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CAPITAL MARKET REVIEW

Risk and Real Estate Investment Trust (REITs) Return: Evidence from Listed Public Trust

Nor Edi Azhar Binti Mohamad*, Noriza Mohd Saad**, and Suzaida Bakar***

This study examines an association of risk and returns of REITs from Malaysian REITs listed companies. The secondary data for analysis is retrieved from Bloomberg's Database of all 13 listed REITs in the Bursa Malaysia main market for three year period, from 2007 to 2009 with quarterly observation. The dependent variables are average return, expected return using Capital Asset Pricing Model, Sharpe Index, and Jensen Alpha Index. The independent variables represented by standard deviation, beta, trading volume, gross domestic product, inflation rate, and share price. The control variable for this study is type of REITs, whether it was categorized as Islamic or conventional REITs. Applying correlations and multiple regression analysis, the results provide evidence on the association between return and risk on REITs. This study is also hoped to bring benefits to the public listed company and shareholders in obtaining the key factors in determining the REITs yield.

Keywords: *Real Estate Investment Trust, Capital Asset Pricing Model, Sharpe Index, Jensen Index, error correction model*

Introduction

Real Estate Investment Trust (REIT) is a new asset class investment alternatives come into view among Malaysian investors with potential fair return of investment besides equities, bond, property, trust fund, and others related investments materials. Securities Commissions (SC) has defined REITs as "property trust fund" or as an investment trust investment vehicle that invests or proposes to invest at least 50% of its total assets in real estate. An investment in real estate may be by way of direct ownership or a shareholding in a single-purpose company whose principal assets comprise real estate (SC, 2005). The Commission had issuing the *Guidelines on Real Estate Investment Trusts* in 2005, a revision and renamed version of the earlier *Guidelines on Property Trust Funds* that were introduced since 1995. The revised version is to enhance the attractiveness of Bursa Malaysia as a destination for

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REIT listings and promote a vibrant and competitive REIT industry domestically and regionally, and the tax incentives relating to REITs were earlier announced during the tabling of Budget 2005 (SC, 2005). Basically, REITs based companies own and actively manage income-producing commercial real estate with the concept like Unit Trust and some are publicly traded in Bursa Malaysia like a normal equity. The listed REITs are liquid assets and can be easily sold to raise cash and take advantage of investment opportunities. The returns of investing in REITs are distributed to the investors in the form of dividends or distribution and capital gains for the holding period.

REITs can be considered as an alternative investment as apposed to typical listed equity stocks, since REITs as a liquid proxy to physical real estate investments has potential for earnings enhancement through property acquisitions and active asset management, besides, it tends to be less risky while providing high dividend yields. However, according to The Star (2007), though REITs were first introduced in Malaysia under the new *Guidelines on Real Estate Investment Trusts* in 2005 following the listing of Axis REIT, there has been a lack of education on this instrument, hence there is lack of popularity of REIT instruments among retail investors in Malaysia, compared to more developed markets like Singapore, US, Japan and Australia. Thus, this study is undertaken to provide some insights into this alternative investment by looking at the risk return tradeoff of REITs investments factors that may influence returns to generate greater interest for REITs among retail investors.

Development of REITs in Malaysia

The history and development of REITs started with the first Malaysian listed property trust, Arab Malaysian First Property Trust, on the Kuala Lumpur Stock Exchange (KLSE) in September 1989 and first acknowledged as listed property trusts. Followed by First Malaysian Property Trust by November 1989, Amanah Harta Tanah PNB by December 1990, and then unlisted Mayban Property Trust Fund One launched in 1990. Since then no listed property trusts issued until Amanah Harta Tanah PNB 2 was listed in March 1997. As at the end of April 2005, only three property trusts were listed on the Bursa Malaysia comprising AmFirst Property Trust (formerly known as Arab Malaysian First Property Trust), Amanah Harta Tanah PNB, and Amanah Harta Tanah PNB 2 as First Malaysia Property Trust was delisted in July 2002. In an effort to create a vibrant REITs industry in Malaysia with the introduction of the new *Guidelines on Real Estate Investment Trusts* on 3rd January 2005, Malaysia has seen the debut of Axis REITs listed on Bursa Malaysia on 29th July 2005. Followed by Starhill REITs on 16th December and UOA REITs on 30th December, the same year. In 2006, the market witnessed the listing of Tower REITs, Al-Aqar KPJ REITs and Hektar REITs, and as by the end of 2007, Quill capital trust, Al-Hadarah, Atrium REITs were listed in Bursa Malaysia. The latest listed REITs was Amanahraya-REIT in September 2009 and to date by May 2010, 12 REITs was listed in Bursa Malaysia with Amanah Harta Tanah PNB 2 ceased its listing in year 2009.

In November 2005, The Malaysian Government through the SC of Malaysia has issued the *Guidelines for Islamic Real Estate Investment Trusts (I-REITs Guidelines)* as outlined by the Syariah Advisory Council (SAC) of the SC to facilitate the establishment of Islamic REITs in Malaysia. As apposed, these guidelines must be adhered to by the market players and be read together with the *Guidelines on Real Estate Investment Trusts* (SC, 2005). Consequently, with the introduction

of *I-REITs Guidelines*, Malaysia is given credit by becoming the first jurisdiction in the global financial sector to issue such Guidelines in the industry (Mohamed, 2007). While conventional REITs are subjected to the capital market laws, Islamic REITs are subjected not only to the capital market laws but also to the Quranic law of economics. As according to Dusuki (2007), Islamic REITs differ from conventional property funds mainly due to the requirement to strictly observe Islamic investment guidelines and Syariah principles. In Malaysia, Al-'Aqar KPJ REIT became the first Malaysian company and being the first Islamic REIT in the world to establish and launch Islamic REITs that focused on hospital and healthcare facilities, followed by Al-Hadharah Boustead REIT as the second Islamic REIT listed on Bursa Malaysia and the first Islamic plantation REIT that concentrated its involvement in palm oil plantations. The latest listed Islamic REITs is AXIS REIT that were converted from its existing conventional structure in December 2008 and offer more diversified investment which incorporated both office and industrial assets. Table 1 represent the growth and listed REITs in Malaysia.

Literature Review

Many researchers have studied on REITs from different views and in different environments. However, risk and return analysis is a much-examined area in REITs. According to Henderson Global Investors, Singapore (2006), REITs offer a liquid proxy for the physical real estate market which means investors can build regional and diversified portfolios in a cheap and efficient manner without the complexities of buying physical real estate. The tax efficiency means they are high yielding, and the high yield tends to reduce share price volatility which makes REITs relatively low risk compared to other equities. Several studies do specifically investigate the components of REITs' systematic risk that become one of the factors determined on REITs return. Chan et al. (1990) analyzed three factors

Table 1. Historical growth of Malaysian listed property trusts and REITs

No	Listed Property Trust/REIT	KLSE/ Bursa Malaysia Listing	Total Assets as at 2009
1	Arab Malaysian First Property Trust[1]	September 1989	N/A
2	First Malaysia Property Trust[2]	November 1989	N/A
3	Amanah Harta Tanah PNB	28 December 1990	NRM 155.5million
4	Amanah Harta Tanah PNB 2[3]	25 March 1997	RM 98,962 million
5	Axis REIT *[4]	29 July 2005	RM 907,745 million
6	Starhill REIT	16 December 2005	RM1,656,676million
7	UOA REIT	30th December 2005	RM 519,351,271
8	Tower REITs	12 April 2006	RM598,799 million
9	Al-Aqar KPJ REITs*	10 August 2006	RM 994.45 million
10	Hektar REIT	4 December 2006	RM 777,125 million
11	AmFirst REITs	21 December 2006	RM 1,022,746,962
12	Quill Capital Trust	8 January 2007	RM 472,537,249
13	Al-Hadharah Boustead REIT*	8 February 2007	RM865,555 million
14	Atrium REIT	April 2007	RM 182,349,774
15	Amanahraya-REIT	September 2009	RM 748,000,900

Notes
Sources: Company Annual Report year 2009.
* Islamic Fund
1 Arab Malaysian First Property Trust changed to AmFirst REITs in December 2006
2. First Malaysia Property Trust delisted in July 2002
3 Amanah Harta Tanah PNB 2 delisted in November 2009
4 Axis REITs converted to S-REITs in December 2008.

driven of REIT and general stock market; McCue and Kling (1994) study on the relationships between the macroeconomics and commercial real estate returns; Simpson et al. (2007) documents a strong asymmetry in the response of equity REIT returns to inflation; and Chen and Peiser (1999) found evidence that REIT portfolio average returns show no positive relationship with beta. However, variables such as volatility, geographical diversification, and property type specialization appear to have more positive impact.

Even though a number of studies about REITs were undertaken in many countries around the world, especially in Western countries, however, there are quite limited literature devoted from Malaysia perspective. Presented here is some of the study that was done from Malaysia perspective from different angle that could be used as a reference for the study. Kok and Khoo (1995) examined the performance and the systematic risk of three listed property trusts, over the January 1991-April 1995 period and divided the period into three sub-period: rising market, over-speculated market, and declining market. By utilizing Sharpe Index, Treynor Index and Jensen Index, their findings concluded that listed property trusts generally performed better than the market in a falling market, but worse than the market in a rising market however the listed property trusts did not give consistent performances. The study then further developed by Rozali et al. (2007) to investigates the performance and systematic risk of listed property trusts in Malaysia for the 1995 to 2005 periods according to sub-periods, namely pre-crisis, during crisis and post-crisis. Their study indicates that the risk-adjusted performance varied over the study period where in general outperformed the market portfolios during the crisis but underperformed in the pre-crisis and post-crisis periods. Newell et al. (2002) analyzed the performance of four listed property trusts over the 1991-2000 periods. They employ average annual returns to quantify returns, standard deviations to quantify risks, and coefficient of variations to quantify risk-adjusted performances. The study indicates that each of the listed property trusts significantly underperformed compared to the Kuala Lumpur Composite Index and real estate companies sector by using coefficient of variation measure, while, three of the listed property trusts when measured by standard deviation were more than the overall stock market risk and significantly above the office real estate risk. Ali (2006) examined the size effect to the performance of real estate shares based on the total of 30 real estate shares selected randomly from Bursa Malaysia and divided into three groups based on big, medium, small capitalization group. The results indicate that big capitalization real estate shares have better performance than other real estate shares with higher return and lower risk in the allocation with mixed assets. The study also found that there is a negative relationship between size and unsystematic risk in which the larger the firm size, the lower the unsystematic risk is.

Methodology

Only secondary data are needed in this study and all REITs company were taken, which represents 100% sample consist of 13 Malaysian REITs namely Amanah Harta Tanah PNB, Amanah Harta Tanah PNB 2, Axis REIT, Starhill REIT, UOA REIT, Tower REITs, Al-Aqar KPJ REITs, Hektar REIT, AmFirst REITs, Quill Capita Trust, Al-Hadharah Boustead REIT, Atrium REIT and Amanahraya-REIT. The analysis of return is based on the observation of quarterly return for 3 years from 2007 until 2009. The data for this study comprised of two categories: dependent and independent variables. In this study, for

the measurement of REITs risk and return we followed the study from Kok and Khoo (1995), Rozali et al. (2007), and Newell et al. (2002). The dependent variables are based on four performance measurement methods that were applied to represent the return measurement of REITs, namely average return, expected return using Capital Asset Pricing Model (CAPM), Sharpe Index (SI), and Jensen Alpha Index (JI). The independent variables are risk which represented by standard deviation to embody total risk (TR), as indicated by Reilly (1989): "*the standard deviation (or variance, which is the standard deviation squared), measures the total risk of an investment*"; beta to embody market risk also known as systematic risk (MR); trading volume (V) in Ringgit Malaysia; gross domestic product (GDP); inflation rate (CPI); and share price (P). The control variable for this study is type of REITs whether it was categorized as Islamic or Conventional REITs. Data on the variables are obtained from Bloomberg database, Thompson DataStream, Yahoo Finance, and companies' annual report.

The first measurement of return we used in this study is average market return. Even though there are some shortcomings to this measure, but the main argument against it is that it does not take into account the risk taken to achieve certain return. Mathematically, average return for each REITS is defined as;

$$R_{Pt} = \frac{1}{n}\sum_{i=1}^{n} R_{Pt} \qquad (1)$$

Here R_{pt} is the return on fund p at time t and n represents the number of fund returns in the sample. R_{pt} is the rate of returns for each REITS and is calculated as follows, where R_{pt} is total return of a portfolio (individual REIT), P_t is price at time t, and P_{t-1} is price one period before time t.

$$R_{Pt} = \frac{P_t - P_{t-1}}{P_{t-1}} \qquad (2)$$

The expected required return using Capital Asset Pricing Model (CAPM) framework that was developed by Sharpe (1964) can be displayed as follows:

$$\overline{R} = R_F + \beta_I (R_M - R_F)$$
R_I *is the company's beta*
R_F *is the free rate*
R_M *is the market risk* (3)

We use the returns on the Kuala Lumpur Composite Index (KLCI) as a proxy for returns on the market portfolio to represent the Malaysian perspective of market performance, and the risk-free rate of return that was reflected by the Malaysia Government Security bills. For the beta coefficient, we followed the study done by Rozali et al. (2007), which measures the systematic risk of REIT portfolio, by regressing the returns of each REITS on the returns of the market portfolio, where α_p a constant term, is, β_p is the beta coefficient of the portfolio and R_{mt} is the returns on the market portfolio, and e_{pt} is the corresponding random disturbance term in the regression equation as follows:

$$R_{pt} = \alpha_p + \beta_p R_{mt} + e_{pt} \qquad (4)$$

Another performance measure is Sharpe Index that was widely used as performance measure in financial literature, which measures investment performance using total risk developed by Sharpe (1966). Mathematically, the Sharpe Index can be described as:

$$SI = \frac{\left(R_P - R_f\right)}{\sigma_P} \qquad (5)$$

With the variables in the nominator for SI (Sharpe Index) is, R_p is the return for portfolio, R_f is the risk-free rate of return and σ_p is the standard deviation of returns for portfolio. The denominator for σ_p being:

$$\sigma_P = \frac{n}{n-1}\sum_{t=1}^{n}\frac{\left(R_{Pt}-R_{Pt}\right)^2}{n} \quad (6)$$

The above equation is for standard deviation of the fund portfolio returns over the sample period, with R_{pt} as the return portfolio p at time t, $\bar{R}_{pt}$ as the average return of the portfolio during the sample period, and *n* representing the number of return observations in the sample. Based on equation (5), the SI divides the excess return of a portfolio over the sample period by the standard deviation of the returns of that portfolio over the same period. The SI thus provides the amount of excess return a portfolio earns per unit of risk it takes (with risk being defined by σ_p). The last return measurement for our research is Jensen Alpha Index (JI), developed by Jensen (1968), to determine the size of excess returns achieved by a portfolio above (below) the fund risk adjusted return as expected in CAPM. JI can be described as:

$$JI=R_{pt}-[R_F+\beta_I(R_M-R_F)] \quad (7)$$

Next, the relationship between the return and risk variables will be estimated using the following regression equations:

$$R_i = \alpha+\beta_1(TR)+\beta_1(MR)+\beta_1(logV_1)+\beta_2(logGDP_2)+\beta_3(logCPI_3)+\beta_4(P_4)+\beta_1(Type)+\varepsilon_i \quad (8)$$

$$CAPM_i = \alpha+\beta_1(TR)+\beta_1(logV_1)+\beta_2(logGDP_2)+\beta_3(logCPI_3)+\beta_4(P_4)+\beta_1(Type)+\varepsilon_i \quad (9)$$

$$SI_i = \alpha+\beta_1(MR)+\beta_1(logV_1)+\beta_2(logGDP_2)+\beta_3(logCPI_3)+\beta_4(P_4)+\beta_1(Type)+\varepsilon_i \quad (10)$$

$$JI_i = \alpha+\beta_1(TR)+\beta_1(logV_1)+\beta_2(logGDP_2)+\beta_3(logCPI_3)+\beta_4(P_4)+\beta_1(Type)+\varepsilon_i \quad (11)$$

where :

R_i = the expected return of the i[th] company's of the i[th] year,

$CAPM_i$ = the required return of the i[th] company's of the i[th] year

SI_i = the Sharpe Index of the i[th] company's of the i[th] year

JI_i = the Jensen Index of the i[th] company's of the i[th] year

α = the constant term,

TR_i = the total risk of the i[th] company's of the i[th] year

MR_i = the market risk of the i[th] company's of the i[th] year

β = the slope or coefficient estimates of the explanatory variables,

$logV_1$ = the log volume of i[th] company's for the i[th] year

$logGDP_i$ = the log gross demostic product of the i[th] year,

$logCPI_i$ = the log consumer price index of the i[th] year,

P = the share price of ith company's for the i[th] year

Type = category of REITs, 1= Islamic; REITs, 2= Conventional REITs

To find evidence on the relationship between dependent and independent variables, the null hypothesis of the study are developed to outfit for the pooling regression model. The alternate hypothesis is stated below:

Hypothesis 1: REITs average market return has significant relationship with all the independent variables

Hypothesis 2: REITs expected return (CAPM) has significant relationship with all the independent variables

Hypothesis 3: REITs Sharpe Index (SI) has significant relationship with all the independent variables

Hypothesis 4: REITs Jensen Alpha Index (JI) has significant relationship with all the independent variables

Result and Discussion

Table 2 demonstrates the Pearson correlation analysis between independent variables for checking multicollinearity problem before regressing the data analyses. From this analysis, data regressions do not pose serious multicollinearity problems between all independent variables. Though the variable is negatively and positively correlated, it considered low. Therefore, it is not large enough to cause any concern in the regression model. Hence, the data regressions can be used to interpret the factors that impact on REITs performance.

Table 3 illustrates the result of descriptive statistics between dependent and independent variables where the REITs average return indicates the higher return achieved is 1.25, with mean return of 0.0520. The expected return using CAPM indicates a mean of 1.9245, with a maximum return of 5.47. While Sharpe Index maximum value is -0.26, with means of -1.6515, and Jensen Index maximum return is 6.75, with means of -1.8724. In terms of risks, total risks represented by standard deviations have a mean of 2.2534 with the maximum rate of 8.51. The market risk represented by beta has a maximum

Table 2. Correlation analysis for multicollinearity

		Total risk	Market risk	Price	LogGDP	LogCPI	Logvolume	Type
Total risk	Pearson Correlation	1						
	Sig. (2-tailed)							
Market risk	Pearson Correlation	.434***	1					
	Sig. (2-tailed)	.000						
Price	Pearson Correlation	-.024	.170**	1				
	Sig. (2-tailed)	.777	.044					
LogGDP	Pearson Correlation	-.087	-.087	.026	1			
	Sig. (2-tailed)	.305	.305	.760				
LogCPI	Pearson Correlation	-.030	-.256***	-.242***	.539***	1		
	Sig. (2-tailed)	.726	.002	.004	.000			
Logvolume	Pearson Correlation	-.267**	.100	.054	-.150*	-.207**	1	
	Sig. (2-tailed)	.001	.238	.524	.076	.014		
Type	Pearson Correlation	.206**	.119	-.478***	-.003	-.012	-.086	1
	Sig. (2-tailed)	.014	.161	.000	.970	.886	.311	

***. Correlation is significant at the 0.01 level (2-tailed).
**. Correlation is significant at the 0.05 level (2-tailed).
* Correlation is significant at the 0.10 level (2-tailed).

Table 3. Descriptive statistics among variables

	Minimum	Maximum	Mean	Std. Deviation
Average return	-0.58	1.25	0.0520	0.22167
Expected return(CAPM)	-6.38	5.47	1.9245	1.32421
Sharpe index	-4.68	-0.26	-1.6515	0.84723
Jensen alpha index	-5.51	6.75	-1.8724	1.38547
Total risk	0.70	8.51	2.2534	1.54253
Market risk	-0.59	3.02	0.3189	0.43079
LogGDP	5.08	5.14	5.1128	0.01716
LogCPI	2.02	2.06	2.0426	0.01271
Logvolume	3.11	6.32	4.8527	0.60820
Price	0.47	2.23	1.0300	0.30861

value of 3.02 with average rate of 0.3189. For the Gross Domestic Product (GDP), the mean is 5.1128, volume traded is 4.8527, Consumer Price Index (CPI) is 2.0426, and closing price of REITs is 1.0300. From here, it shows that when different approaches applied in calculating the expected return and risk it will show that different factors might affect in determining REITs return and risk.

Based on the regression analysis, the estimated regression equation can be written as follow:

$$R_i = 13.341\text{-}0.0061(TR) + 0.041(SR) - 3.289(\log GDP_1) + 1.628(logCPI_2) - 0.020(logV_3) + 0.216(P_4) + 0.069(Type) + \varepsilon_i$$

$$CAPM_i = \text{-}1.750\text{-}0.335\text{i}(TR) + 2.5601(logGDP_1)\text{-}2.46(logCPI_2)\text{-} 0.444(logV_3)\text{-}0.835(P_4)\text{-} 0.4011(Type)+\varepsilon_i$$

$$SI_i = 56.10+0.691(SR) - 21.1451(GDP_1) + 25.363(logCPI_2) - 0.491(logV_3) + 0.260(P_4) + 0.2551(Type) + \varepsilon_i$$

$$JI_i = 15.155 + 0.3351(TR) - 5.7661(logGDP_i) + 3.759(logCPI_2) + 0.431(logV_3) + 1.062(P_4) + 0.476(Type) + \varepsilon_i$$

Table 4 presents the results from regression analysis. Overall, the inclusion of seven independent variables, not all the variable produce significant results but based on the *F* statistic, the entire four models are efficient for prediction. The adjusted R squared values range from a high of 0.363 for model 3 to a low of 0.111 for Model 1. By examining the t-statistics for Model 1 (Average Return), the estimated regression shows the REITs price and logGDP are statistically significant at the 1% level (as p-value < 0.01) and 5% level, respectively. The REITs price has a positive effect on REITs return, as the estimated coefficient is positive. In other words, an increase in REITs price would increase REITs average return. That is, if REITs price increases by one unit, then the average return would increase by 0.216 units, and vice versa. However, it is negatively related with logGDP. Study also found that the average

Table 4. Regression analysis of return and all independent variables

Variables	Average Return (Model 1)	CAPM (Model 2)	Sharpe Index (Model 3)	Jensen Index (Model 4)
Total risk	-0.006 (-0.433)	-0.335 (-4.713)***	excluded	0.335 (4.506)***
Market risk	0.041 (0.813)	excluded	0.691 (4.774)***	excluded
LogGDP	-3.298 (-2.534)**	2.560 (0.350)	-21.145 (-5.097)***	-5.766 (-0.754)
LogCPI	1.628 (0.873)	-2.416 -0.233)	25.363 (4.240)***	3.759 (0.348)
Logvolume	-0.020 (-0.603)	-0.444 (-2.055)**	-0.491 (-4.963)***	0.431 (2.295)**
REITs price	0.216 (2.965)***	-0.835 (-2.055)**	0.260 (1.105)	1.062 (2.504)**
Fundtype	0.069 (1.351)	-0.401 (-1.397)	0.255 (1.557)	0.476 (1.587)
R^2	0.111	0.199	0.363	0.203
Adjusted R^2	0.064	0.163	0.335	0.168
F statistic	2.375**	5.548***	12.732***	5.697***

Figures in parenthesis denote t-statistics
* denotes rejection of the null hypothesis at the 10% level of significance
** denotes rejection of the null hypothesis at the 5 % level of significance
*** denotes rejection of the null hypothesis at the 1 % level of significance

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return does not influenced by total risk and market risk, since it was not statistically significant, indicating that the average return of REITs cannot be explained by any changes in total risk and market risk. This finding is similar to the study done by Chen and Peiser (1999). This is relevant to the argument against average return that it does not take into account the risk taken to achieve certain return. Furthermore, only 11.1% of the variation in REITs average return is explained by all the independent variable. The *F* statistics is substantiated at the 5% significant level, implying that the null hypothesis for Model 1 can be rejected. Thus, the estimated regression Model 1 is efficient for prediction.

For Model 2, expected return using CAPM model, the market risk was excluded from the model since beta of the firm is required in calculating expected return. Based on the results, the estimated regression is negatively significant with total risks (1% level) and logCPI with REITS price both at 5% level. This indicates that and increase in expected return will reduce the total risk by 0.335 unit, logCPI by 2.516 unit, and price by 0.835 unit. The R squared indicates only 19.9% variation in REITs expected return can be explained all independent variables. However, the *F* statistics is substantiated at the 5% significant level indicating that the estimated regression Model 2 is efficient for prediction, and the null hypothesis for Model 2 can be rejected.

For Model 3 of Sharpe Index (SI), the total risk which is represented by the standard deviation is excluded from the variable, since standard deviation is required in calculating the SI. The result shows that, SI is positively significant with market risk and logCPI at 1% level, indicating that an increase in SI can be explained by an increase in systematic risk by 0.691 unit and logCPI by 25.363 unit. As the result for logGDP and logvolume is negatively significant at 1% level, while other variable is not significant. The R squared indicates 36.3% variation of Sharpe Index can be explained by the independents variable. The *F* statistics is substantiated at the 5% significant level, implying that the null hypothesis for Model 3 can be rejected, thus, the estimated regression Model 3 is efficient for prediction.

In terms of determining Jensen Index (JI) for Model 4, the market risk is excluded from independent variable since beta is required in calculating the JI. The result indicates a positive significant relation between JI with total risk at 1% level and with logvolume and price at both at 5% level. This indicates that a unit increase in JI can be explained by an increase in total risk by 0.335 unit, logvolume by 0.431 unit and price by 1.062 unit and vice versa. Other independent variables are not significant in explaining any changes in JI. The *F* statistics is substantiated at the 1% significant level, implying that the null hypothesis for Model 4 can be rejected. Thus, the estimated regression Model 4 is efficient for prediction, with the R squared indicate 20.3% variation of JI can be explained by the independents variable.

Conclusion

This study attempts to see whether REITs return are affected by the risks represent by total risk, market risks, volume traded, GDP, CPI, REITs price any type of funds. From the findings that based on the regression result, it revealed that factors that should considered by the investors in determining REITs returns are total risks, market risks, REITs price, and GDP. This finding is consistent with McCue and Kling (1994) where it indicates that macroeconomics variables are able to explain the variation in REITs returns. The variable for types shows a consistent insignificant result across the four model indicating that neither

the funds is categorized Islamic REITs nor Conventional REITs it will not influence the return of REITs represented by average return, expected return, Sharpe and Jensen Index. As a recommendation, because of REITs market is now growing and there is an increasing impetus in the wake of interest from various parties includes issuers and investors. So, REITs have confirmed their viability as an alternative means to mobilize medium to long-term savings and investments from a huge investor base. Hopefully this study will bring benefit to the public listed companies and shareholders in obtaining the key factors in determining the REITs risk and return. As such, with the increasing number of REITs in Bursa Malaysia recently, more opportunities for further research on REITs risks and return trade-off is expected which may lead to better investment decisions. It was recommended that future researches can be aimed at others proxies that can capture the REITs risk and return effect in a better manner which might provide a strong relationship between the variables and help to uncover the better REITs performance in Malaysia perspectives. Thus this study is left for future to be further explored.

References

Chan, K.C., Hendershott, P.H., and Sanders, A.B. (1990), Risk and Return on Real Estate: Evidence from Equity REITs, *The Journal of American Real Estate and Urban Economics Association*, 18, 431-452.

Chen, J. and Peiser, R. (1999), The Risk and Return Characteristics of REITs, *Real Estate Finance*, 16(1), 61–8.

Dusuki, A.W. (2007), Practice and Prospect of Islamic Real Estate Investment Trusts (S-REITs) in Malaysian Islamic Capital Market, *Paper Presented at The International Conference on Islamic Capital Markets*, Jakarta.

Henderson Global Investors Singapore (2006), About Real Estate Investment Trusts (REITs), Retrieved, From http://www.fundsupermart.com/main/articleFiles/webarticles/2109/SG/Property%20Newsletter%20-%20Edition%209%20(151206).pdf

Jensen, M. (1968), The Performance of Mutual Funds in the Period 1945-1964, *Journal of Finance,* 23, 389-416.

Kok, K.K. and Khoo, K.L. (1995), Performance of Property Trusts in the Kuala Lumpur Stock Exchange, *Capital Markets Review*, 3, 1-19.

Mccue, T.E and Kling, J.L. (1994), Real Estate Returns and the Macroeconomy: Some Empirical Data Evidence from Real Estate Investment Trust Data, *Journal of Real Estate Research*, 9, 277-89.

Mohd Ali, H. (2006)**,** Size Effect on the Performance of Listed Real Estate Companies, *International Real Estate Research Symposium* (IRERS), PWTC, Kuala Lumpur, Malaysia.

Newell, G., Ting, H.K., and Acheampong, P. (2002), Listed Property Trusts in Malaysia, *Journal of Real Estate Literature*, 10, 109-118.

Reilly, F.K. (1989), *Investment Analysis and Portfolio Management*, 3rd ed., The Dryden Press.

Rozali, M.B., Hamzah, A.H., and Tahir, I. (2007), Empirical Investigation on the Performance of the Malaysian Real Estate Investment Trusts in Pre-Crisis, During Crisis and Post-Crisis Period, *International Journal of Economics and Finance,* 2(2), 2010.

Securities Commission (2005), *Guidelines on Real Estate Investment Trusts*, Kuala Lumpur: Securities Commission Malaysia.

Securities Commission (2005), *Annual Report*.

Shariff, M.I. (2007), *Islamic REITs–Legal and Legislative Issues in I-REITs,* Paper presented in Islamic Financial Markets Conference and Specialised Workshops, Karachi, Pakistan.

Sharpe, W.F. (1966), Mutual Fund Performance, *Journal of Business*, 39(1), 119-138.

Simpson, M.W., Ramchander, S., and Webb, J.R (2007), The Asymmetric Response of Equity REIT Returns To Inflation, *The Journal of Real Estate Finance and Economics*, 34(4).

The Star (2007), REITs – *A Liquid Proxy to Physical Real Estate***,** February 5, retrieved from http://mreit.blogspot.com/2007/02/REITs-liquid-proxy-to-physical-real.html