*, 394-419.

Myer, N., & Webb, J. (1993). Return Properties of Equity REITs, Common Stocks and Commercial Real Estate : A Comparison. *The Journal of Real Estate Research*, 87-107.

Newell, G., & Osmadi, A. (2009). The Development and Preliminary Performance Analysis of Islamic REITs in Malaysia. *Journal of Porperty Research*, 329-347.

Newell, G., Ting, H., & Acheampong, P. (2002). Listed Property Trusts in Malaysia. *Journal of Real Estate Literature*, 109-118.

Noguera, M., Paulo, E., & Chang, C. (2014). Socio Emotional Weath Preservation in The REIT Industry: An Exploratory Study. *Internatinal Journal of Financial Studies*, 220-239.

Ong, T. (2012, May). Malaysia Real Estate Investment Trusts: A Performance and Comparative Analysis. *International Journal of Econmics and Finance, 4*(1916-971X), 73-84.

Ong, T. S. (2011). A Study on the Performance of Malaysia Real Estate Investment Trusts from 2005-2010 By Using Net Asset Value Approach. *International Journal of Economic Research*, 1-15.

Ong, T., Teh, B., & Chong, M. (2011). A Study On the Performance of Malaysian Real Estate Investment Trusts from 2005-2010 by Using Net Asset Value Approach. *International Journal of Economics and Research*, 1-15.

Ooi, J. T. (2009). The Compensation Structure of REIT Manager: Impact on Stock Valuation and Performance. *Journal of Property Research*, 309-328.

Ooi, J. T., Newell, G., & Sing, T. (2006). The Growth of REIT Markets in Asia. *Journal of Real Estate Literature*, 203-223.

Plata, S. (2006). A Note on Fisher's Correlation Coefficient. *Applied Mathematical Letters 19*, 499-502.

Prahalad, C. (2005). *The Fortune at the Bottom of the Pyramid.* Singapore: Pearson Education (Singpaore) Pte Ltd.

Robert, D., & Sirmans, C. (2002). Policy Implications of Structural Options in The Development of Real Estate Investment Trusts in Europe. *Journal of Property Investment & Finance*, 388-405.

Roll, R. (1978). Ambiguity When Performance Is Measured by the Securities Market Line. *Journal of Finance*, 1051-1069.

Rozali, M., & Hamzah, A. (2006). The Performance of Listed Property Trusts in Malaysia: An Empirical Investigation. *12th Pacific RIIM Real Estate Society Annual Conference*, 1-17.

Security Commission. (Aug 2008). *Guideline on REIT.* Security Commission.

Sekaran, U. (2003). *Research Methods for Business: A Skill Building Approaches (4th ed).* New York: Wiley & Sons Inc.

Sokol, J. (2008). The Proliferation of Global REITs and The Cross Boarderization of the Asian Market. *The Proliferation of Global REITs*, 481-522.

Syahzan, S., & Tien, F. (2011). Interest Alignment and Insider Shareholdings in the Emerging Asian REIT Markets. *Journal of Real Estate Portfolio Management*, 127-138.

Tan , S. (2009). Performance of Malaysia REIT Stock Relative to Bursa Malaysia Stock Index. *Unpublished Master's Thesis, Multimedia University Malaysia*.

Treynor, J. (2009). How to Rate Management of Investment Funds. In Classics in Investment Performance Measurement. *Harvard Business Review*, 63-75.

Weisman, A. (2002). Informationless Investing and Hedge Fund Performance Measurement Bias. *Journal of Portfolio Management*, 81-91.

Wiesinger, A. (2010). Risk-Adjusted Performance Measurement – State of the Art. *Bachelor Thesis*, 1-51.

Wong, A., Tong, C., & Yeong, M. (2012). Performance and Role of Singapore REITs in Multi- Asset Class Investment Portfolios. *Journal of Managmenet Research*.

Wong. (2012). *KLCC Property.* Maybank Investment Bank.

Yun, H. (2011). Primary Discrimination and Application of Real Estate Investment Trust and Real Estate Private Equity Funds. *International Business Research*, 188-193.

Zakamouline. (2010). The Choice of Performance Measures Does Influence the Evaluation of Hedge Funds. . *University of Adger Working Paper*, 1-50.

Zikmund, G. (2003). *Business Research Methods.* South Western: Thomson.

Appendix 1:

Table 6.1: List of M-REITs as at 31st December 2015

Name of REIT	Portfolio	REITs Manager	Stock Short Name	Listing Date	Website
Amanah Harta Tanah PNB	Retail, Office	Pelaburan Hartanah Nasional Berhad	AHP	Dec 1990	www.ahp.com.my
Al-'Aqar Healthcare REIT*	Hospital , Nursing College, Hotel	Damansara REIT Managers Sdn Bhd	ALADAR	10th Aug 2006	www.alaqar.com.my
Amfirst REIT	Office, Retail, Hotel	AM ARA RBT Managers Sdn Bhd	AMFIRST	21st Dec 2006	www.alqar.com.my
Amanah Raya REIT	Industrial, Office, Hotel Institution, Retail	AmanahRaya Investment Management Sdn Bhd	ARERIT	26th Dec 2007	www.amanahrayareit.com.my
Atrium REIT	Industrial, Warehouse, Office	Atrium REIT Managers Sdn Bhd	ATRIUM	Apr 2007	www.atriumreit.com.my
AXIS REIT*	Office, Industrial	Axis RBT Managers Berhad	AXREIT	3rd Aug 2005	www.axis-reit.com.my
Al-Hadharah Boustead REIT*	Oil Palm Plantation, Palm Oil Mills	Boustead REIT Managers Sdn Bhd	BSDREIT	8th Feb 2007	www.al-hadharahboustead.com.my
CapitalLand Malaysia Mall Trust (formerly known as Capital Malls Malaysia Trust)	Retail	CapitalMalls Malaysia REIT Management Sdn Bhd	CMMT	16th Jul 2010	www.capitalmallmalaysia.com

Hektar REIT	Retail	Hektar Asset Management Sdn Bhd	HEKTAR	4th Dec 2006	www.hektarreit.com
IGB REIT	Retail	IGB REIT Management Sdn Bhd	IGBREIT	21st Sept 2012	www.igbreit.com.my
KLCC REIT*	Retail, Office	KLCC REIT Management Sdn Bhd	KLCC	9th May 2013	www.klcc.com.my
Pavillian REIT	Retail, Office	Pavillion REIT Management Sdn Bhd	PAVREIT	7th Dec 2011	www.pavillion-reit.com
MRCB-Quill REIT (formerly known as Quill Capita Trust)	Commercial, Carparks, Office, Industrial	Quill Capita Management Sdn Bhd	QCAPITA	8th Jan 2007	www.qct.com.my
YTL Hospitality REIT (formerly known as Starhill REIT)	Commercial, Convertible Preference Units of REITs	Pintar Project Sdn Bhd	STAREIT	16th Dec 2005	www.starhillreit.com
Sunway REIT	Retail, Office, Hotel	Sunway REIT Management Sdn Bhd	SUNREIT	8th Jul 2010	www.sunwayreit.com
Tower REIT	Office	GLM REIT Management Sdn Bhd	TWRBT	12th Apr 2006	www.tower-reit.com.my
UOA REIT	Office	UOA Asset Management Sdn bhd	UOA REIT	Dec 2005	www.uoareit.com.my

☐ * Islamic REIT

Source :
(http://www.bursamalaysia.com/market/securities/equities/products/real-estate-investment-trusts-reits)