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Securitised Real Estate in a Mixed-asset Portfolio: The Case of Malaysia

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ABSTRACT

The issue of whether Malaysian securitised real estate is an effective indirect property investment vehicle has drawn increasing attention from investors, particularly the Malaysian institutional investors.

Previous studies on Malaysian securitised real estate market had emphasised on performance analysis. Therefore, this paper seeks to examine the role of Malaysian property shares and REITs in a mixed-asset portfolio from 1991 to 2006. The results show property shares do not provide any diversification benefits nor portfolio return enhancement, whereas equally-weighted REITs portfolio does provide diversification benefits and return enhancements under the mean-variance and downside risk frameworks. Besides, the equally-weighted and value-weighted REITs portfolios do behave differently.

Keywords: mixed-asset portfolio, property shares, REITs, mean-variance and downside risk frameworks.

1.0 INTRODUCTION

The securitised real estate market in Malaysia is largely dominated by listed property companies (or known as property shares) and Real Estate Investment Trusts (formerly known as Listed Property Trusts). As at 16 December 2007, there are 99 listed property companies and 13 REITs listed on Bursa Malaysia. As an emerging securitised real estate market, the size of the Malaysian securitised real estate market is relatively small in comparison to other developed markets. Despite Malaysia being the first country to introduce REITs in Asia, the market capitalisation of Malaysian REIT market is substantially smaller than other Asian markets such as Japan (US$49 billion) and Singapore (US$19 billion) (CBRE, 2007).

Importantly, the findings from previous studies on Malaysian securitised real estate market revealed that Malaysian securitised real estate is an ineffective indirect property investment and it provides unfavourable risk-adjusted returns. For example, Kok and Khoo (1995), Ting (1999) and Newell *et al.* (2002) found that Malaysian REITs were performed poorly based on the risk-adjusted performance analysis. Interestingly, Rozali

and Hamzah (2006) found that Malaysian REITs in general outperform the market only during the Asian Financial Crisis. Ting (2002) examined the performance of listed property companies and found that Malaysian property shares performed poorly. Results of correlation analysis also do not indicate any diversification potential for Malaysian property shares in a mixed-asset portfolio.

Considering the poor performance of Malaysian securitised real estate, the Malaysian government has attempted to provide a more favourable environment for the growth of securitised real estate, particularly the development of REITs. Sustain efforts have been undertaken by the government to improve the structure of REITs and accelerate the growth of REITs. These efforts include the introduction of tax transparency for REITs, exempting the property gain tax and stamp duty for properties that transferred to a REIT and introducing Islamic REIT structure (Osmadi, 2007). These efforts have renewed the attention of institutional investors towards the Malaysian securitised real estate, and the total number of Malaysian REITs had increased rapidly from three (2004) to thirteen (2007).

Therefore, the issue of whether Malaysian securitised real estate is an effective indirect property investment vehicle has drawn increasing attention from the Malaysian institutional investors. However, previous studies on Malaysian securitised real estate market had emphasised on the performance analysis; little studies have been conducted on the diversification benefits of the Malaysian securitised real estate.

The main purpose of this paper is to examine the role of Malaysian securitised real estate in a mixed asset portfolio. The objectives of this research are:

(a) to examine the benefits of return enhancement derived from including property shares and REITs in a mixed asset portfolio;
(b) to investigate the risk reduction benefits of including property shares and REITs in a mixed asset portfolio.

The remainder of this paper is structured as follows. Section 2 is the literature review. The data and methodologies are discussed in Section 3. Section 4 reports and discusses the results from the analyses. Section 5 concludes the paper.

2.0 LITERATURE REVIEW

The diversification benefits of securitised real estate such as REITs and property shares in a mixed-asset portfolio have been considerably examined in the US, UK and Australia property markets. In the US, earlier studies on REITs indicate little improvement can be generated by adding REITs in a share portfolio (Kuhle, 1987). Mueller *et al.* (1994) highlighted the diversification potential of REITs in a mixed-asset portfolio from January 1976 to June 1993. Their results reported that REITs have strong positive correlations with small-cap stocks and the S&P 500 index, although a weak positive correlation with bonds.

Li and Wang (1995) examined the segmentation of REIT market (i.e. both equity REITs and hybrid REITs) from 1971 to 1991 by using a co-integration test. Their findings showed that REITs were integrated with the general stock market. Ling and Naranjo (1999) also found similar results by using non-linear regression (fixed-coefficient model) and similarly by Fama and MacBeth (1973) using two-pass regression technique (time-varying risk-premium estimates). In other words, REITs would not be able to provide significant performance improvement with the inclusion of REITs in a stock portfolio. Interestingly, Glascock *et al.* (2000) found little benefits of adding REITs after the structural break point in 1992 where REITs were integrated with the stock market.

In contrast, Wilson and Okunev (1996) examined the integration between securitised real estate and domestic mixed-asset portfolios and among international securitised real estate markets. The results from these tests do not support cointegration between domestic securitised real estate and equity markets and among international securitised real estate markets. Thereafter, Wilson *et al.* (1998) re-examined the issue of integration by pondering the issue of structure breaks. In general, they do not find any significant evidence to support the cointegration of securitised real estate and equity markets either domestically or internationally. All of these findings are consistent with the results from the study of Clayton and Mackinnon (2001), which showed that the sensitivities of REITs to stock has declined substantially and they have performed more like real estate. Similarly, in Australia, it was found that the correlation between stock market and LPTs has declined in recent years (Newell and Acheampong, 2001, Kishore, 2004, Newell, 2005a).

Clayton and Mackinnon (2003) proposed variance decomposition procedure for examining the importance of real estate, stock and bond factors in explaining the variation of REIT returns. They found an increase of property factor in explaining REIT returns in recent years. Newell (2005b) found that even though there is a decrease for the stock effect on Australian LPT volatility, a small contribution for property is evident for explaining LPT volatility. Interestingly, it was also found that the importance of bond factor has increased in recent years in LPT performance. Newell *et al.* (2007) also identified similar results for Hong Kong real estate companies in which stocks dominates the companies' volatility, while real estate contributing a small proportion for the companies' volatility.

Ghosh *et al.* (1996) re-examined the characteristics of REITs over the study period of 1985-1996. They found that the new breed of REIT market is less like stocks due to the decrease in correlation between REITs and stock market in recent years. Ziering et al. (1999) studied the correlations between REITs and several stock and bond indices. They found the evidence of decrease in correlations between REITs and other stock indices. The correlations between REITs and the S&P 500 declined considerably from the peak around 0.80 (the early 1990s) to the bottom at around 0.16 (December 1996). This indicates that REITs can provide some diversification for share portfolios. Furthermore, Feldman (2003) employed the NCREIF index, variable-liquidity index and constant-liquidity index to represent the direct property market over the study period of July 1987 to June 2001; they found that REIT market and direct property market are complementary investments due to the low positive correlation between both markets and the optimisation results that are obtained.

In addition, Mueller and Mueller (2003) employed the 5-, 10-, 15-, 20-, 25-year quarterly data and 25-year annual data and found that most of the correlations between EREIT and NCREIF indices were very low. In fact, a more efficient frontier can be produced by including both real estate markets together in a mixed-asset portfolio. Georgiev *et al.* (2003) also found that direct property may provide some diversification benefits to stocks and bonds, while they did not find similar evidence for REITs. This implies that REITs are correlated with stocks. Additionally, they also found that REITs are poor substitutes for direct property. More recently, Lee and Stevenson (2005) confirmed the importance of U.S. REITs in the mixed-asset portfolio in which they revealed evidence of REITs play a consistent role in providing diversification benefits and return enhancements.

Nevertheless, Sivitanides (1998) and Sing and Ong (2000) have proposed the use of downside risk optimisation into real estate portfolio construction where the results show that the downside risk measure provides a more efficient frontier than the traditional mean variance optimisation for real estate. The efficiency of downside risk optimisation is attributed to the theoretical superiorities of downside risk where it does not require any assumption on return distributions and investors' utility functions, as well as it only focuses on the downside part.

Cheng (2001) also documented that a higher terminal wealth can be produced by using downside risk optimisation model and it also produced a more sensible real estate allocation. Hence, it supported that downside risk is a more superior optimisation model. In Australia, Peng (2005) found similar results for a three-asset portfolio (direct real estates, LPTs and stocks) and concluded that different portfolio allocations can be obtained by using mean variance optimisation and downside risk optimisation. Sing and Ling (2003) employed downside risk framework and the results showed that the Singapore Listed Property Trusts (HPTs), especially the office and the retail HPTs, offer diversification potential to investors. Moreover, Maurer and Reiner (2002) also found the diversification potential for the inclusion of international real estate companies in a portfolio which could improve portfolio efficiency from the Germany and US perspectives in a downside risk framework.

In summary, most of the studies on securitised real estate have been undertaken in the US, UK and Australia property markets. Little attention has been directed towards examining the benefits of Malaysian securitised real estate in a mixed-asset portfolio. Besides, no Malaysian securitised real estate study has been undertaken using the downside risk framework.

3.0 DATA AND METHODOLOGY

This study employs the monthly returns of Malaysian shares (proxied by KLCI) and bonds (represented by Malaysian Government Securities RAM-Quant Shop Index) from January 1991 to December 2006. Securitised real estate is represented by the Property Sector Index and REITs of Bursa Malaysia. As there is no REIT index available for the

Malaysian listed REIT market in Bursa Malaysia, value-weighted and equally-weighted REITs portfolios are constructed to represent listed REITs in Malaysia.

In this study, the mean variance and downside risk optimisations were utilised in order to assess the role of securitised real estate in a mixed-asset portfolio. In the mean variance framework, the optimisation of asset portfolio can be modelled as a quadratic programming function as follow:

Minimise

$$\sigma_p^2 = \sum_{i=1}^{N}\sum_{j=1}^{N} w_i w_j \sigma_{ij} \quad (1)$$

where

σ_p^2 = The variance of portfolio

W_i = The proportion of portfolio allocated to asset i

W_j = The proportion of portfolio allocated to asset j ; and

σ_{ij} = The covariance between asset i returns and j asset returns

In a downside risk framework, conversely, the n-degree Co-LPM (CLPM) optimisation algorithm is defined as:

Minimise $LPM_p = \sum_{i=1}^{N}\sum_{j=1}^{N} w_i w_j CLPM_{ij}$ (2)

where

$$LPM_n = \frac{1}{T-1}\sum_{t=1}^{T} Max\left[0,(\tau - R_{it})\right]^n$$

$$CLPM_n(\tau, R_i, R_j) = \frac{1}{T-1}\sum_{t=1}^{T} Max\left[0,(\tau - R_{it})\right]^{n-1}(\tau - R_{jt})$$

R_{it} and R_{jt} represent the rate of return of the asset i and j at time *t*.

4.0 RESULTS AND DISCUSSIONS

Table 1 exhibits the descriptive statistics of the average returns of the various investment options. The equally-weighted REIT portfolio provides the highest annualised return of 15.6% which is substantially higher than stocks (8.4% per annum) and bonds (4.8% per annum), as well as property shares (3.6% per annum). Interestingly, the REITs value-weighted portfolio provides only 4.8% annualised return. This indicates that there is substantial variation between the returns produced by different REIT portfolios. In other words, these REIT portfolios could generate different levels of return for investors.

Table 1: Descriptive Statistics of the Monthly Investment Option Returns (Jan 1991 – Dec 2006)

	Stocks	Property Shares	Bonds	REITs (Equally-Weighted)	REITs (Value-Weighted)
Mean	0.007	0.003	0.004	0.013	0.004
Median	0.008	0.001	0.004	-0.005	-0.001
Maximum	0.342	0.487	0.009	2.687	0.811
Minimum	-0.248	-0.273	0.003	-0.442	-0.113
Std. Dev.	0.080	0.107	0.002	0.218	0.064
Skewness	0.606	0.781	0.493	9.754	10.695
Kurtosis	6.252	5.678	1.888	119.438	135.183
Observations	192	192	192	192	192

The correlation matrix among these assets is presented in Table 2. Clearly, the stocks and property shares are strongly correlated. The strong positive correlation indicates that no diversification potential could be generated for share investors by investing in property shares. On the other hand, bonds are negatively correlated with stocks, suggesting that bonds offer some diversification benefits for share investors.

Table 2: Correlation Matrix (Jan 1991 – Dec 2006)

Asset	Stocks	Property Shares	Bonds	REIT (Equally-weighted)	REIT (Value-weighted)
Shares	1.000				
Property Shares	0.856	1.000			
Bond	-0.123	-0.085	1.000		
REIT (Equally-weighted)	0.486	0.440	-0.004	1.000	
REIT (Value-weighted)	0.512	0.480	-0.004	0.995	1.000

The REITs (either equally-weighted or value-weighted) are moderately related to stocks and property shares. This indicates that the inclusion of REITs in the mixed-asset portfolio would be able to provide some diversification benefits. The negative relationship between bonds and REIT portfolios and property shares further support that bonds are defensive assets. However, the correlation results only provide some snapshots for the diversification benefits of REITs and property shares. A detailed diversification tests in the mean-variance and downside risk frameworks is undertaken and reported in the following sections.

Normality Tests

As discussed in section 2, it is crucial to ascertain the normality of return distributions in order to determine whether downside risk optimisation is necessarily to be conducted. Therefore, the normality of these assets is examined by using several normality tests, namely Jarque-Bera test, Kolmogorov-Smirnov test and Lilliefors test. The results are exhibited in Table 3.

Table 3: Normality Tests (Jan 1991 – Dec 2006)

Test	Jarque-Bera	Kolmogorov-Smirnov	Lilliefors
Stocks	96.336**	1.342	0.097**
Property Shares	76.898**	1.175	0.085**
Bond	17.654**	3.277**	0.236**
REITs (Equally-weighted)	143438.8**	4.255**	0.307**
REITs (Value-weighted)	111507.9**	3.962**	0.286**

Note: ** denotes statistically significant at 1% level of significance.

Apparently, normality assumptions for all assets can be rejected at the 1% significance level by Jarque-Bera and Lilliefors tests. Similar results are also evident for REIT portfolios and bonds by using Kolmogorov-Smirnov test. However, the Kolmogorov-Smirnov test could not reject the normality assumption for shares and property shares. The dissimilarity can be attributed to the sensitivity of these tests. This strong rejection evidence also highlights the importance of considering the asymmetric return distributions. Hence, downside risk should be given the primary consideration in assessing the role of securitised real estate in the mixed-asset portfolio.

Riskiness of Assets

The riskiness of different types of assets is displayed in Table 4. The standard deviation shows that equally-weighted REIT portfolio appears the most risky asset, whereas the bonds are the least risky asset. In contrast, the downside deviation (both target rates) exhibits that the property shares are the most risky asset, while the downside deviation also confirms that bonds are the least risky asset.

Table 4: The Riskiness of Different Type of Assets (Jan 1991 – Dec 2006)

Assets	Stocks	Property Shares	Bonds	REITs (Equally-weighted)	REITs (Value-weighted)
Standard Deviation	0.080 (3)	0.107 (2)	0.002 (5)	0.218 (1)	0.064 (4)
Downside Deviation (target=bonds	0.052 (3)	0.070 (1)	0.001 (5)	0.065 (2)	0.018 (4)
Downside Deviation (target=shares)	0.053 (3)	0.072 (1)	0.003 (5)	0.066 (2)	0.020 (4)

The results also show that the standard deviation is considerably higher than downside deviation. This indicates that standard deviation which estimates the deviations from mean (including upside and downside parts), overestimate the risks for the assets. These results are consistent with the results from Sing and Ong (2000) and Peng (2005). There is another important observation where the equally-weighted and value-weighted portfolios have considerable difference riskiness level. The equally-weighted REIT portfolio demonstrates substantial higher risk than the value-weighted portfolio. These results are not very surprising in which the Table 1 reveals that the equally-weighted REIT portfolio can provide considerable higher return than value-weighted REIT portfolio. These results also suggest that both portfolios have different risk and return profiles.

Property Shares

In this section, the role of Malaysian property shares in a mixed-asset portfolio is examined where it detemines whether property shares could provide any further benefits either risk diversification or return enhancement in the portfolio. The results are presented in Tables 5 and 6.

Table 5: Portfolio Optimisation of Bonds, Stocks and Property Shares - Return Enhancement

Model	Risk (%)	Bonds	Stocks	Property Shares
Return=0.5%				
Mean Variance	0.038	0.753	0.247	0.000
CLPM (τ =Bonds)	0.016	0.753	0.247	0.000
CLPM (τ =Stocks)	0.019	0.753	0.247	0.000
Return=0.6%				
Mean Variance	0.228	0.399	0.601	0.000
CLPM (τ =Bonds)	0.096	0.400	0.600	0.000
CLPM (τ =Stocks)	0.104	0.400	0.600	0.000
Return=0.7%				
Mean Variance	0.576	0.047	0.953	0.000
CLPM (τ =Bonds)	0.244	0.047	0.953	0.000
CLPM (τ =Stocks)	0.258	0.047	0.953	0.000

Table 5 clearly shows that no return enhancement can be generated by including property shares in the portfolio. Indeed, property shares fail to obtain an allocation in every single case. However, the return of portfolio can be enhanced by adding a higher proportion of stocks in the portfolio. For instance, the 0.1% return enhancement of the portfolio from 0.5% to 0.6%, the stocks allocation should be increased by around 32%. Interestingly, the mean-variance and downside risk optimisations provide almost identically identified results, confirming that no improved return could be generated by including property shares in the portfolio.

Table 6: Portfolio Optimisation of Bonds, Stocks and Property Shares - Risk Reduction

Model	Return (%)	Bonds	Stocks	Property Shares
Risk=0.25%				
Mean Variance	0.608	0.317	0.629	0.000
CLPM (τ =Bonds)	0.703	0.035	0.965	0.000
CLPM (τ =Stocks)	0.696	0.062	0.938	0.000
Risk=0.20%				
Mean Variance	0.589	0.437	0.563	0.000
CLPM (τ =Bonds)	0.675	0.136	0.864	0.000
CLPM (τ =Stocks)	0.667	0.162	0.838	0.000
Risk=0.10%				
Mean Variance	0.543	0.601	0.399	0.000
CLPM (τ =Bonds)	0.603	0.388	0.612	0.000
CLPM (τ =Stocks)	0.597	0.411	0.589	0.000

Table 6 reveals the ability of property shares in offering diversification potential in a mixed asset portfolio. It can be seen that the property shares fail to obtain any allocation in every single optimal portfolio optimisation. The results also further confirm the results from Table 3 that there is no diversification potential that can be offered by including the Malaysian property shares in the portfolio due to strong correlation between stocks and property shares. Besides, different target rates of return do not change the downside risk results significantly; no considerable difference is evident by comparing the optimisation results from CLPM (τ =Bonds) and CLPM (τ =Stocks).

Overall, property shares do not offer any diversification benefits or portfolio return enhancement for being included in a mixed asset portfolio under the mean-variance and downside risk frameworks. In other words, there is no evidence to support the notion that property shares should be allocated in a mixed-asset portfolio.

REITs

The optimisation results of Malaysian REITs in the portfolio are presented in Tables 7 and 8. Panel A in Table 7 reveals that both mean variance and downside risk optimisation models suggest that the value-weighted REITs portfolio would not be able to enhance significant performance benefits to a portfolio of common stocks and bonds. The return enhancement could only be generated by increasing the allocation of stocks; while the value-weighted REITs portfolio behave in a very similar fashion as property shares, which is unable to obtain any allocation in every single optimal portfolio optimisation.

On the other hand, Panel B in Table 7 reveals the benefits of including REITs in the portfolio under an equally-weighted REITs portfolio. Both different frameworks reveal that REITs inclusion can provide a higher return for the mixed-asset portfolio. This indicates that Malaysian investors could generate higher return by allocating their funds in REITs. For example, the increased allocation of REITs from around 5% to 12% (mean variance optimisation) could increase the return of portfolio to 0.6%. Similar result is also observed from the downside optimisations.

Table 7: Portfolio Optimisation of Bonds, Stocks and REITs - Return Enhancement

Model	Risk (%)	Bonds	Stocks	REITs
Panel A: Value-weighted REITs Portfolio				
Return=0.5%				
Mean Variance	0.102	0.615	0.385	0.000
CLPM (Target=Bonds)	0.016	0.753	0.247	0.000
CLPM (Target=Stocks)	0.019	0.753	0.247	0.000
Return=0.6%				
Mean Variance	0.228	0.400	0.600	0.000
CLPM (Target=Bonds)	0.096	0.400	0.600	0.000
CLPM (Target=Stocks)	0.104	0.400	0.600	0.000
Return 0.7%				
Mean Variance	0.576	0.047	0.953	0.000
CLPM (Target=Bonds)	0.244	0.047	0.953	0.000
CLPM (Target=Stocks)	0.258	0.046	0.954	0.000
Panel B: Equally-weighted REITs Portfolio				
Return=0.5%				
Mean Variance	0.025	0.859	0.091	0.050
CLPM (Target=Bonds)	0.002	0.896	0.039	0.065
CLPM (Target=Stocks)	0.003	0.900	0.032	0.067
Return=0.6%				
Mean Variance	0.147	0.661	0.217	0.122
CLPM (Target=Bonds)	0.012	0.750	0.090	0.160
CLPM (Target=Stocks)	0.015	0.755	0.083	0.162
Return 0.7%				
Mean Variance	0.371	0.462	0.343	0.194
CLPM (Target=Bonds)	0.030	0.604	0.141	0.255
CLPM (Target=Stocks)	0.035	0.610	0.133	0.257

However, there is a slight discrepancy in the allocations for REITs between the mean variance and downside risk frameworks. This divergence can be attributed to non-normality in Malaysian REITs return distributions. More importantly, this further supports that mean variance analysis could provide misleading results if the return distributions are non-normally distributed. Consistent with the Tables 5 and 6, the impact of different target rates of return on the optimisation results is marginal, where no significant differences are obtained.

Table 8 indicates the role of REITs (either value-weighted or equally-weighted) in reducing the risks of portfolios. The immediate observation from Table 8 is the value-weighted REIT portfolio does not contribute towards portfolio risk reduction. No allocation for REITs is required in order to reduce the risks of the portfolios. This is

inconsistent with the results that have been demonstrated in developed REIT markets such as the U.S. REITs and Australian LPTs.

Panel B of Table 8, in contrast, shows that equally-weighted REITs portfolio offer some diversification benefits for the mixed-asset portfolio in which the increments in allocation in REITs would reduce the risk of portfolio in the downside risk framework. However, no similar evidence is evident from the mean-variance analysis. As shown in Panel B of Table 8, a decrease trend in the weight of REITs is observed in order to reduce the risk of portfolio (variance). This discrepancy can be attributed to the divergence allocation results that are obtained from the different frameworks. Additionally, the different target rates of return provide considerable different allocation in which CLPM (τ =bonds) provides greater allocation in equity; whereas larger weight is given to REITs for CLPM (τ =stocks).

Table 8: Portfolio Optimisation of Bonds, Stocks and REITs: Risk Reduction

Model	Return (%)	Bonds	Stocks	REITs
Panel A: Value-weighted REITs Portfolio				
Risk 0.25%				
Mean Variance	0.608	0.371	0.629	0.000
CLPM (Target=Bonds)	0.703	0.035	0.965	0.000
CLPM (Target=Stocks)	0.696	0.062	0.938	0.000
Risk 0.20%				
Mean Variance	0.589	0.437	0.563	0.000
CLPM (Target=Bonds)	0.675	0.136	0.864	0.000
CLPM (Target=Stocks)	0.667	0.162	0.838	0.000
Risk 0.10%				
Mean Variance	0.543	0.601	0.399	0.000
CLPM (Target=Bonds)	0.553	0.565	0.435	0.000
CLPM (Target=Stocks)	0.597	0.410	0.590	0.000
Panel B: Equally-weighted REITs Portfolio				
Risk 0.25%				
Mean Variance	0.652	0.559	0.282	0.160
CLPM (Target=Bonds)	0.734	0.000	0.967	0.033
CLPM (Target=Stocks)	1.167	0.000	0.268	0.732
Risk 0.20%				
Mean Variance	0.628	0.606	0.251	0.143
CLPM (Target=Bonds)	0.803	0.000	0.855	0.145
CLPM (Target=Stocks)	1.092	0.041	0.329	0.630
Risk 0.10%				
Mean Variance	0.570	0.719	0.180	0.100
CLPM (Target=Bonds)	0.917	0.289	0.251	0.460
CLPM (Target=Stocks)	0.896	0.326	0.231	0.443

In short, no evidence is found that value-weighted REITs portfolios offer diversification benefits and return enhancements under the mean-variance and downside risk frameworks. On the other hand, under the equally-weighted portfolio, REITs lead to improvements in the performance of the efficient frontier in the mean variance analysis and downside risk frameworks. A positive diversification contribution of equally-weighted REITs portfolio is also demonstrated in the downside risk analysis, whereas it is not observed in the mean variance analysis.

5.0 CONCLUSION

The growth of securitised real estate markets in Malaysia has received the increasing attention from the institutional investors. This paper seeks to examine the benefits of two securitised real estate vehicles in Malaysia, which are property shares and REITs in a mixed-asset portfolio.

Several important findings of primary interests to the investors can be drawn from this study. First, the results indicate that little benefits can be obtained by adding property shares in a mixed-asset portfolio. This suggests that property share is not an attractive diversifier in which it fails to offer any risk reduction or return enhancement for a mixed portfolio. On the other hand, in general, an equally-weighted REIT portfolio could be able to offer some diversification benefits and return improvements for a mixed-asset portfolio. However, the equally-weighted and value-weighted REITs portfolios provide substantial different results. This highlight that portfolio managers should be cautious to the different risk and return profiles of these REITs portfolios. The variations in the portfolio allocations by using downside risk and mean-variance optimisations are also observed from REITs optimisation results.

This study provides several useful insights and conclusions on the diversification benefits of including securitised real estate (i.e. listed property shares and REITs) in a mixed-asset portfolio.

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