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Implications of dividend tax reforms on M-REITs performance

Nur Adiana Hiau Abdullah, Kamarun Nisham Taufil Mohd and
Woei Chyuan Wong
School of Economics, Finance and Banking,
Universiti Utara Malaysia, Sintok, Malaysia

Abstract

Purpose – The purpose of this paper is to examine the performance of 19 Malaysian Real Estate Investment Trusts (M-REITs) over the period 1999 to 2014, following the implementation of dividend tax reforms announced in the 2007, 2009 and 2012 budgets.

Design/methodology/approach – Sharpe index, Treynor index and Jensen α are utilized to compare the performance of M-REITs against a newly developed tax-adjusted value-weighted M-REITs index, equity market, property sector and three month Malaysia Treasury Bills (T-Bills). The calculation of M-REITs returns has been adjusted to take into account the dividend tax reforms which have never been considered in previous studies.

Findings – Most M-REITs outperform the tax-adjusted value-weighted REITs index, equity market, property sector and three month T-Bills. Property sector performs worst during those periods. Some of the M-REITs have a higher standard deviation than the equity market and the tax-adjusted value-weighted M-REITs index. Most M-REITs have a lower total risk than the property sector. Further analysis shows that before (after) the tax reforms, most M-REITs underperform (outperform) the other sectors. The introduction of the tax reforms benefits both REITs and investors. A significant positive Jensen α for some M-REITs indicates that fund managers are able to time the market or to select undervalued assets.

Practical implications – Findings of the study would enable investors to evaluate the performance of all REITs in comparison to other financial assets during the period of study for better investment decision making. A more accurate assessment on REITs performance that take into account the tax reforms, is available for investors and fund managers to decide on the investment mix to be included in their portfolio. Moreover, fund managers' performance can be assessed whether they perform better or worse than the equity market, property sector and three month T-Bills.

Originality/value – This study contributes to the scant literature on dividend tax reforms and their implication toward REITs performance. It is the first study to thoroughly assess the returns of REITs by taking into account the changes on dividend tax rates announced in the 2007, 2009 and 2012 budgets.

Keywords M-REITs, Dividend tax reforms, Jensen α, REITs performance, Sharpe index, Treynor index

Paper type Research paper

1. Introduction

The development of real estate investment trusts (REITs) started in the USA in 1960 under the REIT Act of 1960. Following the success of the US-REITs, other countries started to establish their own REITs markets such as in the Netherlands (late 1960s), Australia (late 1970s), Japan (2001), South Korea (2001), Singapore (2002), France (2003), Hong Kong (2003), Taiwan (2003) and the UK (2007) (Brueggeman and Fisher, 2011; Newell and Wen Peng, 2012).

In Malaysia, listed property trusts (LPTs) were introduced in 1989 with the listing of Arab Malaysian First Property Trust and First Malaysia Property Trust. The M-REITs was developed in accordance to the Australian LPT regulatory framework (Hamzah *et al.*, 2010; Hwa, 2008). Within 15 years, there were only three REITs traded on the Bursa Malaysia (BM), which shows an almost stagnant progress. The slow development and poor performance of property trusts in Malaysia were contributed by several factors such as thin trading volume, small market size and poor historical returns due to the underlying local operational structure and regulatory framework (Janice *et al.*, 2005; Newell *et al.*, 2002). More importantly, the tax treatment was not to the advantage of investors where they would only receive dividends after corporate taxes amounted to 28 percent were being paid. This is in

contrast to the tax-exempt status which was being practiced in the USA and Australia, where income distribution was not subjected to income tax if at least 95 percent of REITs income was distributed to investors (Newell *et al.*, 2002). In 2005, the Malaysia Securities Commission introduced a new guidelines to help boost the REITs industry (Annual Report Bursa Malaysia, 2013). The main features of the guidelines were to limit REITs borrowing to 35 percent of asset value, to follow the US model on tax transparency status and to provide supportive regulatory framework (Ooi *et al.*, 2006). To ensure the industry continues to flourish, the Malaysian government offered temporary dividend tax cuts where the rate reduced from 28 percent in 2006 to 10 percent in 2009 till 2016. The growth of the industry is clearly observed in which total market capitalization grew from USD0.11 billion in 2005 to USD5.52 billion[1].

The main objective of this paper is to examine the performance of REITs following the implementation of dividend tax reforms announced in the 2007, 2009 and 2012 budgets. Since the late 1970s, many researchers have studied REITs performance in the developed countries such as the USA, Australia, Japan, Hong Kong and Singapore. In the USA and Australia, mixed results have been found where the REITs portfolio either outperform, underperform or perform at par as their market benchmark. Burns and Epley (1982), Higgins and Ng (2009), Kuhle *et al.* (1986), Newell and Peng (2009), Smith and Shulman (1976) and Titman and Warga (1986) have obtained that the REITs portfolio outperformed the market benchmark. However, Chan *et al.* (1990), Goebel and Kim (1989) and Howe and Shilling (1990) found that the REITs portfolio underperformed the market benchmark; whereas Kim *et al.* (2002) found that REITs portfolio performed as good as its market benchmark.

As for REITs in the Asian markets, Pham (2012) and Coen and Lecomte (2014) found that Asian REITs had a superior performance as compared to REITs in developed markets. Other studies such as Newell *et al.* (2010) who focused on Hong Kong, Koh *et al.* (2014) and Newell *et al.* (2015) on Singapore and Newell and Wen Peng (2012) on Japan, found that HK-REITs, S-REITs and J-REITs outperformed the overall stock market. For Malaysia, risk-adjusted performance (RAP) studies on REITs had not achieved a consensus. Hwa (1999), Kok and Khoo (1995), Newell and Osmadi (2009), Olanrele *et al.* (2014) and Low and Johari (2014) found that REITs had a superior performance against the market benchmark. However, Newell *et al.* (2002) showed that REITs underperformed the market benchmark. Hamzah *et al.* (2010), Nai-Chiek (2012) and Ong *et al.* (2012) investigated REITs performance by focusing on the effect of the global financial crisis (GFC). They found that outperformance or underperformance vary depending on the method and period of study. Nonetheless, most of the Malaysian studies did not take into account of the dividend tax reforms that took place in the past few years which were affecting the REITs industry although it has been highlighted by Newell and Osmadi (2010). They pointed out that fund managers and property advisors stressed the importance of tax issue as the key factor in driving the M-REITs development.

Thus far, there are not many studies that have shed lights on dividend tax reforms and how they affect performance of REITs because major changes of dividend tax rates rarely happen. Based on the authors' knowledge, there has been no study on the M-REITs performance that takes into account the different tax regimes implemented in 2007, 2009 and 2012. Without considering the tax reforms, the performance presented in previous studies might not reflect the true returns of the M-REITs. This claim has yet to be explored. Thus, this study is implemented to examine on the performance of REITs by taking into account of the different tax regimes.

This paper is divided into five sections. Section 1 provides the introduction which is followed by reviewing the relevant literature. Research methodology and analysis of results are covered in Section 3 and Section 4, respectively. Section 5 concludes the paper.

2. Literature review

Performance is the return or the escalation in wealth over time of an investment relative to the amount of risk faced by investors (Christopherson *et al.*, 2009) with the main goal of utility maximization (Levy and Sarnat, 1984). Markowitz (1952, 1959) modern portfolio theory provides a basic model in obtaining the expected rate of return and risk measure of a portfolio of assets under a few assumptions of investor's behavior (Reilly and Brown, 2012): investor looks at expected returns of investment as probability of distribution over a period; he/she faces diminishing marginal utility curve; his/her risk estimation is based on variability of expected returns; investment decision is based on risks and returns only; investor prefers the highest rate of return for a specified level of risk or the lowest risk for a specified level of return.

Studies on the performance of REITs industry in the late 1970s and early 1980s show inconclusive findings on the performance of REITs. Smith and Shulman (1976) compared the performance of 16 US-REITs to the S&P500 index, savings accounts and 15 closed-end funds from 1963 to 1974. They found that equity REITs outperformed the savings account and S&P500 index. The result was consistent with the studies by Burns and Epley (1982), Han and Liang (1995) and Kuhle *et al.* (1986). Similarly, Sagalyn (1990) found that survivor equity REITs outperformed the S&P500 index over the 1973-1987 period. In particular, equity REITs showed less volatility and higher returns than previous studies. This can be explained by the high return, lower volatility and lower systematic risk of REITs in the period of high growth in the real gross national product which dominated the 1980s.

However, when Smith and Shulman (1976) split their sample, they found that REITs performed poorly as compared to the S&P500 index from 1963 to 1974. The result was consistent with the study by Howe and Shilling (1990) who evaluated the performance of equally weighted REITs index based on advisory types such as real estate advisor, syndicator mortgage banker, insurance company, individual and others. By using Jensen α index of 105 REITs, they also found that REITs underperformed the Center of Research in Security Prices equally weighted index between 1973 and 1987, which is consistent with Chan *et al.* (1990), Goebel and Kim (1989), Kerrigan (2014), Kim *et al.* (2002) and Titman and Warga (1986).

A more current research by Brounnen and Koning (2012) looked into the performance of 210 REITs from Australia, Hong Kong, Japan, Singapore, France, the Netherlands, UK, Canada and the USA from 1990 to 2010. The sample was categorized into two sub-periods, 1990 to 2000 and 2000 to 2007, to capture the real estate cycles. By using Capital Asset Pricing Model (CAPM), they showed that REITs outperformed the national indexes particularly in the sub-period from 2000 to 2007. In terms of vulnerability against exposure from the market movement, Asia was ranked highest while the US occupied the lowest rank. Furthermore, REITs were found to be less volatile than the overall stock market as their returns were more stable as compared to other asset classes.

In Australia, Higgins and Ng (2009) conducted a study on 16 wholesale property funds by employing a RAP model which was proposed by Modigliani and Modigliani (1997). They found that the mean annual return of S&P/ASX300 Australian REITs (A-REITs) (14.53 percent) underperformed the wholesale property funds (15.08 percent) and that 14 funds had excess returns beyond the market benchmark. Consistent to Higgins and Ng (2009), Newell and Peng (2009) also (A-REITs) outperformed the other major asset classes and was the best performing asset from 1996 to 2007 in their analysis of 26 A-REITs. However, in 2008, A-REITs underperformed the other asset classes as they were very much affected by the GFC. During that time, the A-REITs returns were more volatile than the stock market. Similarly, risks increased from 10.87 to 23.88 percent in 2007-2008 exceeding the stock market.

As for REITs in Asia, most are still in their developing stage except for Singapore. In Singapore, REITs are considered as a separate asset class when investors are looking to

diversify and to strategically better allocate their asset composition within their investment portfolios (Wong *et al.*, 2012). Newell *et al.* (2015) found Singapore REITs (S-REITs) outperformed the overall stock market in their assessment of S-REITs in a mixed asset portfolio from 2003 to 2013 by using the reward-to-risk ratio and the Sharpe ratio. This is supported by the finding of Koh *et al.* (2014) where they found that S-REITs provided a greater average annual return of 35 percent in comparison to 17 percent offered by the Straits Times Index (STI) in their period of study from 2008 to 2012. Their finding also showed that the total risk of S-REITs was higher than STI, which again concurs to the finding by Newell *et al.* (2015) who found that S-REITs had a higher risk than the stock market but lower than the property market. On a risk-adjusted basis, S-REITs had a superior performance as compared to the Singapore property companies and stocks except during the GFC. Similar to the A-REITs (Newell and Peng, 2009), S-REITs was the least performing asset during the GFC and their risk level also rose to 25.8 percent. However, after the GFC, S-REITs outperformed the other asset classes. As for South Korean REITs (K-REITs), Pham (2012) found that K-REITs performed poorly as compared to shares, bonds and property companies from 2002 to 2010, which was inconsistent to the results reported by Wong *et al.* (2012) and Newell *et al.* (2015) in the Singapore market. However, Pham's (2012) finding on a lower correlation between K-REITs and the property companies, suggested some level of diversification potential for investors, concurred to the work of Wong *et al.* (2012) but contradicts to Kuhle *et al.* (1986).

Kok and Khoo (1995) were among the first study that examined the performance of M-REITs. They looked at three LPTs over 1991 to 1995 by using the Sharpe Index (SI), Treynor Index (TI) and Jensen Index (JI). Their findings showed that the First Malaysia Property Trust outperformed other LPTs and performed at par with the market. However, in a falling (rising) market, the LPTs performed better (worse) than the market. Newell *et al.* (2002) extended the sample of Kok and Khoo (1995) by increasing the number of REITs and a longer study period from 1991 to 2000. Based on the mean annual return, only AmanahHarta Tanah PNB outperformed the Kuala Lumpur Composite Index (KLCI), Kuala Lumpur Property Index (KLPI) and Kuala Lumpur Office Price Index (KLOPI). However, if risk was taken into account, Newell *et al.* (2002) found that all the LPTs significantly underperformed the KLCI. Total risks for three of the LPTs namely First Malaysia Property Trust, AmanahHarta Tanah PNB and Mayban Property Trust Fund One were more than the overall stock market risk and significantly above the office real estate risk.

Subsequently, Hamzah *et al.* (2010) investigated the performance and systematic risk of Malaysia LPTs from 1995 to 2005. The adjusted SI, TI and adjusted JI show that the LPTs in general outperformed the market portfolios represented by the KLCI and KLPI during the crisis but underperformed in the pre-crisis and post-crisis periods. This finding contradicted to the results reported for the S- and A-REITs that showed LPTs were the least performing asset during the GFC (Newell *et al.*, 2015; Newell and Peng, 2009). Hamzah *et al.* (2010) associated their finding with the lag effect where according to them the performance of REITs was better during the crisis because the property and construction sectors may not immediately absorb the effect of economic downturn during the GFC. This study also found that the average systematic risks of REITs were slightly higher than the market portfolio during the pre-crisis and crisis period but were significantly lower in the post-crisis period.

A more current study by Ong *et al.* (2012) examined the investment performance of conventional and Islamic M-REITs from 2005 to 2010 by using the SI, TI and JI. All performance measures showed that conventional and Islamic REITs provided negative values, which indicate poor performances; and that they underperformed the market portfolio before and during the 2008 GFC, which contradicted to the results reported by Hamzah *et al.* (2010) and Kok and Khoo (1995). The finding on conventional REITs was consistent with those of Kallberg *et al.* (2002), Liow and Adair (2009) and Liow and

Sim (2006) in which all reported inferior average monthly returns and higher risk as compared to the Asian stocks during the financial crisis. Furthermore, Ong *et al.* (2012) discovered that the conventional and Islamic REITs outperformed the market portfolio after the crisis. The most recent study of M-REITS by Low and Johari (2014) looked into the performance and risk features using the Sharpe, Treynor, Jensen and M^2 measures from 2007 to 2012. Plantation REITs was found to be the best performing sector whereas diversified REITs presented relatively poor performance. β values for all samples were less than one and that the total risk of M-REITs came mostly from the unsystematic risk component. Furthermore, different risk measures give rise to contradictory performance ranking. Surprisingly, none of the Malaysian studies adjusted their returns in accordance to the dividend tax reforms that were presented in the 2007, 2009 and 2012 national budgets.

Literature on dividend tax reforms and their impact on REITs performance were rather scarce. Xu and Yiu (2010) examined the impact of tax reforms on 34 REITs from the USA and Australia during from 1971 to 2009. Their result showed that tax reform could affect REITs' return either positively or negatively depending on the tax reform period. Other than this, most studies focused on the effect of dividend tax changes on stock price. Poterba and Summers (1984) examined the effect of three dividend tax reforms (1958, 1964 and 1971) on stock prices in Britain. They found that the reduction in dividend taxes in 1958 and 1971 led to higher excess returns for high-yield shares. The finding was consistent to a study by Bell and Jenkinson (2002) on the impact of dividend tax reform in the UK in 1997. They found a significant drop in the valuation of dividend income following the tax reform as investors were unable to claim dividend tax credit, particularly for high-yielding firms that were largely held by tax-exempt investors. In the USA, Auerbach and Hassett (2005) found support for the value creation of the 2003 dividend tax cuts. They noted that high-yielding firms registered higher abnormal returns than their low-yielding counterparts. This is further supported by Amromin *et al.* (2005) who found positive abnormal returns surrounding the 2003 dividend tax cut announcements.

3. Research design
The sample comprises all 19 M-REITs that are listed at BM. Monthly return of the M-REITs, FTSE BM KLPI (KLPI), FTSE BM KLCI (KLCI) and three month Malaysia T-Bills were taken from datastream from January 1999 to December 2014. In total, 16 years period are tested because longer sample period can portray a better picture of REITs performance as they are considered to be in a volatile industry going through the peak and sluggish period as stressed by Han and Liang (1995). KLCI was used as the market benchmark. A self-constructed tax-adjusted value-weighted M-REITs index was constructed from the summation of each M-REITs total return index taking into account the tax reforms in the 2007, 2009 and 2012 budgets in which the Malaysian government improved the tax incentives. Dividend tax rate for individuals and domestic investors have been reduced from 15 (2007) to 10 percent (2009, 2012) and for foreign institutional investors, from 20 (2007) to 10 percent (2009, 2012) (KPMG, 2006, 2011) following the implementation of tax transparent status where REITs were exempted from paying tax if they disbursed 90 percent of their income as dividends to unitholders. Furthermore, to ensure an accurate performance of M-REITs, a tax-adjusted return of individual REITs are calculated as follows:

$$AR_{it} = \frac{P_{it} + D_{it} \times (1 - RT_{it})/(1 - CT_t)}{P_{it-1}} - 1 \qquad (1)$$

where AR_{it} is the tax-adjusted return for REIT i at month t; P_{it} the price for REIT i at month t; P_{it-1} the price for REIT i at month $t-1$; D_{it} the dividend for REIT i at month t; RT_{it} the dividend tax rate of REIT i at month t; CT_t the corporate tax rate at month t.

Three performance measures are utilized which are the Sharpe Index (1966), Treynor Index (1965) and Jensen Index (1968). These measures have been used by prior REITs performance studies (Hamzah *et al.*, 2010; Chan *et al.*, 1990; Goebel and Kim, 1989; Howe and Shilling, 1990; Kok and Khoo, 1995; Newell *et al.*, 2010, 2015; Ong *et al.*, 2012; Titman and Warga, 1986; Low and Johari, 2014). Parker (2011) emphasized that SI, TI and JI provided a theoretical solution to the real challenge in measuring risk-adjusted returns. None of these measurements dominated the others (Reilly and Brown, 2012). All of them perform equally well in evaluating portfolio's RAP.

Following Markowitz modern portfolio theory, Treynor (1965) considers two types of risk which are one that is generated by market fluctuations and the other that is resulted from securities fluctuations. Treynor introduces the characteristic line to relate the expected return of a portfolio to the return of the market portfolio where the slope is the β coefficient of the portfolio. Treynor does not consider risks which are caused by securities fluctuations as according to him in a completely diversified portfolio, this risk would be diversified away. TI shows the portfolio's risk premium return per unit of systematic risk. A higher *T*-value would infer a better portfolio performance. It is calculated as follows:

$$T_i = \frac{\overline{R}_i - \overline{R}_f}{\beta_i} \tag{2}$$

where $\overline{R}_i$ is the average return of portfolio i; $\overline{R}_f$ the average return of risk free rate investment; and β_i the slope of fund's characteristic line.

The second measure is the Sharpe index (1966). Sharpe introduces a composite measure of portfolio performance, which is closely related to his earlier work, the CAPM, looking specifically into the capital market line. It provides the portfolio's risk premium return per unit of total risk measured by the standard deviation of returns. SI is calculated as follows:

$$S_i = \frac{\overline{R}_i - \overline{R}_f}{\sigma_i} \tag{3}$$

where $\overline{R}_i$ and $\overline{R}_f$ carry the same definition as in Equation (2) whereas σ_i represents the standard deviation (total risk) of returns for portfolio i. When SI is utilized to evaluate individual fund, a fund that carries the highest predicted SI would be selected.

The third measure is Jensen index (1968) which is also based on CAPM. Jensen looks at the value of α_i to see whether a fund manager has superior or inferior investment ability. A fund manager is considered superior (inferior) if he or she could produce a significant positive (negative) α value. Positive JI indicates that the above average return adjusted for risk is attributable to the fund manager's ability in timing the market and/or in selecting undervalued securities. JI is estimated as follows:

$$R_{it} - R_f = \alpha_i + \beta_i(R_{mt} - R_f) + e_{it} \tag{4}$$

Other than the earlier notation, R_{mt} is the expected return of the market portfolio in period t and e_{it} is the random error term of period t. This equation shows that the risk premium on portfolio i is determined by the fund manager's ability plus the risk premium coming from the systematic risk of portfolio i and the random error term. Similar to Treynor, this measure does not take into account the fund manager's ability to diversify the portfolio.

4. Analysis of results
Table I exhibits the RAP of the M-REITs in comparison to the tax-adjusted value-weighted REITs index, KLCI, KLPI and T-Bills for the period from January 1999 to December 2014. The average monthly returns for 16 out of 19 REITs were higher than the KLCI which is

REITs	Mean (%)	SD (%)	Sharpe	Rank	β	Treynor	Rank	Jensen	Rank
Aqar Healthcare REIT	1.0708	4.0357	0.2042	8	0.2991	0.0275	5	0.0069	10
Al-Hadharah-Boustead REIT	1.6448	4.8719	0.2880	3	0.3786	0.0371	3	0.0125*	4
AmanahHarta Tanah PNB	0.7982	5.5429	0.1006	16	0.5497	0.0101	16	0.0030	16
AmanahHarta Tanah PNB2	0.5346	6.7050	0.0434	18	0.2881	0.0101	17	0.0022	18
Amanah Raya REIT	0.7478	3.7125	0.1356	14	0.2699	0.0187	10	0.0043	14
AmFirst-Property-Trust	1.4954	4.9734	0.2543	5	0.4745	0.0267	8	0.0103*	6
AmFirst REIT	0.9947	2.9652	0.2528	6	0.2948	0.0254	9	0.0065*	11
Atrium REIT	1.0619	4.5044	0.1816	10	0.5762	0.0142	13	0.0070	9
Axis REIT	2.2391	6.2630	0.3179	2	0.7393	0.0269	6	0.0168*	2
Capitamalls REIT	1.1682	4.3915	0.2088	7	0.3407	0.0269	7	0.0084	8
First Malaysia Property Trust	2.8440	19.0055	0.1366	13	0.5810	0.0447	1	0.0220	1
Hektar-REIT	1.3657	5.4947	0.2039	9	0.6141	0.0182	11	0.0091	7
IGB REIT	0.2444	2.5498	−0.0043	19	−0.1704	0.0006	19	0.0000	19
MRCB-Quill REIT	0.6633	6.1716	0.0678	17	0.4939	0.0085	18	0.0029	17
Pavilion REIT	1.3801	4.0576	0.2772	4	0.2614	0.0430	2	0.0106	5
Sunway REIT	1.6209	3.8218	0.3584	1	0.4243	0.0323	4	0.0128*	3
Tower REIT	1.0647	4.8189	0.1694	11	0.5047	0.0162	12	0.0060	12
UOA REIT	0.9631	4.4569	0.1604	12	0.5633	0.0127	15	0.0046	13
YTL Hospitality REIT[a]	0.7415	3.7763	0.1306	15	0.3603	0.0137	14	0.0033	15
Average Return of REITs	1.0690	4.4293	0.1870	na	0.4778	0.0173	na	0.0060*	na
Value-Weighted REITs Index	1.0082	4.2780	0.1795	na	0.4865	0.0158	na	0.0054*	na
KLCI	0.7100	5.1154	0.0918	na	1	0.0047	na	0.0000	na
KLPI	0.5167	6.8446	0.0403	na	1.0580	0.0026	na	−0.0022	na
3-month Malaysia T-Bills	0.2405	0.0396	na	na	na	na	na	na	na

Notes: [a]For REITs that were introduced after 1999, analysis begins with the listing month. *Statistically significant at 5 percent level

Table I.
Monthly performance of Malaysian REITs[a]: January 1999-December 2014

consistent to the study by Newell and Peng (2009) who found that the A-REITs outperformed the other major asset classes from 1996 to 2007. The average monthly return of the KLCI amounted to 0.7100 percent. Among the 19 M-REITs, First-Malaysia-Property-Trust (FMPT) provides the highest average monthly return of 2.8440 percent. This concurs to the result reported by Kok and Khoo (1995). All M-REITs except for IGB (0.2444 percent) outperformed the KLPI and T-Bills average return of 0.5167 and 0.2405 percent, respectively. The highest total risk is exhibited by FMPT, with a monthly standard deviation of 19.0055 percent. Six M-REITs exceeded the KLCI standard deviation that shows 5.1154 percent. The M-REITs' total risk ranged from 2.5498 to 19.0055 percent. In all, 12 out of 19 M-REITs have a higher total risk as compared to the tax-adjusted value-weighted M-REITs Index; whereas 18 M-REITs reveal a lower volatility against the KLPI except for FMPT. All M-REITs are found to be more volatile than the T-Bills.

SI indicates that 16 M-REITs outperformed the KLCI that shows a SI of 0.0918. The highest SI was obtained by Sunway with 0.3584. On average, the SI of M-REITs is 0.1870 surpassing the market SI, indicating that investors would receive a higher excess return per unit of total risk. This result is consistent to the findings by Newell and Osmadi (2009) and Low and Johari (2014) where they showed that the M-REITs sector outperformed the overall stock market. Furthermore, the SI of the M-REITS index was found to outperform the KLCI SI; whereas the KLPI SI was the lowest among the indexes. If the M-REITs were compared against the KLPI, only IGB shows a lower SI. This is because it has the smallest average return and standard deviation among all M-REITs. The M-REITs' β ranged

from −0.1704 to 0.7393 which is lower than the KLCI's β of 1 indicating that M-REITs are less volatile than the market. AXIS provides the highest systematic risk of 0.7393, implying that it is 26.07 percent less sensitive than the KLCI.

As for Treynor measure, FMPT has the highest ratio of 0.0447 which is greater than the KLCI of 0.0047. In total, 18 M-REITs outperformed the KLCI and KLPI. This is in contrast to Low and Johari (2014) who found Hektar-REIT was the only REIT that outperformed the KLCI. In this study, Hektar-REIT was ranked number 11. The lowest rank goes to IGB which is similar to the Sharpe and JIs. For most REITS, the Sharpe and Treynor measures did not generate the same performance ranking except for Al-Hadharah-Boustead and Capitamalls that are ranked at third and seventh places. An examination on the M-REITS index exhibits a SI and TI of 0.1795 and 0.0158, which are lower than the average return of M-REITs that provides a SI and TI of 0.1870 and 0.0173, respectively. Nevertheless, both outperformed the KLCI and KLPI, implying that investing in REITs is better than the stock and property markets.

With regards to JI, M-REITs show a range from 0.0000 to 0.0220, where FMPT has the highest JI as was identified in TI. FMPT could provide an excess return of 2.2 percent per month more than expected given the REIT's risk level. All M-REITs exhibited positive JI beyond the KLPI, which is consistent to the finding by Kuhle *et al.* (1986). They found that REITs outperformed the S&P500 Index during 1977 to 1985. Five M-REITs (Al-Hadharah-Boustead, AmFirst-Property-Trust, Amfirst, AXIS and Sunway) have a positive and statistically significant α which shows that the fund managers were either good in selecting undervalued assets or in timing the market. This result is supported by Low and Johari (2014) where JI of ten REITs were found to generate positive αs. It also concurs to Titman and Warga (1986) who found that REITs outperformed the CRSP index. As for M-REITS index (0.0054) and average return of REITs (0.0060), they exhibited a statistically significant positive JI beyond the KLCI and KLPI which had an insignificant 0.0000 and −0.0022 JI. This result indicated that the M-REITS index and average return of REITs could generate an excess return of about 0.54 and 0.60 basis points more than what would have been anticipated given the level of risk.

An examination of the average return of the T-Bills shows that it underperformed the M-REITs, KLCI, KLPI and M-REITS index; and its standard deviation was lower than the rest of the indexes. Overall, the results show that M-REITs' outperformed the M-REITS index, KLCI, KLPI and the three month Malaysia T-Bills. This concurs to the study by Higgins and Ng (2009) and Low and Johari (2014). In order to confirm that there is a difference in the monthly performance of M-REITs before and after the implementation of the 2007, 2009 and 2012 tax incentives, sub-samples were created. Table II presents the monthly performance for nine M-REITs before the tax incentives was implemented (January 1999 to December 2006) and Table III exhibits the monthly performance for 17 M-REITs after the implementation of the tax incentives (January 2007 to December 2014).

Table II shows that the average monthly returns for three M-REITs were higher than the KLCI (0.8305 percent) and M-REITS index (0.7846 percent); whereas four M-REITs, i.e. Al-Akqar-Healthcare (−0.3154 percent), UOA (−0.3607 percent), Tower (−1.0380) and YTL Hospitality (−1.1713 percent) underperformed the KLPI (0.0861 percent) and three month Malaysia T-Bills (0.2353 percent). On an aggregate basis, although the average return of M-REITs outperformed the M-REITS index, KLCI, KLPI and T-Bills, there were more individual M-REITs underperformed the KLCI and M-REITS index during this period. KLPI was the worst performing sector with a monthly mean return of 0.0861 percent and the highest total risk of 7.1919 percent. The highest total risk is exhibited by FMPT (19.0055 percent). Standard deviations of M-REITs range from 2.3292 to 19.0055 percent. In comparison to the total risk of the KLCI (6.2111 percent), three (four) M-REITs exceeded the market (M-REITS index) total risk. When each M-REITs was compared to the KLPI, only FMPT had a higher standard deviation than the property index.

REITs	Mean (%)	SD (%)	Sharpe	Rank	β	Treynor	Rank	Jensen	Rank
Al Aqar Healthcare REIT	−0.3154	2.3806	−0.2538	7	0.4130	−0.0146	7	−0.0216	8
AmanahHarta Tanah PNB	0.4174	7.1239	0.0256	4	0.6841	0.0027	4	−0.0023	5
AmanahHarta Tanah PNB2	0.2617	6.9021	0.0038	5	0.3386	0.0008	5	−0.0018	4
AmFirst-Property-Trust	1.4954	4.9734	0.2538	1	0.4745	0.0266	2	0.0103*	2
Axis REIT	1.1462	5.4302	0.1625	2	0.3633	0.0243	3	0.0055	3
First Malaysia Property Trust	2.8440	19.005	0.1363	3	0.5810	0.0446	1	0.0220	1
Tower REIT	−1.0380	4.0106	−0.3306	8	0.7306	−0.0182	8	−0.0252	9
UOA REIT	−0.3607	3.1870	−0.1987	6	0.7130	−0.0089	6	−0.0166	7
YTL Hospitality REIT	−1.1713	2.3292	−0.6200	9	0.0814	−0.1773	9	−0.0156	6
Average Return of REITs	0.8916	5.7104	0.1149	na	0.4968	0.0132	na	0.0036	na
Value-Weighted REITs Index	0.7846	5.3497	0.1027	na	0.9689	0.0108	na	0.0025	na
KLCI	0.8305	6.2111	0.0958	na	1	0.0060	na	0.0000	na
KLPI	0.0861	7.1919	−0.0208	na	0.5073	0.0057	na	−0.0072	na
3-month Malaysia T-Bills	0.2353	0.0408	na	na	na	na	na	na	na

Table II.
Monthly performance of Malaysian REITs[a]: January 1999-December 2006

Notes: [a]For REITs that were introduced after 1999, analysis begins with the listing month. *Statistically significant at 5 percent level

REITs	Mean (%)	SD (%)	Sharpe	Rank	β	Treynor	Rank	Jensen	Rank
Al Aqar Healthcare REIT	1.1141	4.0767	0.2131	7	0.3141	0.0277	7	0.0076	10
Al-Hadharah-Boustead REIT	1.6448	4.8719	0.2880	3	0.3510	0.0400	4	0.0117	4
AmanahHarta Tanah PNB	1.1751	3.3082	0.2810	4	0.1943	0.0479	2	0.0086*	7
AmanahHarta Tanah PNB2	1.4607	6.0109	0.1980	11	0.0662	0.1797	1	0.0125	3
Amanah Raya REIT	0.7478	3.7125	0.1356	15	0.2526	0.0199	10	0.0039	15
AmFirst REIT	0.9947	2.9652	0.2528	6	0.2940	0.0255	9	0.0064*	13
Atrium REIT	1.0619	4.5044	0.1812	14	0.5762	0.0142	15	0.0070	11
Axis REIT	2.4099	6.3918	0.3386	2	0.7789	0.0278	6	0.0189*	1
Capitamalls REIT	1.1682	4.3915	0.2088	8	0.3407	0.0269	8	0.0084	8
Hektar-REIT	1.3657	5.4947	0.2039	9	0.6141	0.0182	12	0.0091	6
IGB REIT	0.2444	2.5498	−0.0043	17	−0.1704	0.0006	17	0.0000	17
MRCB-Quill REIT	0.6633	6.1716	0.0678	16	0.4660	0.0090	16	0.0024	16
Pavilion REIT	1.3801	4.0576	0.2772	5	0.2614	0.0430	3	0.0106	5
Sunway REIT	1.6209	3.8218	0.3584	1	0.4243	0.0323	5	0.0128*	2
Tower REIT	1.2180	4.8546	0.2003	10	0.5102	0.0191	11	0.0080	9
UOA REIT	1.1148	4.5682	0.1903	12	0.5715	0.0152	14	0.0067	12
YTL Hospitality REIT	0.9607	3.8560	0.1855	13	0.3982	0.0180	13	0.0058	14
Average Return of REITs	1.2445	2.6286	0.3800	na	0.4302	0.0232	na	0.0085*	na
Value-Weighted REITs Index	1.2295	2.8609	0.3439	na	0.4352	0.0226	na	0.0083*	na
KLCI	0.5908	3.7596	0.0918	na	1	0.0035	na	0.0000	na
KLPI	0.9428	6.4923	0.1074	na	1.3082	0.0053	na	0.0025	na
3-month Malaysia T-Bills	0.2456	0.0380	na	na	na	na	na	na	na

Table III.
Monthly performance of Malaysian REITs[a]: January 2007-December 2014

Notes: [a]For REITs that were introduced after 2006, analysis begins with the listing month. *Statistically significant at 5 percent level

All M-REITs had a higher total risk than the T-Bills. On average, the total risk of M-REITs is higher than the M-REITS index, but lower than the KLCI and KLPI. As for systematic risk, the M-REITs' βs range from 0.0814 to 0.7306 which is lower than the KLCI's β of 1. A low β of 0.4968 on the average return of all REITs is lower than the systematic risk of the M-REITS index and KLPI. Tower REIT had the highest systematic risk of 0.7306, implying that it was 26.94 percent less sensitive against KLCI.

The result of Sharpe and Treynor measures shows an almost similar finding except for the ranking of AmFirst-Property-Trust, AXIS and FMPT. Based on SI, AmFirst-Property-Trust was ranked first while AXIS and FMPT ranked second and third place. However, TI shows that FMPT was ranked first with AmFirst-Property-Trust and AXIS at the second and third rank. For the other REITs, SI and TI exhibited the same rankings. In total, three (six) REITs outperformed (underperformed) the KLCI and M-REITS index; whereas five (four) REITs outperformed (underperformed) the KLPI based on Sharpe and Treynor measures. As for JI, the M-REITs exhibit a range from −0.0252 to 0.0220, in which FMPT had the highest value as was identified in TI. However, it was insignificant. The only M-REIT that was found to have a significant positive JI was AmFirst-Property-Trusts that showed it could provide an excess return of 1.03 percent per month more than expected, given the REIT's risk level. JI of the average returns of REITs supersedes the M-REITS index, KLCI and KLPI, but again none of them were significant.

After the year 2007 (refer to Table III), there were 17 REITs listed on BM. In all, 16 REITs were having a higher average monthly return than the KLCI (0.5908 percent) during the sub-period from January 2007 to December 2014. The highest average monthly return (2.4099 percent) and total risk (6.3918 percent) were shown by AXIS. Six M-REITs outperformed the value-weighted M-REITS index. In comparison to the KLPI, the M-REITs were doing better where there were only three REITs, namely Amanah Raya (0.7478 percent), IGB (0.2444 percent) and MRCB-Quill (0.6633 percent) had lower average returns than the KLPI (0.9428 percent). All M-REITs had an average return higher than the three month T-Bills except for IGB. The standard deviation of the monthly return for 13 M-REITs surpassed the KLCI which stood at 3.7596 percent. M-REITs' total risk ranges from 2.5498 to 6.3918 percent; whereas systematic risk shows a range of −0.1704 to 0.7789 which is lower than the KLCI and KLPI β that carries a respective 1 and 1.3082. AXIS has the highest systematic risk of 0.7789, implying that it is 22.11 percent less sensitive than the market. All M-REITs except IGB had a higher standard deviation as compared to M-REITS index. However, in comparison to the KLPI, all M-REITs had a lower standard deviation. Moreover, all M-REITs are found to be more volatile than the three month T-Bills.

Sharpe measure indicates that 15 M-REITs outperformed the market index which stood at 0.0918. The average SI of the M-REITs (0.2104), M-REITS index (0.3439) and KLPI (0.1074) surpassed the KLCI Sharpe ratio (0.0918) indicating that these sectors were doing better than the market. The highest SI was obtained by Sunway (0.3584). As for the Treynor measure, AmanahHarta Tanah PNB2 with a 0.1797 had the highest TI as compared to the market TI of 0.0035. In all, 16 M-REITs outperformed the KLCI based on the Treynor ratio. The lowest ranking REITs was still IGB as identified by the Sharpe and Jensen α. However, the ranking of most REITs based on the Sharpe, Treynor and Jensen measures was inconsistent except for MRCB-Quill and IGB. Further examination on the Sharpe and Treynor ratios for the average return of all REITs which showed a respective 0.3800 and 0.0232, outperformed the M-REITS index, KLCI and KLPI; whereas the M-REITS index SI of 0.3439 and TI of 0.0226 exceeded the market and property indexes. After the implementation of the 2007, 2009 and 2012 tax reforms where the dividend tax rate for individuals and domestic investors have been reduced from 15 percent (2007) to 10 percent (2009, 2012) and for foreign institutional investors, from 20 percent (2007) to 10 percent (2009, 2012), the performance of REITs was better than the KLCI and KLPI, indicating that investing in REITs is better than investing in the equity and property sectors.

This is further supported by the result from the Jensen α. A significant positive JI is observed on the average return of REITs (0.0085) and the M-REITS index (0.0083). These indexes outperformed the KLCI (0.0000) and KLPI (0.0025) that were found to produce insignificant JI. The M-REITs exhibited a positive JI that ranged from 0.0000 to 0.0189, with

AXIS providing the highest excess return of 1.89 percent per month more than expected given its risk level. In total, 13 M-REITs have a positive and statistically insignificant JI. Other than AXIS, AmanahHarta Tanah PNB, AmFirst and Sunway also had a significant positive JI which infers that the fund managers had a superior investment ability where they were either good in selecting undervalued assets or in timing the market. MRCB-Quill and IGB were found to have a lower JI than the KLPI. Moreover, IGB has zero α which means that the risk-adjusted return was equal between the IGB and the market benchmark.

To further verify on the impact of the 2007, 2009 and 2012 tax incentives, the performance of seven M-REITs which have been listed before and after the tax reforms, is presented in Table IV. Most of the REITs counters had better mean returns once the tax incentives were implemented. On a risk-adjusted basis, the SI and TI of the average return of REITs after the tax reforms exceeded those measures before the tax reforms were being introduced. The JI of the average return of REITs and the M-REITS index exhibited a positive and significant value of 0.0097 and 0.0083 after the tax reforms which superseded the insignificant negative values before the 2007, 2009 and 2012 tax reforms. This concurs to the study by Xu and Yiu (2010) where the effect from tax changes to REITs excess return were 0.10 percent for REIT Modernization Act of 1999 sand 0.07 percent for REITs Investment Diversification and Empowerment Act of 2007, respectively. On an individual basis, all M-REITs performance measures show improved figures beyond the values observed before the tax reforms. AmanahHarta Tanah PNB and AXIS have a statistically significant positive JI indicating that these REITs had generated a respective excess return

REITs	Mean (%)	SD (%)	Sharpe	β	Treynor	Jensen
Before 2007 (January 1999-December 2006)[a]						
Al Aqar Healthcare REIT	−0.3154	2.3806	−0.2538	0.4130	−0.0146	−0.0216
AmanahHarta Tanah PNB	0.4174	7.1239	0.0256	0.6841	0.0027	−0.0023
AmanahHarta Tanah PNB2	0.2617	6.9021	0.0038	0.3386	0.0008	−0.0018
Axis REIT	1.1462	5.4302	0.1625	0.3633	0.0243	0.0055
Tower REIT	−1.0380	4.0106	−0.3306	0.7306	−0.0182	−0.0252
UOA REIT	−0.3607	3.1870	−0.1987	0.7130	−0.0089	−0.0166
YTL Hospitality REIT	−1.1713	2.3292	−0.6200	0.0814	−0.1773	−0.0156
Average Return of REITs	0.2435	5.7690	0.0014	0.5083	0.0002	−0.0030
Value-Weighted REITs Index	0.7846	5.3497	0.1027	0.9689	0.0057	−0.0072
KLCI	0.8305	6.2111	0.0958	1.0000	0.0060	0.0000
KLPI	0.0861	7.1919	−0.0208	0.5073	−0.0029	0.0025
Monthly 3-month Malaysia T-Bills	0.2353	0.0408	na	na	na	na
After 2007 (January 2007-December 2014)[a]						
Al Aqar Healthcare REIT	1.1141	4.0767	0.2131	0.3141	0.0277	0.0076
AmanahHarta Tanah PNB	1.1751	3.3082	0.2810	0.1943	0.0479	0.0086*
AmanahHarta Tanah PNB2	1.4607	6.0109	0.1980	0.0662	0.1797	0.0125
Axis REIT	2.4099	6.3918	0.3386	0.7789	0.0278	0.0189*
Tower REIT	1.2180	4.8546	0.2003	0.5102	0.0191	0.0080
UOA REIT	1.1148	4.5681	0.1903	0.5715	0.0152	0.0067
YTL Hospitality REIT	0.9607	3.8560	0.1855	0.3982	0.0180	0.0058
Average Return of REITs	1.3615	2.8630	0.3898	0.4352	0.0226	0.0097*
Value-Weighted REITs Index	1.2295	2.8609	0.3439	0.4352	0.0226	0.0083*
KLCI	0.5908	3.7596	0.0918	1.0000	0.0035	0.0000
KLPI	0.9428	6.4923	0.1074	1.3082	0.0053	0.0025
3-month Malaysia T-Bills	0.2456	0.0380	na	na	na	na

Notes: [a]For REITs that were introduced after 1999, analysis begins with the listing month. *Statistically significant at 5 percent level

Table IV.
Monthly performance of Malaysian REITs before and after the tax reforms

of 0.86 and 1.89 percent per month more than what would have been anticipated given their level of risk. Overall, upon the implementation of the 2007, 2009 and 2012 tax incentives, most of the individual REITs counters, M-REITS index and average return of REITs had better RAP conforming to the earlier results.

5. Conclusion

Performance of M-REITs is re-visited in this study to take into account of the effect of the tax reforms in 2007, 2009 and 2012. The study improves upon the existing literature on REITs by utilizing tax-adjusted returns of individual REITs and tax-adjusted value-weighted REITs index. Performance of 19 M-REITs was measured by using the Sharpe (1966), Treynor (1965) and Jensen (1968) risk-adjusted measures from January 1999 to December 2014. Most of the M-REITs outperformed the KLCI, KLPI, tax-adjusted value-weighted REITs index and the Malaysia three month T-Bills during the period of study. FMPT generated the highest mean return and total risk. Based on the Treynor and Jensen performance measures, it was ranked first. All the RAP measures showed that the average return of M-REITs and the tax-adjusted value-weighted REITs index outperformed the KLCI and KLPI, implying that during this period, investing in REITs is better than investing in the equity market, property sector and the government three month T-Bills. The T-Bills underperformed the other financial assets with a monthly mean return of 0.2405 percent but had the lowest total risk of 0.0396 percent.

The sample was then split into two sub-samples which are before and after the implementation of the tax reforms. We have used the year 2007 to separate between the two sub-samples as that was the year when the first announcement was made on the reduction of the dividend tax rate for individuals, domestic and foreign institutional investors following the implementation of tax transparent status on REITs. Before the 2007 tax incentive was introduced, most of the REITs counters showed unfavorable performance against the KLCI, KLPI, M-REITS index and the Malaysia three month T-Bills. Based on the Sharpe and Treynor ratios, FMPT, AmFirst-Property-Trust and AXIS outperformed the KLCI, KLPI, and M-REITS index. Except for AmFirst-Property-Trust that ranked second in terms of performance, the other two REITs had positive JI but were statistically insignificant. Overall during this period, M-REITS index outperformed the KLCI and KLPI based on SI and TI measures. However, it generated an insignificant positive Jensen's α which is inconsistent to the result reported for the whole period from January 1999 and December 2014. In terms of total risk, more than half of the M-REITs have lower standard deviation than the rest of the financial assets. The T-Bills provide the lowest total risk.

Subsequent to the implementation of the tax incentives in 2007, there were more M-REITs that outperformed the KLCI, KLPI, M-REITS index and T-Bills. AXIS generated the highest mean return and standard deviation with a significant positive JI. Other than AXIS, AmanahHarta Tanah PNB, AmFirst and Sunway were also having a significant positive JI. Based on SI, TI and JI, the average return of M-REITs outperformed the KLCI, KLPI, M-REITS index and T-Bills and it provides the lowest total risk except for the T-Bills. Further robustness check on seven M-REITs that existed before and after the tax reforms also shows that the M-REITs counters had better mean returns after the tax reforms. Based on Treynor and Sharpe measures, individual M-REITs figures had improved beyond those values before the tax incentives were implemented. A significant positive JI of the average return of M-REITs and the value-weighted REITs index superseded the insignificant negative values before the 2007, 2009 and 2012 tax reforms.

The finding of this study shows that the introduction of the tax incentives benefited both REITs and investors. REITs performed better than before the tax incentives were introduced. Investors would be able to compare the performance of all REITs before and

after the implementation of the tax incentives, as well as with other financial assets for better investment decision making. For fund managers, they can obtain a more accurate assessment on REITs performance in order to decide on the investment mix to be included in their portfolio based on investor's needs and risk tolerance level as the returns have taken into account the tax incentives. Moreover, fund managers' performance can be assessed whether they perform better or worse than the market by looking at the risk and return performance of REITs and other financial indexes presented in this study. Through Jensen α, the market could assessed whether these fund managers are able to time the market or to select undervalued assets. For the regulators, the finding could help in evaluating whether the tax incentives had assist in improving the performance of REITs and to help decide whether the tax incentives should remain or discontinue by the end of 2016.

Acknowledgment

Note

1. USD1 = RM4.20

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Corresponding author
Nur Adiana Hiau Abdullah can be contacted at: adiazman@yahoo.com