

C-REITs and I-REITs in the Malaysian Market: Performance and Diversification Benefits

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This study examines the performance and diversification benefits using a sample of 17 Conventional Real Estate Investment Trusts (C-REITs) and three Islamic Real Estate Investment Trusts (I-REITs) in Bursa, Malaysia during the period from January 2005 to December 2017. The surviving and non-surviving Real Estate Investment Trusts (REITs) during the study period are included to ensure the findings would not suffer from survivorship bias. To achieve the study objective, the Sharpe index, Treynor index and Jensen index are employed to evaluate the performance of both REITs. As a benchmark, the returns on the Kuala Lumpur Composite Index (KLCD) and EMAS indices are used as a proxy for the overall market portfolio returns while the risk-free rate is represented by the three-month Malaysian Government Security. The results show that I-REITs are able to generate slightly higher average monthly returns than that of the C-REITs. Furthermore, the I-REITs have lower risk; either total risks as measured by standard deviation or systematic risks as measured by beta when compared to the C-REITs. According to the Sharpe index, both REITs are unable to outperform the market indices. Meanwhile, by using the Treynor index, both REITs are able to outperform the market benchmarks. Moreover, I-REITs perform better than C-REITs for both risks adjusted measurements. However, based on the Jensen index, both REITs do not only have a similar performance with that of the market benchmarks, but also with one another. In addition, investors may enjoy more diversification benefits if equities are combined with the I-REITs instead of the C-REITs, as the correlation between the I-REITs and the market benchmarks is lower than that of the C-REITs.

Keywords: *C-REITs, I-REITs, Performance, Diversification, Malaysia.*

Introduction

The Malaysian capital market provides investors with a wide range of investment alternatives, including the real estate market. Investment in real estate can be in the form of unsecuritised or securitised real estate. For unsecuritised real estate investment, investors may invest directly in real estate by purchasing the actual property, such as residential or commercial buildings. On the contrary, securitised real estate or indirect real estate investment involves the purchasing of property stocks or Real Estate Investment Trusts (REITs). Both groups of securitised real estate are listed under different sectors of the Bursa Malaysia, although the underlying assets of both securitised real estate markets are almost indistinguishable.

A REIT is a fund or a trust that owns and manages income-producing commercial real estate such as shopping complexes, hospitals, plantations, industrial properties, hotels and office blocks. It is a collective investment vehicle where funds from various investors are pooled together and invested in the funds with a specific investment objective. These funds will be invested in a portfolio of income-generating properties that consists of real estate assets or real estate-related assets. Apart from these assets, REIT funds are also allowed to be invested in other types of assets, such as liquid assets, asset-backed securities as well as non-real estate related assets. Thus, REITs offer investors with an alternative transparent, liquid vehicle to invest in a diverse portfolio of professionally managed income-generating real estate. Since many retail investors are not able to invest directly in real estate, REITs could provide a platform for them to invest in high value real estate assets or real estate-related assets which enable them to diversify their investment portfolio and gain better returns.

In addition, investors who are keen to invest in the property market may enjoy a wide range of benefits offered by REITs. These benefits include greater diversification, liquidity, professional real estate management, affordability, stable returns and potential capital appreciation. REITs' stocks could be considered as a low-cost investment that is publicly traded and allows investors to carry out transactions, either to buy or sell, at their convenience (Brounen & Eichholt, 2003). With the availability of REITs, it is easier for investors to participate in the real estate market, which may improve their investment performance (Chen et al., 2005). Apart from that, REITs also provide the opportunity for investors to incorporate real estate assets in their investment portfolios (Kuhle et al., 1986). Therefore, although the underlying assets for both Conventional REITs (C-REITs) and Islamic REITs (I-REITs) are similar, they have different features that make them appear like an alternative securitised real estate investment to each other. Hence, both groups offer different potential risks and rewards to their investors.

It is important for the investors to have a diversified portfolio by combining several asset classes in an investment portfolio, in order to reduce the overall investment risk. If diversification benefits exist, then the correlation between the C-REITs and the I-REITs with the market indices, the KLCI and the EMAS, would be less than one. It would be better to have lower correlation values as it would indicate greater diversification benefits. Hence, it is vital to find out whether these two REITs stocks are able to provide a lower risk reduction through diversification. Therefore, this study adds to the REITs performance literature and evaluates the extent of diversification benefits between the C-REITs and the I-REITs by employing both the latest sample and comprehensive measurements.

The rest of the paper proceeds as follows. Section two reviews the relevant literature and section three describes the data and research methods used in the study. The empirical results are discussed in section four, while section five concludes the study.

Literature Review

A number of studies have analysed the performance of REITs by using various performance measurements such as the average returns, standard deviation, coefficient of variation and for the risk-adjusted performance measures of the Sharpe (1966) index, the Treynor (1965) index and the Jensen (1968) index. The documented analyses on the securitised real estate performance are conducted either based on the listed REITs or the property stocks on the stock exchanges or the REIT index or property index available in the stock market. Most of the studies are conducted in United States (US) (Smith & Shulman, 1976; Titman & Warga, 1986; Ross & Zisler, 1991; Mueller & Mueller, 2003; Chen et al., 2005; Hung et al., 2008), but there are a few studies completed in other countries, such as Australia (Newell & Keng, 2005), Canada (Anchour et al., 1984), and Singapore (Liow, 2001).

The literature available on the empirical investigation of REITs' performance in the Malaysian context is very limited. Although these studies (Newell et al., 2002; Ibrahim & Ong, 2008; Hamzah & Rozali, 2010; Lee & Ting, 2009; Ong et al., 2012; Aik, 2012; Low & Johari, 2014) are on securitised real estate in Malaysia, they have reported mixed findings related to the performance of REITs or property stocks. Generally, the issues related to these studies were the sample size, the study period, the selection of the market benchmark and the limited literature on the comparative performance between REITs and property stocks. Most of the studies analysed the performance of Listed Property Trusts (LPTs) or REITs based on three or four LPTs. This could be due to the limited data available during the study period. Thus, this study examines all REITs and property stocks available in the Main Market of Bursa Malaysia, in order to better represent the performance of securitised real estate in Malaysia.

Besides investigating the performance of REITs, previous studies also focussed on the diversification benefits provided by the securitised real estate in a mixed-asset portfolio. There are a few measurements that can be used to measure the diversification benefits, such as the goodness-of-fit and the mean-variance spanning test. However, the widely used measurement in the previous studies is correlation. Based on the correlation measurement, it indicates that the lower the correlation, the greater the diversification benefits that could be achieved. Some of the related literature can be found in US studies (Smith & Shulman, 1976; Brueggeman et al., 1984; Titman & Warga, 1986; Ross & Zisler, 1991; Liang & Webb, 1996; Mueller & Mueller, 2003; Lee & Stevenson, 2005; Chen et al., 2005; Hung et al., 2008), in Australia (Newell & Keng, 2005), in the United Kingdom (UK) (Adair et al., 2006) and in Malaysia (Sing et al., 2002; Newell & Osmadi, 2009; Lee & Ting, 2009). Thus, the inclusion of REITs in a mixed-asset portfolio would provide diversification benefits. As recorded by previous literature, the correlation could be a negative or positive value. However, as long as the correlation value is less than 1.0, there is room for diversification. Therefore, REITs may offer diversification benefits and further provide improvement in the efficient frontier.

Data and Research Methods

The data of this study consists of all REITs whose shares were traded on the Bursa Malaysia during the study period from January 2005 to December 2017. The purpose of the period selection is to find the impact of the improvement of REITs' guidelines on the performance of REITs. The study includes the surviving and non-surviving REITs during the study period, so that the findings would not suffer from survivorship bias. After several conditions were imposed on the data, 17 C-REITs and three I-REITs made up the final sample. To serve as a benchmark, the returns on the KLCI and EMAS were employed as a proxy of the overall market portfolio returns. The risk-free rate is proxied by the three-month Malaysian Government Security (MGS). The source of the data on the market values of REITs, the KLCI, EMAS and the MGS would be from the Datastream database.

In order to measure the performance of REITs and to examine the correlation between the KLCI and EMAS, the methodology employed involving the measurement of returns and risk, the measurement of risk-adjusted performance, and the measurement of correlations. Firstly, the returns and risk of REITs and market portfolio would be estimated from the KLCI and EMAS data, respectively. The rate of returns for each REIT is computed as follows:

$$R_{it} = \frac{P_{i,t} - P_{i,t-1}}{P_{i,t-1}}$$

where;

$$R_{it} = \text{Return of stock } i$$

$$P_{i,t} = \text{Price of stock } i \text{ on day } t$$

$$P_{i,t-1} = \text{Price of stock } i \text{ one period before time } t$$

The return on the benchmark indices, which includes the KLCI and EMAS, is measured as follows:

$$R_{bt} = \frac{I_t - I_{t-1}}{I_{t-1}}$$

where;

R_{bt} = Return on benchmark b on day t

I_t = Market index value on day t

I_{t-1} = Market index value one period before time t

The beta coefficient, which measures the systematic risk of a REITs portfolio, is computed by regressing the returns of each REIT on the returns of the market portfolio, either the KLCI or EMAS, as follows:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$$

where;

R_{it} = Return of stock i

α_i = A constant term

β_i = Beta coefficient of stock i

R_{mt} = Return on the market portfolio

ε_{it} = Error term

The total risks are measured using the standard deviation (σ) where σ is the square root of variance (σ^2). The measurement of variance is as follows:

$$\sigma_i^2 = \frac{\sum_{t=1}^T (R_{it} - R_i)^2}{T-1}$$

where;

σ_i^2 = Variance of stock i

R_i = Average monthly return of stock i

Secondly, the risk-adjusted performances of the portfolio that are normally used are the Sharpe index, the Treynor index and the Jensen index. In measuring these three indices, it is generally assumed that stocks are priced based on the Capital Asset Pricing Model (CAPM). According to the CAPM, the expected rate of return is a composition of the risk-free rate plus

the systematic risk (beta), multiplied by the market risk premium (expected market returns minus risk-free rate). The Treynor index and the Sharpe index are based on the ratio of return to risk, while the Jensen index is a measurement of a relative performance based on the Security Market Line (SML). The Sharpe index (SI) measures investment performance using total risk:

$$SI = \frac{\bar{R}_i - \bar{R}_f}{\sigma_i}$$

where;

- \bar{R}_i = Average return for stock i
- \bar{R}_f = Average risk-free rate of return
- σ_i = Standard deviation for stock i

The Treynor index (TI) has developed a measure of investment performance by using systematic risk:

$$TI = \frac{\bar{R}_i - \bar{R}_f}{\beta_i}$$

where;

- TI = Treynor index
- \bar{R}_i = Average return for stock i
- \bar{R}_f = Average risk-free rate of return
- β_i = Systematic risk for stock i

The Jensen index (1968) has developed an ex-post alpha measure to determine the size of the excess returns achieved by a portfolio:

$$R_{pt} - R_{ft} = \alpha_p + \beta_p (R_{mt} - R_{ft}) + e_{pt}$$

where;

- R_{pt} = Return of portfolio in period t
- R_{ft} = Risk-free rate of return in period t
- R_{mt} = Return on market portfolio in period t
- e_{pt} = Random error term
- α_p = Parameters estimated from the regression model or better known as Jensen's α

β_p = Parameters estimated from the regression model

Thirdly, the correlation between the REITs with the market indices, which are the KLCI and EMAS, are estimated in order to achieve the final objective of this study. The value of the correlation between the two assets would be between -1.0 to 1.0. The lower the correlation value, the greater the diversification benefits will be, that could be offered. The correlation between asset i and asset j is measured as follows:

$$\rho_{ij} = \text{Cov}(R_i, R_j) / (\sigma_i * \sigma_j)$$

where;

$\text{Cov}(R_i, R_j)$ = Covariance of returns between i and j

σ_i = Standard deviation of returns on i

σ_j = Standard deviation of returns on j

Results and Findings

Table 1 summarises the monthly returns, standard deviation and beta of the Islamic and Conventional REITs as compared to the market benchmarks, the KLCI and the EMAS. Both REITs recorded lower average monthly returns than the market benchmarks. The Islamic REITs were able to generate slightly better monthly returns than that of the conventional REITs. The average monthly standard deviation of the conventional REITs is higher than that of the Islamic REITs. This indicates that the conventional REITs are exposed to greater risks as compared to the Islamic REITs. The findings are as expected, given that the Islamic REITs are restricted to invest in Shariah compliance funds only. However, both REITs have greater risk compared to the KLCI and the EMAS. Aik (2012), Ong et al. (2012), and Lee and Leong (2015) also revealed that REITs have a higher volatility than that of the KLCI. The average beta value of the Islamic REITs is lower than that of the conventional REITs. This suggests that Islamic REITs are less sensitive to changes in the market as compared to the conventional REITs. Moreover, both REITs have beta values of less than 1.0, and this shows that the systemic risk of REITs is lower than that of the market. This concurs to the results reported by Hamzah et al. (2010), Ong et al. (2012), and Lee and Leong (2015). The lower the volatility of the REITs than that of the market, reflects the defensive characteristics of the REITs and the stable income generation from rental income of the underlying property.

Table 1: Monthly returns, standard deviation and beta of the I-REITs and C-REITs

	Returns		Standard Deviation		Beta	
	I-Reits	C-Reits	I-Reits	C-Reits	I-Reits	C-Reits
Al-Akqar Healthcare Reit*	0.0034	-	0.0397	-	0.2572	-
Al-Hadharah Boustead Reit*	0.0089	-	0.0485	-	0.4246	-
Amanah Harta Tanah Pnb	-	0.0019	-	0.0322	-	0.3372
Amanah Harta Tanah Pnb2	-	0.0092	-	0.0541	-	0.4354
Amanahraya Reit	-	0.0003	-	0.0336	-	0.2444
Amfirst Property Trust	-	0.0203	-	0.0481	-	0.2327
Amfirst Reit	-	-0.0007	-	0.0362	-	0.4120
Atrium Reit	-	0.0021	-	0.0412	-	0.6920
Axis Reit	-	0.0055	-	0.0538	-	0.6741
Capitamalls Malaysia Trust	-	0.0074	-	0.0463	-	0.3750
Hektar Reit	-	0.0035	-	0.0511	-	0.5295
Pavilion Reit	-	0.0061	-	0.0363	-	0.1226
Quill Capita Trust	-	0.0008	-	0.0593	-	0.5931
Starhill Reit	-	0.0020	-	0.0361	-	0.4262
Sunway Reit	-	0.0088	-	0.0400	-	0.5693
Tower Reit	-	0.0025	-	0.0475	-	0.6792
Uoa Reit	-	0.0031	-	0.0438	-	0.4268
Al-Salam Reit*	-0.0004	-	0.0278	-	-0.1035	-
Igb Reit	-	0.0050	-	0.0372	-	0.3100
Kip Reit	-	-0.0117	-	0.0216	-	-0.1750
Average Reit	0.0040	0.0039	0.0387	0.0423	0.1928	0.4050
Klci	0.0050		0.0342		1	
Emas	0.0055		0.0366		1	

The results in Table 2 show the risk-adjusted performance of both the REITs by using the Sharpe index, the Treynor index and the Jensen index.

Table 2: Sharpe index, Jensen index and Treynor index of the I-REITs and C-REITs

	Sharpe Index		Treynor Index		Jensen Index	
	I-Reits	C-Reits	I-Reits	C-Reits	I-Reits	C-Reits
Al-Akqar Healthcare Reit*	0.0248	-	0.0038	-	0.5734	-
Al-Hadharah Boustead Reit*	0.1328	-	0.0152	-	1.2292	-
Amanah Harta Tanah Pnb	-	-0.0158	-	-0.0015	-	0.1217
Amanah Harta Tanah Pnb2	-	0.1215	-	0.0151	-	1.2303
Amanahraya Reit	-	-0.0629	-	-0.0087	-	-0.1742
Amfirst Property Trust	-	0.3735	-	0.0772	-	1.8307*
Amfirst Reit	-	-0.0884	-	-0.0078	-	-0.8808
Atrium Reit	-	-0.0092	-	-0.0005	-	-0.0057
Axis Reit	-	0.0556	-	0.0044	-	0.4696
Capitamalls Malaysia Trust	-	0.1074	-	0.0133	-	1.2843
Hektar Reit	-	0.0200	-	0.0019	-	0.2540
Pavilion Reit	-	0.0989	-	0.0293	-	1.3395
Quill Capita Trust	-	-0.0281	-	-0.0028	-	-0.2767
Starhill Reit	-	-0.0143	-	-0.0012	-	-0.1271
Sunway Reit	-	0.1592	-	0.0112	-	1.7036*
Tower Reit	-	0.0010	-	0.0001	-	-0.2518
Uoa Reit	-	0.0153	-	0.0016	-	-0.0938
Al-Salam Reit*	-0.0985	-	0.0264	-	0.2331	-
Igb Reit	-	0.0680	-	0.0082	-	0.9615
Kip Reit	-	-0.6548	-	0.0809	-	-1.361
Average Reit	0.0197	0.0086	0.0151	0.0130	0.6786	0.3544
Klci	0.0742		0.0030		-	
Emas	0.0826		-		-	

Based on the Sharpe index, both REITs underperformed the market benchmarks which was due to the higher total risk, as measured by standard deviation. The lower total risk of the Islamic REITs has enabled them to perform better than that of the conventional REITs. The result is in line with those of Kok and Khoo (1995), Hamzah et al. (2010), and Aik (2012), who found REITs underperforming from the benchmarks. Meanwhile, based on the Treynor index, both the REITs are able to outperform the market benchmark. The result shows that the performance of the Islamic REITs is better than that of the conventional REITs. The different performance results between these two risk-adjusted measurements could be due to

the exclusion of the unsystematic risk in the measurement of the Treynor index. All the Islamic REITs register insignificant positive alpha values. Meanwhile, only two (AHP2 and Tower REITs) out of 17 of the conventional REITs recorded significant positive alpha values, which indicates that they are able to outperform the market. The remaining conventional REITs are found to register positive and also negative alpha values, but they are not significant. Based on the rankings, the Islamic REITs are better as they provide higher alpha values compared to the conventional REITs. However, we cannot conclude convincingly that the performance of the Islamic REITs is better than the performance of the conventional REITs. Moreover, both REITs equally perform with those of the market benchmarks.

Table 3 represents the correlation analysis between the Islamic REITs, the conventional REITs, the KLCI and the EMAS. The results show that both REITs have positive correlation values which are less than 1.0. The correlation values of the Islamic REITs with the both market benchmarks are less than 0.3. Meanwhile, the correlation values for the conventional REITs with the KLCI and the EMAS are 0.58 and 0.62 respectively, which are higher than that of the Islamic REITs. This could be due to less restrictions in terms of their investment choices. Consequently, this implies that the Islamic REITs do offer higher diversification benefits in a portfolio compared to the conventional REITs. Prior evidence of the diversification benefits of REITs are consistent with Newell and Osmadi (2009), and Lee and Ting (2009).

Table 3: Correlation Analysis

	KLCI	EMAS	I-Reits	C-Reits
KLCI	1			
EMAS	0.99	1		
I-REITs	0.32	0.33	1	0.39
C-REITs	0.58	0.62	0.39	1

Conclusions

This study investigates the performance of Islamic and conventional REITs in Malaysia. The I-REITs were able to generate slightly higher average monthly returns than that of the C-REITs. Furthermore, the I-REITs have lower risk, either total risks, as measured by standard deviation or systematic risks, as measured by beta and compared to the C-REITs. According to the Sharpe index, both the REITs are unable to outperform the market, the KLCI and the EMAS. Meanwhile, by using Treynor index, both the REITs are able to outperform the market benchmarks. Moreover, the I-REITs perform better than the C-REITs for both risk adjusted measurements. However, based on the Jensen index, both the REITs do not only have a similar performance with that of the market benchmarks, but also with one another. Furthermore, the investors may enjoy more diversification benefits if equities are combined with the I-REITs instead of the C-REITs, as the correlation between the I-REITs and the



markets benchmarks is lower than the correlation between the conventional REITs with the market benchmarks. Future study should explore the development of the REITs index that comprises all REITs, that can be used for an aggregate measure for REITs for more informed property investment decision making.

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