REAL ESTATE ALLOCATION DECISION OF MALAYSIAN REAL ESTATE INVESTMENT TRUSTS

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ABSTRACT

Many studies on Malaysian REITs (Real Estate Investment Trust) have shown the ability to provide diversification benefits in the investment portfolio. The strong support from the Malaysian government such as the relaxation of taxable income and other incentives are still inadequate to convince the institutional investors to include REITs in their investment portfolio. The unique characteristics of Malaysian REITs in term of asset allocation caused it difficult to be evaluated by the investors. A few factors such as type of property, location, size of firm and capital structure of REITs had been identified as real estate allocation decision (READ) to influence REITs performance. While Malaysian REITs' performance are based on expected return (ER), beta coefficient (β) and dividend payout (Div). Multiple regression analysis (MRA) is utilized to assess the significant level of influence of READ on performance. The study objective is achieved with mixed results. It showed that only Div had significant influence (R^2 value: 64%), while ER and β are insignificant (both R^2 value less than 6%). This indicated that investors seek a long term goal in REITs investment and stable distribution than price appreciation. This study suggests an outline of READ for Malaysian REITs. The outline of READ then was assessed through the past performances of Malaysian REITs to rationalize the characteristic, strength and weakness of influencing variables.

Field of Research: *REITs, dividend, diversification, property type, location, size, cost of capital*

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1.0 Introduction

The Malaysian REITs started in 1989 through the introduction of the Malaysia Listed Property Trust (LPTs). The Malaysian LPTs faced challenges such as weak perception and low demand upon REITs by institutional investors that restrained LPTs development. Moreover, less number of LPTs were traded in the Bursa Malaysia (BM) as they were unattractive, smaller in size and offer less diversification benefit to the investors. The development of Malaysian LPTs slowed down for a while until the introduction of REITs Guideline by Malaysian Securities Commission (SC) in 2005. Hence, from 2006 until 2007 there

were thirteen REITs listed in BM. As up to now, there have been 15 REITs traded in BM and few more are being planned to get listed.

However , there are a few studies on Malaysian REITs' performance which argued that Malaysian REITs correspond to the age and size of REITs (Lee and Ting, 2009; Abdul Jalil and Hishamuddin, 2008; Lee *et al.,* 2005; Newell *et al.,* 2002; and Sing *et al.,* 2002). Therefore, Malaysian REITs received inadequate response from institutional investors (Lee *et al.,* 2005; and Newell *et al.,* 2002). A source from the Malaysian Business in 2008 reported that on average, the size of Malaysian REITs are above RM483.3 million compared to the average REIT size of RM4.2 billion for regional counterparts like Singapore and Australia. This added to the problem of unattractiveness of Malaysian REITs performance which disappoint institutional investors to consider REITs in their portfolio (Newell, 2008; Rohaya and Hishamuddin, 2008; Lee *et al.,* 2006).

In spite of the fact, the Malaysian REITs proved to provide diversification benefits through REITs inclusion in the portfolio (Lee and Ting, 2009; and Abdul Jalil and Hishamuddin, 2008). REITs have the ability to provide reliable income derived from tenant on a longer lease period. Besides that the tax rule which required REITs to distribute at least 95 percent of REITs' taxable income had resulted REITs paid dividend yield higher than average companies throughout all market condition (Chan *et al.,* 2003).But this tax rule limited REITs funding ability for expansion. Consequently, investors take in account the REITs' capital structure before made any investment decision. REITs can raise fund either by adopting debt use or issuance of new share, but both of these method had implication to REITs.

Beside the factors of size, capital structure and participation of major institutional investor on REITs, the difference in investor buying patterns and perception also influenced the REITs' performance (Newell *et al.,* 2002). The unique characteristic that difference of asset allocation such as diversification in terms of property type and location of REITs building in REITs' portfolio had resulted Malaysian REITs being difficult to evaluate by the investors (Rohaya and Hishamuddin, 2008).

Therefore REITs need to take into account factors such as REITs' property type, location of buildings, size and capital structure to construct their real estate allocation decision (READ) and to ensure their REITs can meet the investors' expectation. Since the development of REITs in Malaysia is new and there is lack of studies on these factors affecting READ on Malaysian REITs, thus an examination on the relationship of READ and Malaysian REITs' performance warrants special attention.

This justification was made based on the previous studies on United States (US) REITs development. The US REITs started in 1960s and underwent a cyclical REITs performance, evidence that factor of READ influence performance (Chan *et al.,* 2003 and Zietz *et al.,* 2003). Thus, READ become crucial in providing better investment opportunity with the participation of institutional investors in REITs may provide synergy to REITs in both price appreciation and distribution aspects. These signals to the market, the worth of that particular REIT, since institutional investors function as a price setter.

This study aimed to analyze the existence of a relationship between real estate allocation decision (READ) and Malaysian REITs' performance. Does the difference in term of property type, location, size of firm and financing policy influence the REITs' performance? Which of these variables is the suitable one? What is combination of these variables that able to contribute for higher performance. The influence of READ in Malaysian REITs' performance shall benefit for i) REITs companies for them to design the READ of their REITs; ii) institutional investor for them to identify the level of risk on REITs'

investment and decision making on REITs investment; iii) bank and financial institution for evaluating the REITs' debt application based on their READ; and iv) the government to evaluate the REITs' development in the country via monetary policy.

The scope of this study only comprises a three- year- study from 2006 until 2008. The Malaysian REITs included in this study were AHP, AHP2, AmFirst REIT, Al-Hadharah Boustead REIT, AmanahRaya REIT, Axis REIT, Atrium REIT, Hektar REIT, Quill Capita REIT, Star REIT, Tower REIT and UOA REIT. The data collected for the study depended on their listing on BM. The financial performances of Malaysian REITs are mean variance analysis (expected return), systematic risk (beta) and dividend distribution yearly. Meanwhile, the READ in this context are the property type differences and diversification in term of property type holding, evaluation on economic location, firm size in terms of total net asset value and market cap value and capital structure based on cost of capital.

2.0 Related Literature Review

The development of REITs in US underwent significant cyclical performance and structure changes (Morri and Cristanziani, 2009; Boudry *et al.,* 2007; Ott *et al.,* 2005; Chan *et al.,* 2003; Zietz *et al.,* 2003; and Ambrose and Linneman, 2001).Therefore understanding of the weaknesses and strengths of US REITs industry is essential (Chan *et al.,* 2003; and Zietz *et al.,* 2003). The lesson learnt from US REITs experience helped to recognize the function of READ toward performance. Other countries which intended to introduce REIT may either adopt the exact practice applied in the US REITs or change it to tailor to the local needs (Campbell and Sirmans, 2002).

The REITs are known to provide a wider diversification opportunity for the investor, provide greater liquidity, feasibility of operation, and the ability to diversify at any level investment (Boudry *et al.,* 2007; Ott *et al.,* 2005; Chan *et al.,* 2003; Zietz *et al.,* 2003; Ambrose and Linneman, 2001; and Ting, 1999). However, in Malaysia, REITs received inadequate responses from both local and non-resident investors. Based on the trend analysis of Malaysian REITs price quotes in BM, there was evidence that Malaysian REITs was underperforming (Abdul Jalil and Hishamuddin, 2008). This was due to several factors of READ in Malaysian REITs which are unique in their characteristics. Thus, through the above ramifications, this study has identified that at least four factors of READ which influence Malaysian REITs' performance.

2.1   Property type factor

The benefits of using the diversification strategy to reduce risk were well-understood but the empirical results on these issues were mixed. Before the early 1990s, US REITs maintained steady income streams under different market condition and REITs portfolios diversified in both location and property type (Chan *et al.,* 2003). Differences in property type made REITs being able to provide a wider diversification opportunity. This is because the differences in property type caused a different effect upon net asset value of underlying REITs. For example, retail REITs trade at a significant premium on the net asset value than the average REITs and warehouse /industrial REITs trade at discount (Capozza and Lee, 1995).

While study on hotel REITs, retail REITs, office REITs and residential REITs had been discussed as the following. Factors such as capital structure, location and economic condition and qualitative factor such as operational management of hotel were recognized as important influences in the hotel decision

making (Newell and Seabrook, 2006). The higher revenue growth, the higher per available room (REVPAR) growth and higher occupancy-rate growth has affected the performance of REITs hotel (Brady and Conlin, 2004). The hotel REITs also have the highest market risk as compared to other REITs sectors yet its risk-adjusted return is similar to the overall market (Kim *et al.,* 2002).

Meanwhile Nijkamp *et al.,* (2002) studied ten factors of the rental level in retails market. Their study found that a combination factors contributed to this rental income of retail increase such as income-related factor and population-related factor. Logically as the population increases, social security beneficiary increases, unemployment falls and personal income increases which explains optimal retail rent. Another in a study by Byrne and Lee (2009), the finding indicated that retail investment correlated more strongly with the UK urban hierarchy which focused on urban areas with high populations and large population densities. Moreover Gyourko and Nelling (1996) study on systematic risk on the property types REITs own suggested industrial and warehouse property specialized REIT had a beta of 50 percent less than retail property specialized REITs. Their study also found no evidence that diversification across property type or geographic region was related to a market based measure of diversification the R^2 from a simple market model regression.

In meantime, a study on office space, showed that the office rent in metro area declined due to overbuilding in the 1980s much more than the decline of office rental in suburban market (Brueggeman, 1996). Suburban office market attracts more demand due to factors such as better quality of transportation, higher suburban school quality, less congestion and crime, lower rent offer, improvement in technology and communication. Moreover, the economic situation induced the performance on the investment of office market (Shilling, 1997). This is backed by evidence from the over-building of office space situation which took place during the 1980s as US real estate development did aggressively. The residential REITs are more leveraged with long term debt and earning less volatility, due to the nature of residential that have specific features and have high collateral value that are able to provide wide availability of different financing sources (Morri and Cristanzaini, 2009).

In meantime, the emergence of non-traditional real estate sectors REITs such as healthcare REITs, self storage REITs and specialty REITs increase diversification benefit within REITs sector portfolio compared to the traditional REITs sector (Newell and Peng, 2006). They also found that there were more diversification opportunities from within the non-traditional real estate sector REITs than from within traditional sector REITs. Prior to that, (Newell and Peng, 2005) highlighted that property sector such as self-storage, healthcare, retirement facilities and leisure/entertainment property have increased in Australian listed property trust (LPTs).

However, there are mixed arguments on the potential of property type difference and performance. The property type difference brought about different performance to REITs suitable to provide diversification benefit on property portfolio (Myer and Webb, 2000). Meanwhile (Capozza and Seguin, 1999; and Morri and Christian, 2008) argued that diversification in terms of property type can possibly cause disadvantages as REITs need to employ sufficient experts to supervise different property type with different nature and risk. This resulted in an adverse value affected by REITs. Therefore, this study assesses property type concentration to evaluate the benefit of focus on a particular property type.

Since different property type had difference performance depending on the nature of the property, a study on property type specializing on healthcare found that there was a relationship between the construction of hospital, rising of the vacancy rate of hospital and nursing home beds with the excess

demand of medical services and the excess supply by hospital and nursing providers (Anikeeff *et al.,* 2003). Besides that, the REITs that focus their investment activities within a single property type sector enjoy large liquidity and ease of valuation (Danielsen and Harrison, 2007).

Focusing on a particular type and location will produce a specialized strategy for REITs and avoids increased management cost. However, the disadvantages of having specialized strategy is that REITs have less risk reduction, not offering the investor to have better property diversity and multiple geographic location choices. Besides that, REITs also have a greater exposure to larger fluctuation in income stream. Therefore, investors can either invest in REITs companies which already have diversified property portfolio or to pick up REITs companies focused on a specific property type and establish their own portfolio. This can be done by adapting the Benefield (2006) study which classified property type into specialized and diversified according to percentage of a particular property type holding. Benefield (2006) categorized property into (i) specializes when REITs hold more than 75 percent concentration of the total asset on one particular property type and (ii) diversifies when REITs hold less than 75 percent on one particular property type.

2.2   Location factor

It is important in property portfolio selection to consider the location of the properties through four elements of sociological, technological, economical and political influence (STEP) (Hamid, 2006). Moreover, REITs are highly dependent on the income generated from those properties, strategic economic location is essential to achieve higher rental income and higher occupancy rate. Those properties located in Central Business Districts (CBD) such as in the golden triangle Kuala Lumpur has been focused by the investors and REITs managers. Surprisingly, single tenant properties in nature owned by REITs such as healthcare building, or warehouse as well as education building were also favorable although not located in the high economic activities area. This is because REITs which offer single tenant only needs to cater to specific tenant requirement, for example, education building and warehouse, medium economic location can produce sufficient building yield for the REITs.

Interestingly, the US REITs development reported properties that concern tourism, leisure/ theme park, resorts as well as cemetery are preferred by the investors. Consequently, in order to assess the location, this study chooses to evaluate location of properties through economic location. The studies on economic location influence were found by Anderson *et al*., (2001) and Wilhelmsson (2009). In which economic location by employment structure, economic growth pattern, space rent (Anderson *et al*., 2001) and economic location by prices indexes based on economic activities (Wilhelmsson, 2009).

2.3   Size of firm factor

The size of a REITs firm is essential in investment decision. The Malaysian LPTs are small in size and unable to provide more choice for investor to consider LPTs in their portfolio (Hishamudddin, 2006 and Lee *et al.,* 2005). The LPTs' with big capitalization showed superior performance with higher return and lower risk in the allocation with mixed asset (Hishamudddin, 2006). Besides that, larger REITs were owned by many financial institutions (Below *et al.,* 2000a). Their further investigation found that size

was a dominant factor among institutional investor preferences which has driven REITs growth in the US since 1992 (Below *et al.,* 2000b).

Size is evaluated through total net asset value (TNAV), market capitalization (Mkt Cap) and net asset value per unit (NAV). The TNAV is based on prior studies (Miller and Springer, 2007; Lee *et al.,* 2005; Ambrose and Linneman, 2001; Yang, 2001; Capozza and Seguin, 1998; and Linneman, 1997). Meanwhile the Mkt Cap explains the real value of REITs (Ambrose and Linneman, 2001; Below *et al.,* 2000a, b; Myers and Webb, 2000; Bers and Springer, 1998; Capozza and Lee, 1995; and Cannon and Vogt, 1994). The NAV represents the book value per unit (Morri and Cristanziani, 2009; Morri and Beretta, 2008; Ghosh and Sirman, 2006; and Capozza and Lee, 1995).

2.4   Capital structure

The unique characteristic of organization structure and tax regulation, has limited the REITs availability of internal funding. Without further expansion via properties acquisition, REITs will not attract the investor and existing shareholders who are expecting growth distribution over the coming years (Chan *et al.,* 2003). However, either option of debt financing or new issuance of new share is also a disadvantage. Adopting debt used, resulted in REITs being unable to enjoy tax shelter compare to non-REITs companies and suffered higher interest if the yields from the properties acquired is lesser. Ooi *et al.,* (2008), suggested that target leverage depends on market timing in the financing decision of REITs as to take advantage of capital market conditions. Their study also found that in the long run, most REITs do move their capital structure towards the target debt level.

Meanwhile new issuance of share leads to an increase in the number of shares in circulation that depressed the existing shareholders yield. Consequently, the existing shareholder will exit and caused REITs' share price became diluted (Chan *et al.,* 2003). Besides that Boudry *et al*., (2007), found that REITs was more likely to issue equity when its price to net asset value (NAV) ratio or C_3 is higher which indicated that REITs issued equity to public market when the cost of equity (K_e) was lower in the public market than the private market. They also noted that REITs followed the trade-off theory of capital structure.

Therefore REITs need to understand the influence of capital structure as to achieve the optimal cost of capital which benefits all parties (Erickson and Fredman, 1988). The difference between the cost of debt (K_d) and cost of equity (K_e) on REITs capital structure depended on the greater the sensitivity of the *WACC* to alternative weighting scheme and the investors' perception of the risk of the REITs as it takes on more debt. Other literatures on REITs' capital structure debated the advantages and disadvantages of cost of debt (K_d), cost of equity (K_e) and weighted-to-average cost of capital *(WACC)* of the REITs to tolerate (Ambrose and Linneman, 2001; Brown and Riddiough, 2003, and Campbell *et al.,* 2003)

2.5   REITs performance

Expected return is the return from an asset that investors anticipated that they will earn over some period of time. It is a predicted return and it may or may not occur. It can be concluded that an investor is willing to purchase a particular asset if the expected return is adequate and he must understand that his expectation may not materialized. Expected returns from the individual securities carry some degree

of risk. Risk is defined as the standard deviation around the expected return. More dispersion or variability about a security's expected return meant that a security was riskier than one with less dispersion. Therefore the evaluation for a shorter investment goal used expected return (Breidenbach *et al.,* 2006; Allen *et al,.* 2000; and Redman and Manakyan, 1995).

Meanwhile, systematic risk of REITs has given an impact on REITs performance (Breidenbach *et al*., 2006; Litt *et al.,* 1999; and Gyourko and Nelling, 1996). The examination of systematic risk would help the study to identify significant factor to influence the systematic risk or beta. If the beta value is less than 1.00, it means that the security is less volatile and less responsive to changing return in the market.

Other than that, Chan *et al.* (2003), noted that REIT's dividend policy is not constrained by the payout ratio set by tax regulations. Surprisingly, REITs pay out more significant dividends than the requirement of the regulation. Any increase or decrease in REITs dividend payment is a signal of information about its future earning to the stock market appreciation (Ghosh and Sirman, 2006). Therefore, high payout ratio is used to enable the investor in the stock market to understand the REITs in depth. Besides that, Zietz *et al*., (2003), noted that REITs with higher cash flow volatility tend to have lower dividend payout ratios. This seems to be parallel with the information based on explaining the dividend and its stock prices.

3.0 Methodology

A three-year data from 2006 until 2008 were collected through secondary data available from daily price quoted and the REITs annual report published from BM. Since this study concentrates on REITs performance in Malaysia, variables selected to represent dependent variable are based on the literature review on US REITs industry as well as discussed the adaptation of REITs in European countries. The weakness and strength of a few factors that influenced the performance and development of REITs have been identified (Campbell *et al*., 2003: Chan *et al.,* 2003; Anderson *et al.,* 2001 and Campbell *et al.,* 2000; Gyourko and Nelling, 1996; and Cappozza and Lee, 1995). The REITs' READ is identified as dependent variables that influence the performance of Malaysian REITs. Meanwhile the performance of REITs is independent variables.

3.1   Dependent Variables

The financial performance of REITs is categorized into three variables that are the expected return monthly, systematic risk (beta) monthly and dividend payout yearly. Expected return monthly has been chosen to evaluate the performance of a short term investment goal. Meanwhile, the systematic risk or monthly beta was chosen to evaluate the risk of Malaysian REITs as one of the investment instruments available in Malaysian financial market. The dividend payout yearly has been selected as the performance evaluation to measure the long term investment goal. REITs were able to provide higher and stable dividend distribution which was supported by REITs unique organization structure and tax regulation governed.

3.2   Independent Variables

The independent variables which were the READ factors were quantitative in nature and collected through secondary data available from BM daily prices quotes and REITs annual report. The READ factors were (i) property type; (ii) location; (iii) size of firm; and (iv) financing policy. First, the different property types resulted in a different magnitude of risk on the properties. The nature of properties and capacity of income generated was different between each type and life cycles of each property. The differences in property type caused different effect upon net asset value of underlying REITs. The property type was also viewed according to diversification of property type and this study adopted categorization of concentration of property made by Benefield (2006) which categorized the property type into specializes and diversifies property type.

Second, location of properties was identified as being able to influence the performance of REITs. Economic location by employment structure, economic growth pattern, space rent (Anderson *et al.*, 2001) and economic location by prices indexes based on economic activities (Wilhelmsson, 2009). Third, investor evaluates the size of firm upon making the decision to invest in a particular REIT. Therefore, to evaluate the size of REITs companies in Malaysia, TNAV, Mkt Cap and NAV have been used in this study. Fourth, the Theory of Modigliani and Miller (1958) that was used in this study were (i) cost of equity (K_e) if the REITs further issued new REITs unit; (ii) cost of debt (K_d) if REITs take up long term debt and (iii) weighted-to-average cost of capital (WACC) of the REITs to bear.

3.3   The Research Design and Data Collection

The following is Figure 1, describes on specification of study, data collection and process in order to derive the finding of this study. The equations I, II and III were designed only to evaluate the significant relationship of READ (independent variables) and Malaysian REITs' performance (dependent variables).

|			
	Size of firm ; C_1, C_2, C_3	← Annual Report	C_2 & C_3: Calculate use formula 5 & 6
	Financing policy ; K_e, K_d, WACC	← Annual Report	K_e, K_d, WACC : Calculate use formula 7, 8 &9
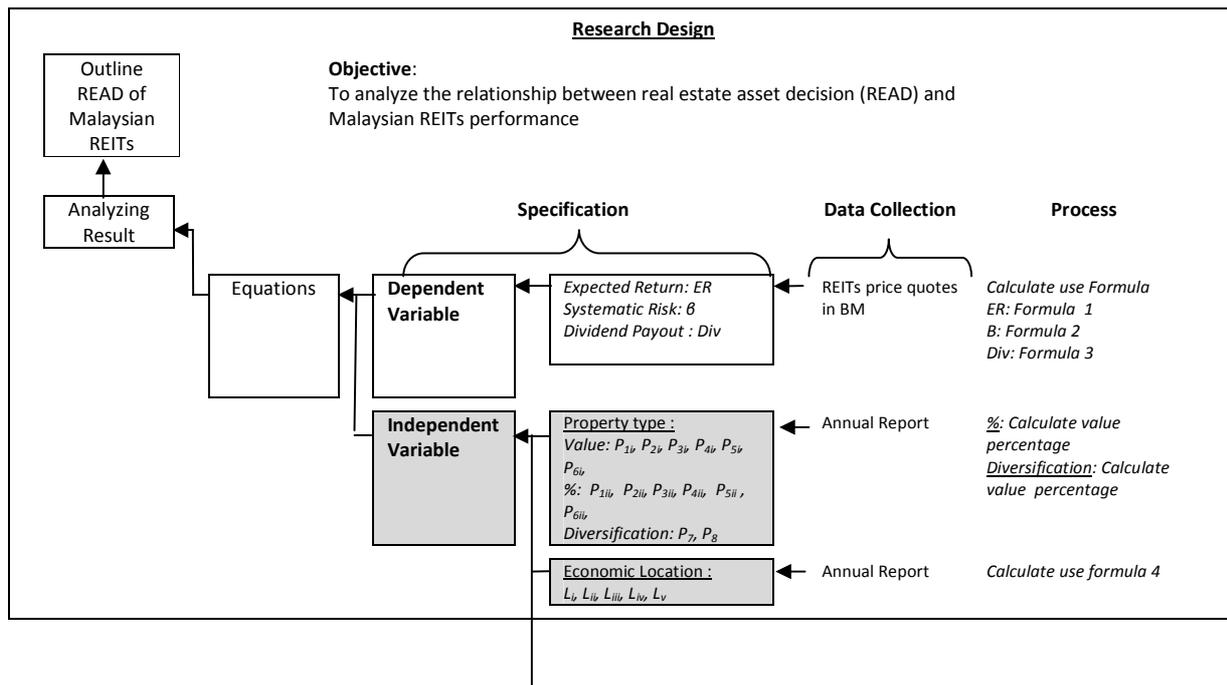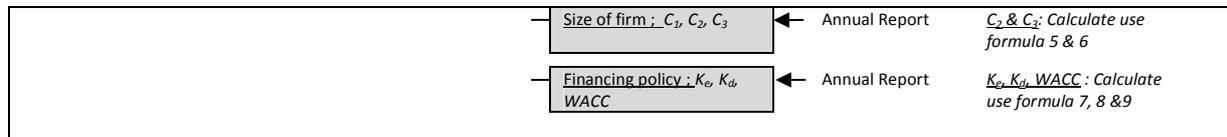
Figure 1: The Details of Research Design

Equation I

The relationship between the financial performance of expected return monthly and property allocation strategy of (i) property type (ii) geographical location;(iii) size of firm and (iv) financing policy were as following formula:-

$$
\begin{aligned}
ER_1 = \ &a + bP_{1i} + cP_{2i} + dP_{3i} + eP_{4i} + fP_{5i} + \text{----- \textbf{Formula 1}}\\
&gP_{6i} + hP_{1ii} + iP_{2ii} + jP_{3ii} + kP_{4ii} + lP_{5ii} +\\
&mP_{6ii} + nP_7 + oP_8 + pL_i + qL_{ii} + rL_{iii} +\\
&sL_{iv} + tL_v + uC_1 + vC_2 + wC_3 + xK_e +\\
&yK_d + zWACC + \varepsilon
\end{aligned}
$$

There were as many as 26 variables included in equation I, which consist of one dependent variable that is expected return monthly-Evaluation 1 (ER_1), constant (a), 25 independent variables (14 of property type, 5 of location, 3 of size of firm; and 3 of financing policy) and error term (ε).

Equation II

The relationship between the financial performance of Systematic risk or Beta monthly and property allocation strategy of (i) property type (ii) geographical location;(iii) size of firm and (iv) financing policy were as following formula:-

$$
\begin{aligned}
\beta_1 = \ &a + bP_{1i} + cP_{2i} + dP_{3i} + eP_{4i} + fP_{5i} + \text{----- \textbf{Formula 2}}\\
&gP_{6i} + hP_{1ii} + iP_{2ii} + jP_{3ii} + kP_{4ii} + lP_{5ii} +\\
&mP_{6ii} + nP_7 + oP_8 + pL_i + qL_{ii} + rL_{iii} +\\
&sL_{iv} + tL_v + uC_1 + vC_2 + wC_3 + xK_e +\\
&yK_d + zWACC + \varepsilon
\end{aligned}
$$

There were as many as 26 variables included in equation II, which consist of one dependent variable that is systematic risk or beta monthly-Evaluation 1 (β_1), constant (a), 25 independent variables (14 of property type, 5 of location, 3 of size of firm; and 3 of financing policy) and error term (ε).

Equation III

The relationship between the financial performance of Dividend distribution yearly and property allocation strategy of (i) property type (ii) geographical location;(iii) size of firm and (iv) financing policy were as following formula:-

$$
\begin{aligned}
Div_1 \quad = \quad & a & + & \quad bP_{1i} & + & \quad cP_{2i} & + & \quad dP_{3i} & + & \quad eP_{4i} & + & \quad fP_{5i} & + & \quad \text{----- \textbf{Formula 3}} \\
& gP_{6i} & + & \quad hP_{1ii} & + & \quad iP_{2ii} & + & \quad jP_{3ii} & + & \quad kP_{4ii} & + & \quad lP_{5ii} & + & \\
& mP_{6ii} & + & \quad nP_7 & + & \quad oP_8 & + & \quad pL_i & + & \quad qL_{ii} & + & \quad rL_{iii} & + & \\
& sL_{iv} & + & \quad tL_v & + & \quad uC_1 & + & \quad vC_2 & + & \quad wC_3 & + & \quad xK_e & + & \\
& yK_d & + & \quad zWACC & + & \quad \varepsilon
\end{aligned}
$$

There were as many as 26 variables included in equation III, which consist of one dependent variable that is dividend distribution yearly-Evaluation 1 (Div_1), constant *(a),* 25 independent variables (14 of property type, 5 of location, 3 of size of firm; and 3 of financing policy) and error term (**ε)**.

The dependent variables were quantitative data in nature. As stated earlier, the performance of REITs were expected return monthly, systematic risk (beta) monthly and dividend payout yearly. The information on expected return monthly and systematic risk (beta) monthly were gathered through published data by BM, which were in the form of daily price quotes of the REITs counters. Market return used to compute beta values were gathered through daily price quotes of KLCI FBM index. The raw data were collected for a 3 year period beginning 1st January 2006 until 31st December 2008. The data were then computed for value of expected return monthly (ER) and beta monthly (β) through the Formula 1 and 2 above. Meanwhile, the information of dividend payout yearly (Div) were computed using Formula 3 from information on dividend distribution published in the annual report of REITs company and announcement made by REITs company in Bursa Malaysia. The formula for calculation of the expected return monthly is as follows:-

$$ E(R) = \frac{\Pr_n - \Pr_{n-1}}{\Pr_{n-1}} \text{X100\%} \qquad \text{---------------- \textbf{\textit{Formula 4}}} $$

where;

   $E(R)$ = Expected return monthly
   Pr_n = Daily price quotes at the beginning of the month
   Pr_{n-1} = Daily prices quotes at the beginning of the month before

The formula for calculation of the systematic risk or beta monthly *(β)* is as follows:-

$$ \beta_s = \frac{n\sum xy - \left(\sum x\right)\left(\sum y\right)}{n\sum x^2 - \left(\sum x\right)^2} \qquad \text{--------------- \textbf{\textit{Formula 5}}} $$

where;

β_s	= the security's beta (systematic) risk
n	= number of observation
x	= the market return
y	= the stock required return
Σx	= sum of market return
Σy	= sum of stock return

The formula for calculation of the dividend payout yearly *(Div)* is as follow:-

$$DivPayout = \frac{DPS}{EPS}$$ -------------- **Formula 6**

where;

DivPayout	= *dividend payout ratio*
DPS	= *dividend per share*
EPS	= *earnings per share*

The independent variables were recognized in four strategies which were (i) property type strategy; (ii) location strategy; (iii) size of firm strategy; and (iv) financing policy strategy. Data collection on property type was the information on property held in REITs company portfolio collected from annual report of REITs. Therefore, the information of valuation according to property types *(P₁)* were gathered directly from the annual reports. Property type were further categorized as office space *(P₁ᵢ)*, commercial mall *(P₁ᵢᵢ)*, hotel/ rental apartment *(P₁ᵢᵢᵢ)*, industrial building *(P₁ᵢᵥ)*, retail *(P₁ᵥ)* and specialized landed property *(P₁ᵥᵢ)*.

The information on valuation of property held were then manipulated to make out the information on how much percentage the REITs company held in one particular property type over the total of its property portfolio *(P₂)*. The percentage holding according to property type were also further categorized as office space *(P₂ᵢ)*, commercial mall *(P₂ᵢᵢ)*, hotel/ rental apartment *(P₂ᵢᵢᵢ)*, industrial building *(P₂ᵢᵥ)*, retail *(P₂ᵥ)* and specialized landed property*(P₂ᵥᵢ)*. The adoption of Benefield's (2006) study which categorized the property type in its strength of diversification that diversified property type if held less than 75 percent on one particular property type and specialized property type if held more than 75 percent on one particular property type. Therefore, this study classifies the diversified *(P₇)* and specialized *(P₈)* property type based on the available information of value of property held by REITs in the annual report.

In the data collection on location was the information on economic location of property held in REITs company portfolio collected from the annual report of REITs. The information on size of building area, building valuation, rental value currently charged, name lists of major tenant, occupancy rate of the building and other information regarding cost of maintenance were also published in the annual report. Therefore, the data on economic location based on building yield *(L)* arranged through manipulating information of building valuation and rental value per year. It was then categorized according to (i) less than 5 percent *(Lᵢ)*; (ii) more than 5 percent but less than 10 percent *(Lᵢᵢ)*; (iii) more than 10 percent but less than 15 percent *(Lᵢᵢᵢ)*; (iv) more than 15 percent but less than 20 percent *(Lᵢᵥ)*; and (v) more than 20

percent *(L$_v$)*. Collection of data on economic location building yield was made using Formula 4. The computation of economic location building yield is as follows:-

$$ELBY = \frac{RVy}{BV}$$ -------------- **Formula 7**

Where,

    ELBY   = *Economic Location Building Yield*
    RVy   = *Rental receive yearly*
    BV   = *Building valuation*

Meanwhile, data collection on size of firm was the information of total net asset value *(C$_1$)* directly drawn together from the annual report, while information on market capitalization *(C$_2$)* were gathered through computed value of equity (volume times unit price). Net asset per unit *(C$_3$)* was collected through manipulation of the information of *C$_1$* and number of unit in circulation. The data for *C$_2$* and *C$_3$* were made using Formula 5 and 6 respectively. The computation of market capitalization *(C$_2$)* is as follows:-

$$C_2 = volume \times P_0$$ -------------- **Formula 8**

where;

    C$_2$ = *market capitalization of the firm*
    Volume   = *unit in circulation*
    P$_o$ = *market value price*

The computation of net asset value per unit *(C$_3$)* is as follows:-

$$C_3 = \frac{C_1}{n}$$ -------------- **Formula 9**

where;

    C$_3$ = net asset value per unit
    C$_1$ = total net asset value
    n   = number of unit in circulation

Lastly the data collection on financing policy that was actually about the cost of capital, cost of equity *(K$_e$)*, cost of debt *(K$_d$)* and weighted average cost of capital (WACC) were computed based on available information from the financial statement in the annual report of REITs company. All the data on financing policy were made using Formula 7, 8 and 9. The formula for calculation of cost of equity *(K$_e$)* is as follows:-

$$K_e = \frac{d}{P_o} \qquad \text{-------------- } \textbf{\textit{Formula 10}}$$

where;

K_e = cost of equity
d = annual dividend
P_o = market value of equity (ex-dividend)

This was the basic model which assumes a constant rate of dividend to perpetuity and ignores taxation. The formula for calculation of cost of debt (K_d) is as follows:-

$$K_d = \frac{i(1-t)}{P_o} \quad K_e = \frac{d}{P_o} \qquad \text{-------------- } \textbf{\textit{Formula 11}}$$

where;

K_d = cost of debt (after tax)
i = annual interest
t = rate of corporation tax(assumed immediately recovered)
P_o = market value of debt (ex-interest, i.e. immediately after payment)

The formula for calculation of weighted average cost of capital *(WACC)* is as follows:-

$$WACC = \frac{k_e V_e + k_d V_d}{V_e + V_d} \qquad \text{-------------- } \textbf{\textit{Formula 12}}$$

where;

$WACC$ = weighted average cost of capital
K_e = cost of equity
K_d = cost of debt (after tax)
V_e = Total market value of equity (market value of equity (ex- dividend), P_o times total number of unit)
V_d = Total market value of debt (redeemable price of debt, P_o times total unit debt issued)

3.4   Assessment through Multiple Regression Analysis

The multiple regression analysis (MRA) was used and the existence of READ's influence towards REITs performance was shown through the significant value of *R square.* The analysis was made through the significant value of *R square,* MRA was used to access the significant influence of READ. This study used MRA as tools only to assess the significant level of influence of READ on performance and not to develop any model for REITs. Equations were established just to look for the *R square* value. Neither prediction nor forecast on dependent value was carried out. This study adopted prior studies that used MRA and *R*

square value simply for assessing the significant influence of independent toward dependent. The REITs diversification strategies across location and property type with beta (Gyourko and Nelling, 1996).

Another study revealed that there was difference in asset allocation in terms of property type hold by REITs firm that resulted in a difference in performance of excess return (Myers and Webb, 2000). Myers and Webb, 2000 also reported that there was lower R^2 *value* of excess return on REITs caused by small to medium market capitalization of REITs funds. Other studies which used MRA are Gyourko and Nelling, 1996. This study the MRA was barely used to examine the significant level of R^2 value exist upon the relationships of READ and REITs performance. No further prediction on the Y value (REITs performance) has been generated within this study. This was in order to examine the influence of READ as adapted by Thurman (2007) and Levine *et al., (*2010).

The study also used the Variance Inflation Factor (VIF) analysis generated from Statistical Package of Social Sciences (SPSS) to examine if any multicollinearity level exists among the variables in the equation (O'Brien, 2007). The VIF below 10 is considered as tolerable for the analysis. However if VIF is more than 10 it indicates that there are multicollinearity existing among the variables in the equation. Nevertheless, through the literature review done, this study noticed the relationship of each of the variables to one another (Cappoza and Sequin, 2000; and Gyourko Nelling, 1996). The existence of multicollinearity among these variables was tolerated in order to determine the factors that have influenced the Malaysian financial performance supported by the argument in prior literature reviews. This study decides to tolerate the existence of multicollinearity based on study by Mason and Perreault (1991). Their studies, stated that fears about the harmful effects of collinearity predictor often are exaggerated. The collinearity should be viewed in conjunction with other factors known to affect estimation accuracy.

4.0 Data Analysis and Findings

The following Table 1, shows the analysis result from regression adapting the Enter method. Significant data from Table 1 are been selected and second run regression was conducted. The outputs are as Table 1. It shows that in equation I *(ER₁)*, the *R square value* at 0.049 and the independent variables such as P_{4i}, P_{5ii}, C_1 and C_2 contributed to explain the expected return. Meanwhile, equation II *(β₁)*, shows that *R square value* at 0.059 and the independent variables of P_{1i}, P_{1ii}, P_{2ii}, P_{3ii}, P_{5ii}, L_v, C_2, C_3, K_e, K_d and *WACC* contributed to explain the systematic risk monthly. Both equations I *(ER₁)* and equation II *(β₁)* shows the insignificant influence of READ on it. However in equation III *(Div₁)*, shows that *R square value* at 0.640 and more independent variables are able to explain Evaluation 1, which were P_{1i}, P_{1ii}, P_{3ii}, P_{4ii}, P_{5ii}, L_{ii}, C_1, C_3, K_e, K_d and *WACC.*

Table 1: The summary of the equations and its concentrated significant variables (1st stage and 2nd stage regression of Enter Method)

	1st stage regression			2nd stage regression		
Evaluation 1	I	II	III	I	II	III
Financial Performance	ER_1	$β_1$	Div_1	ER_1	$β_1$	Div_1
R Square	**0.067**	**0.062**	**0.645**	**0.049**	**0.059**	**0.640**

F value	7.794	7.242	198.168	30.860		13.686		390.076	
Variables				$t-$statistic	VIF	$t-$statistic	VIF	$t-$statistic	VIF
P_{1i}	-0948 (0.343)	**-2.038 (0.042)**	-5.752 (0.000)			-2.393 (0.017)	1.836	-6.124 (0.000)	1.822
P_{2i}	-0.211 (0.833)	-1.439 (0.150)	0.873 (0.383)						
P_{3i}	-0.467 (0.641)	-1.221 (0.222)	1.631 (0.103)						
P_{4i}	-0.262 (0.793)	-0.057 (0.955)	-1.510 (0.131)						
P_{5i}	0.085 (0.932)	-0.086 (0.931)	-0.019 (0.985)						
P_{6i}	-0.330 (0.741)	-0.435 (0.664)	1.365 (0.118)						
P_{1ii}	1.012 (0.312)	**5.079 (0.00)**	**8.677 (0.000)**			6.151 (0.000)	3.350	9.676 (0.000)	3.158
P_{2ii}	-1.286 (0.199)	**2.700 (0.007)**	1.150 (0.250)			2.640 (0.008)	1.410		
P_{3ii}	-0.789 (0.430)	**-2.148 (0.032)**	**-10.138 (0.000)**			-4.749 (0.000)	3.341	-24.265 (0.000)	3.729
P_{4ii}	**-2.451 (0.014)**	1.910 (0.056)	**16.680 (0.000)**	-4.071 (0.000)	1.122			21.665 (0.000)	3.084
P_{5ii}	**-4.250 (0.000)**	**-3.404 (0.001)**	**5.930 (0.000)**	-3.149 (0.002)	1.108	-4.106 (0.000)	1.775	6.019 (0.000)	1.916
P_{6ii}	# 3.031 (0.002)	# -8.509 (0.000)	# 0.495 (0.621)						
P_7									
P_8	-1.767 (0.074)	0.001 (0.850)	0.829 (0.407)						
L_{2i}									
L_{2ii}	1.184 (0.237)	0.780 (0.436)	**-4.289 (0.000)**					-4.078 (0.000)	1.283
L_{2iii}	0.787 (0.431)	1.392 (0.164)	-1.954 (0.051)						
L_{2iv}	0.825 (0.409)	0.645 (0.519)	-2.896 (0.004)						
L_{2v}	0.725 (0.469)	**-2.874 (0.004)**	-1.661 (0.097)			-3.468 (0.001)	1.022		
C_1	**-3.117 (0.002)**	0.710 (0.478)	**10.756 (0.000)**	-9.486 (0.000)	7.312			29.530 (0.000)	5.785
C_2	**5.067 (0.000)**	**2.021 (0.043)**	1.730 (0.084)	9.807 (0.000)	7.340	4.494 (0.000)	3.379		
C_3	0.159 (0.874)	**-2.680 (0.007)**	**-24.692 (0.000)**			-3.908 (0.000)	1.947	-45.918 (0.000)	2,805
K_e	-0.890 (0.374)	**4.179 (0.000)**	**-8.412 (0.000)**			6.767 (0.000)	6.211	-12.266 (0.000)	6.620
K_d	1.550 (0.121)	**3.159 (0.002)**	**-7.954 (0.000)**			5.437 (0.000)	2.491	-9.157 (0.000)	3.760
WACC	-1.344 (0.179)	**-5.626 (0.000)**	**11.149 (0.000)**			-7.721 (0.000)	5.535	12.712 (0.000)	6.272

i.   *In parenthesis denotes significant level.*

ii.   The column in grey and # excluded variables through SPSS output.
iii.   The variables in darker font are significant variables in 1st stage regression.
iv.   The darker area are the variables excluded in the 2nd stage regression(non- significant)

4.1 The Findings

The dependent and independent variables included in the analysis is according to Table 1 which showed that in the value of *R square* of equation III *(Div₁)* was 0.640 indicating that the independent variables explained the dependent variables of dividend payout (Div) as much as 64 percent. Meanwhile, equation I *(ER₁)* and equation II *(β₁)* showed *R square value* of 0.049 and 0.059 respectively. These indicated that both expected return monthly and systematic risk monthly cannot be explained by the independent variables (*R square* where both of *ER* and *β* were less than and around 6 percent and rather insignificant). *Therefore, for evaluation of Malaysian REITs financial performance can only confirm that dividend payout yearly are influenced by (1) properties allocation strategy such as (i) property type differences and diversified; (ii) location; (iii) size of firm; and (iv) REITs firm financing policy.*

The following paragraph demonstrates the variables that influenced the Malaysian REITs financial performance. The Table 1 shows that in equation I *(ER₁)*, the independent variables such as P_{4ii}, P_{5ii}, C_1 and C_2 contributed to explain the expected return. Meanwhile, in equation II *(β₁)*, the Table 1 showed that independent variables of P_{1i}, P_{1ii}, P_{2ii}, P_{3ii}, P_{5ii}, L_v, C_2, C_3, K_e, K_d and *WACC* contributed to explain the systematic risk monthly. On the other hand, the equation III *(Div₁)*, reveal more independent variables as explained are P_{1i}, P_{1ii}, P_{3ii}, P_{4ii}, P_{5ii}, L_{ii}, C_1, C_3, K_e, K_d and *WACC*. Since equation III *(Div₁)* indicated that there is a significant relationship between READ and Malaysian REITs' performance, therefore variables that influence the *Div₁* are highlighted. The related literature reviews the support and the influence of the variables.

Please refer to Figure 2. Through equation III *(Div₁)*, it was found that office space either by size value *(P₁ᵢ)* or by percentage *(P₁ᵢᵢ)*, were contributing towards the performance of *Div*. These result were evidence from the Malaysian REITs properties which located at higher density area, located at strategic location which provide better quality of transportation, communication and technology. For example, AmFirst and Tower are specializes on office space 100 percent with RM500 million and RM550 million respectively. Meanwhile AHP 2 and UOA hold more than 75 percent concentration on office space. Others are AHP, Quill Capita, Axis and AmanahRaya. This evidence that office space is prefers in READ. This seems to align with studies by Shilling (1997) and Brueggeman (1996), that investment in office market induced by economic situation.

Besides office space, the hotel/ rental apartment by percentage *(P₃ᵢᵢ)*, also found to contribute toward REITs performance. Following the development of office space market discussed above, it is found that factors such as financial, location, economic and relationship are influencing the hotel investment decision- making. Despite REITs hold the highest market risk as compared to other REITs sectors, risk adjusted return of hotel REITs was connected to that of the overall market. Although the percentage of hotel holding by Starhills is less than 35 percent, but the value of hotel building own is   more than RM 480 million. This is supported through studies by Newell and Seabrook (2006) and Kim *et al.,* (2002).

The influence of industrial building by percentage *(P₄ᵢᵢ)* on equation III, found that real economy variables represented important information regarding future movement of industrial rent and price, and that the affordability of industrial occupiers about future rental movement had been assessed

effectively. Although the industrial buildings owned by Atrium, Axis and AmanahRaya were located out of the congestive area (for example sea- port), but properties offer managed to fulfill tenants satisfaction. This made into discussion by Tsolacos *et al*., (2005).

Meanwhile the influence of retail by percentage *(P5ii)* towards Malaysian REITs' performance, agreed to the earlier study that beta of retail property REITs are 50 percent higher than industrial and warehouse property REITs (Gyourko and Nelling, 1996). However the percentage of retail holds by Malaysian REITs is small as only Quill Capita and AHP owned this type of property which is less than 20 percent and less 7 percent holding respectively.
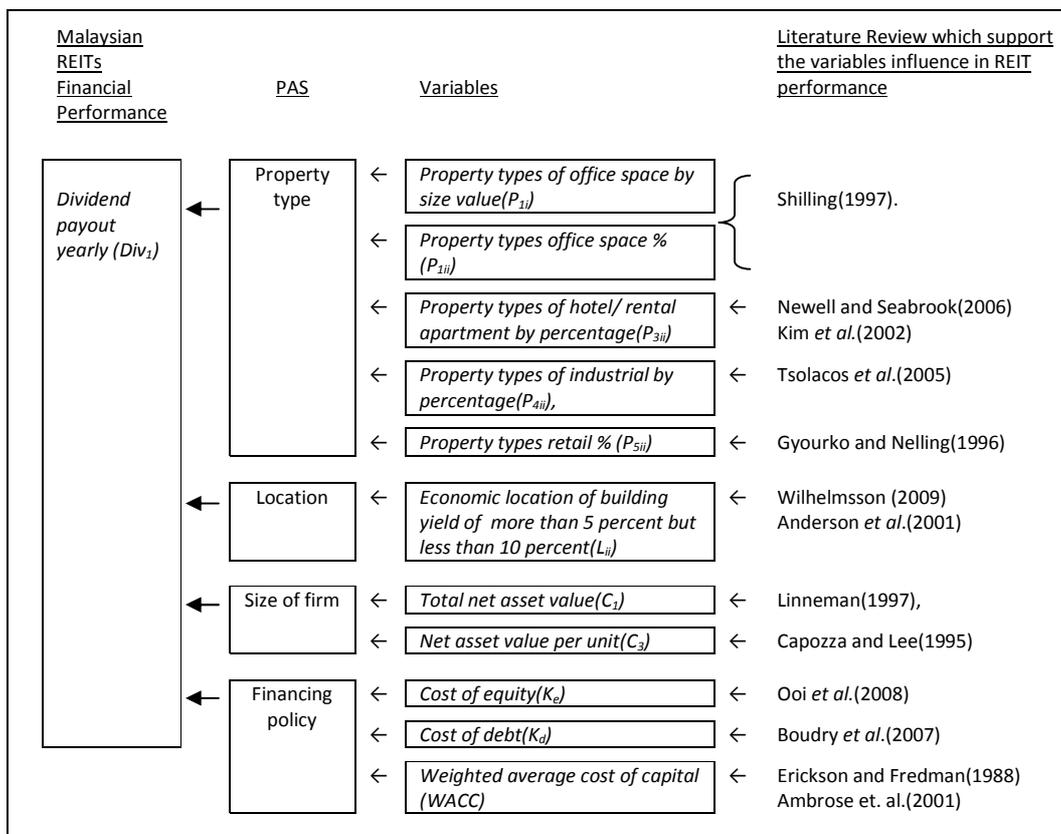
Figure 2: The variables that influenced dividend performance

The economic location through L_{ii} in equation III, explained that Malaysian REITs performance influenced by the location which able to provided economic location of building yield between 5 to 10 percent. Figure 3 showed that the average economic location building yield of Malaysian REITs. The economic location derived from a set of metro statistical area (MSA) fundamental economic variables that should capture the differences between market such as demographic, employment structure, economic growth pattern and space distribution by property sector of a market (Wilhelmsson, 2009 and Anderson *et al*., 2001).

The total net asset value (C_1) in equation III, showed there is an influence of size in Malaysian REITs' performance. As the end of 2008, there are two REITs that had TNAV of more than RM700million, seven

REITs had TNAV of more than RM400 million but less RM500 million and three REITs had TNAV of less than RM300 million. While, net asset value *(C₃)* also showed influence in REITs' performance evidence from NAV of Malaysian REIT's which stated more than 85 percent of REITs had NAV of more than 1.00 per unit and only AHP 2 and Starhills had NAV of less than 1.00 per unit. The functions of TNAV and NAV per unit in Malaysian REITs performance seem to be parallel with studies by Linneman (1997) and Capozza and Lee (1995).

Meanwhile, all independent variables in cost of capital such as K_e, K_d and *WACC,* influenced the Malaysian REITs' performance. This agreed with a prior study by Erickson and Fredman (1988), that the difference between K_d and K_e on REITs capital structure depend on the greater the sensitivity of the WACC to alternative weighting scheme and the investors' perception of the risk of the REITs.
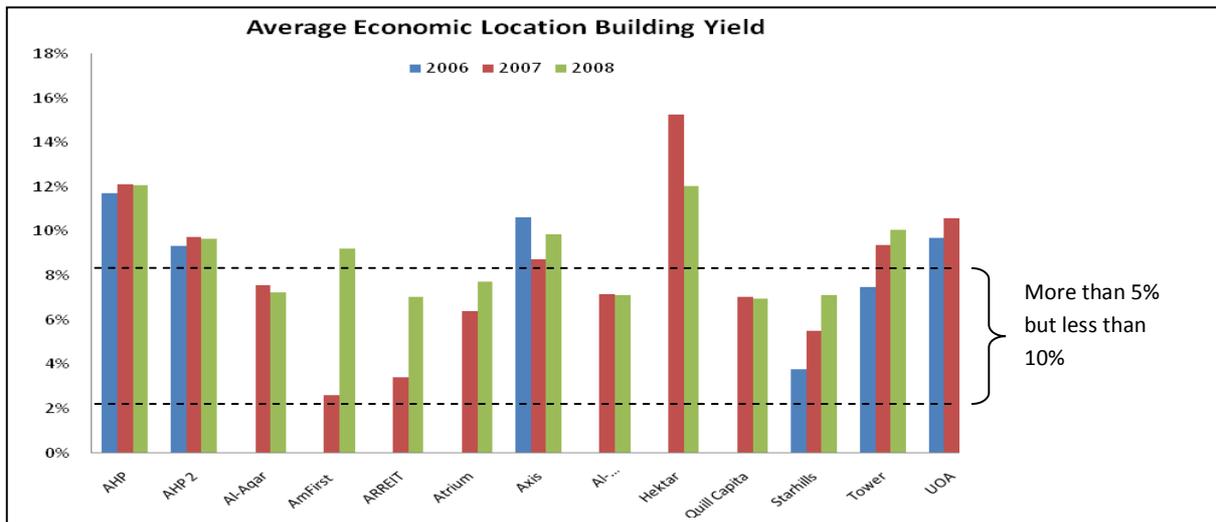

Figure 3: The Average Economic Location Building Yield

A general assumption derived from equation III indicated that the performance of dividend payout yearly had positive relationship with office space, industrial and retail, TNAV and WACC. Meanwhile, dividend had a negative relationship with hotel, location, NAV per unit, K_e and K_d.

 An analysis through variance inflation factor (VIF) among these variables indicated that all had VIF less than 10 which were considerably tolerable (O'Brien, 2007). Based on the literature reviews done, it was observed that each strategy such as property type, location, size and financing policy were unable to work alone without the support of one another.

4.2 The Discussion

The assessments on the all of the equations witnessed a few independent variables that influenced the REITs financial performance. For example property type differences of retails by percentage (P_{5ii}) and cost of equity (K_e) corresponded toward all dependent variables. This indicated that in terms of property type differences, Malaysian REITs should focus on holding more in retails (P_{5ii}) agreed to prior study (Byrne and Lee, 2009; Nijkamp et *al.,* 2002; Gyourko and Nelling, 1996).

The function of cost of equity (K_e) to contribute towards dependent variables due to cost of issuing equity during 2006 until 2008 in Malaysia is lower than cost of debt. Moreover in the middle of 2007, there was an economic turbulence which witnessed the effect of US sub- prime on real estate industries that caused economic downturn impact on many South East Asia countries. This resulted in an increase in interest rate that influenced REITs manager to be reluctant to achieve their target debt. Therefore, these seemed to be parallel to earlier studies (Ooi et *al*., 2008; Baudry et *al.,* 2007; and Erickson and Fredman, 1988).

The study's objective was achieved with mixed results. The Malaysian financial performance through expected return and beta show an insignificant influence of READ (value of *R square* for ER_1 and β_1 less than 6 percent). However dividend distribution showed that *R square value* of 64 percent indicated a significant relationship exists upon READ and dividend. There were two conclusions drawn from this result. First, it indicated that investors preferred Malaysian REITs for its long term goal investment and stable distribution. This seems to support earlier findings in US REITs (Ooi et *al.,* 2008; Baudry et *al.,* 2007; Chan et *al.,* 2003; Newell et *al.,* 2002; Ambrose et. *al.,* 2001; and Erickson and Fredman, 1988). Second, there was not enough evidence that all four factor of READ namely i) property type; ii) location; iii) size of firm and; iv) financing policy were capable to influence the performance of Malaysian REITs. Therefore other qualitative factors should be included in order to improved Malaysian REITs' performance. A review on US REITs' literature found that the performance of REITs had been affected by the institutional investors in REITs (Chan et *al.,* 2003). The investment of institutional investors in REITs functioned as a price setter for stock itself. They also helped boost the REITs companies credibility ad confident especially to the young REITs, which the general public evaluated on the reputation of the institutional investors (Lee et *al.,* 2008). Besides that, the institutional investors had different preference to REITs and preferred larger REITs (Ciochetti et *al.,* 2002). Institutional investors were attracted to REITs due to its ability to provide greater liquidity, feasible of operation and ability to diversify at any level of investment.

Other than that, this study also takes into consideration the role of advisory of REITs companies as the lesson learnt from US REITs industry which witnessed the transformation of REITs from external advisory to internal advisory managing companies (Ghosh and Sirman, 2003; Young and Elayan, 2001; and Capozza and Seguin, 2000). However, in recent years, there are studies which argued that there was an advantage of being an external advisory form as proved by several US REITs which remained being managed by external advisory REITs despite all the consequences and disadvantages outlined (Benefield and Pyles, 2009; and Ambrose and Linneman, 2001). Therefore the consideration of qualitative factors such as institutional investors' participation and advisory of managing company should be made since low value of R^2 on equation I (ER_1) and equation II (β_1).

This study anticipates that both qualitative factors able to improve value of R^2 based on the fact that beta (systematic risk) is low that indicate unsystematic risk able to explain the REITs financial

performance. Moreover the unique characteristic of Malaysian REITs advisory of managing companies need for explanation in order to provide higher return for Malaysia REITs. Therefore, this invites for further investigation and logically since there is insignificant relationship between READ and expected return and beta.

5.0 Summary

This study suggested that the Malaysian REITs' performance by dividend payout is influenced by factors of real estate allocation decision (READ) through significant value of R^2 of 64 percent. However the Malaysian REITs' performance by expected return and beta coefficient (systematic risk) had insignificant influence on READ. Therefore this study anticipates that qualitative factors such as institutional investors' participation and advisory of managing companies are able to improve the performance of expected return and beta coefficient (systematic risk). Further examination on the inclusion of these two factors on READ and Malaysian REITs' performance is interesting and is logical to be carried out based on above arguments.

Acknowledgement

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