
RISK AND RETURN PROFILE OF LISTED PROPERTY COMPANIES IN ASIAN LESS DEVELOPED MARKETS

*Nurul Afiqah Azmi, Ahmad Tajjudin Rozman, Muhammad Najib Razali & Hishamuddin Mohd Ali

Department of Real Estate, Faculty of Geoinformation and Real Estate (FGRE), Universiti Teknologi Malaysia, 81310 UTM Johor Bahru, Johor
**Email: fiqazmi27@yahoo.com.my*

Abstract

This paper examines the risk and return profile of listed property companies in Asian developed property markets. The less developed property market consists of Philippines, Sri Lanka, China, India, Indonesia, and Vietnam. This paper was conducted over the period of January 1994 to December 2014. The data was used in form of monthly price indices from January 1994 to December 2014 for listed property companies, shares and bonds for all countries. This research seeks for the property risk and return performance using empirical analysis such as risk adjusted performance analysis, correlation analysis, efficient frontier and asset allocation. Based on the portfolio management theories, Sri Lanka and Philippines are the two countries showed property outperformed bonds and underperformed shares. Meanwhile listed property companies Indonesia, China, India and Vietnam were underperformed shares and bonds. The findings are useful as guidance for Asian and International investor to invest in Asian less developed property market.

Keywords: *Listed property companies, Asian property market, Less Developed Countries, Risk and Return.*

1.0 INTRODUCTION

This paper study about the performance of listed property companies (LPCs) by analyse its annual return, annual risk, Sharpe ratio and risk return ratio on Philippines, Sri Lanka, China, India, Indonesia and Vietnam. These six countries are considered as less developed property market in Asia (Nguyen, 2012). As highlighted by JLL (2014), China, Philippines, Indonesia and India categorized under semitransparent property market. However, Vietnam categorized under low transparency property market. The objectives of this study cover the following:

1. To analyse the performance of less developed property market in Asia especially on listed property companies.
2. To assess the nature of the time varying conditional correlation of the listed

property companies market return between countries over time.

The study is focus on listed property companies in these property markets, thus makes two important contributions. First, to enhance knowledge of investing by using portfolio management theories in Asian less developed listed property companies that has not received sufficient attention. Particularly with their time varying conditional risk and return performance, diversification potential and value added (Liow, 2007). The significant on studying these countries because it has very good potential property investment for investors to invest their money and business in these countries. Indonesia, India and China have the largest human resources to enhance the business of manufacturing, trading and industrialization. Sri Lanka, Vietnam and Philippines also have enhancing their economic market into a competitive market in the future (Nguyen, 2011a). It is said that good investment

always come in Asia especially in less developed market (Razali, 2014). Second, the result will contribute to the relationship between the mixed asset classes markets within each country and empirical analyses are useful to the local investor. Hence, to present background for this study, section 2, 3 4 and 5 provided. Section 2 reviews the literature on position of listed property companies in context of local market. Section 3 describes the data sources and methodology use in this study. Section 4 outlines the result and discussion include risk adjusted analysis, diversification potential and efficient frontier analysis. Section 5 discusses property implications and conclusion.

2.0 LITERATURE REVIEW

Property investment can be classified into two types which are direct property investment involving physical asset and indirect property investment via stock market. In this study, the main concern here is the indirect property investment that entails listed property companies in the stock market. This investment comprehends the shares in property companies trading in the stock market (Chin et al., 2007). Analysing the risk and return is the ordinary method to measure the performance of listed property companies (LPCs). Practically, investing in LPCs is quite riskier than direct investment because of its nature that being traded daily and its return change over the time (Liow et al., 2009). This phenomenon has been revealed by Nguyen which discovered the downturn performance of the LPCs in the post global financial crisis (GFC) period across the market with regard to decreased returns and increased risk (Nguyen, 2011a).

This study will compare the performance of LPCs within the mixed asset portfolio in the scope of six countries that have been described. As accredited by the Stevenson (2004), the study generally supports the view that real estate can play an essential role in a well-structured mixed asset portfolio since it is a major asset class in global. Mixed asset portfolios consist of bonds, stocks and cash (Rehring, 2012; Hoesli et al., 2004).

Subsequent from the previous research, the analysis of the performance of LPCs begins with conducting risk adjusted performance analysis and Sharpe ratio analysis to measure risk return analysis (Razali, 2015; Ting, 2002). The second step is to examine the diversification benefits using the correlation analysis between the variables. The variable consists of shares, bonds and LPCs (Ting, 2002; Nguyen 2011b). Further analysis is to assess the optimal combination of asset classes in the mixed-asset portfolio investment using the efficient frontier (Nguyen, 2011b).

Previous research such as Nguyen had studied about less emerging property market in Asia such as Indonesia, China, Sri Lanka, Philippines and India together with emerging property markets and developed property markets (Nguyen, 2012). Recently, these less emerging property market also have risen their awareness about development in the property market in order to attract the attention of the global investors. This study also had been analysed by the other fellow researchers like Liow and Adair (2009), Newell et al. (2009) and Nguyen (2011b).

Razali (2014) has investigated that Malaysia listed property companies is not an attractive portfolio between January 1998 and August 2012. This is supported by the Nguyen (2012); Liow and Adair (2009); Newell, Wing, Kei, and Hiang (2009), common Asian listed property companies showed last position compared to other asset classes. Meanwhile, the Philippines listed property companies have been detected increasing in growth across the country and undergo expansion in terms of market size and sophistication. In local context, property securities in the Philippines underperformed bonds and stock in terms of risk adjusted returns and absolute. With negative Sharpe ratio (-0.085) for study period January 1999 to May 2010 (Nguyen, 2011c). However, study conducted by Razali shows LPCs in Philippines have positive Sharpe ratio (0.31) from January 1998 to August 2012 (Razali, 2015). However, the Philippines' LPCs do not outperform its shares and bonds market (Newell, 2009). Furthermore, Vietnam property securities underperformed stocks over the period August 2003 to August 2009 (Nguyen, 2010). From the view of local and foreign investors (UK, US and Australia) in the Vietnam,

it is clear that Vietnam's LPCs gives more diversification benefit in mixed-asset portfolio investment rather than Vietnam stock (Nguyen, 2010).

Liow and Adair had examined the risk-adjusted performance of Indonesia listed property companies and the results showed that Indonesia listed property companies over performed shares while underperformed bonds (Liow and Adair, 2009). This finding is supported by Newell et al. (2009) where Indonesia LPCs shows negative result from the Sharpe ratio analysis, negative average annual return (-11.93%) and annual risk (85.32%) over the period of January 1998 to March 2008. Correlation score of property securities with stocks showed $r = 0.49$ indicates high diversification potential. Thailand property securities have remarkable performance and it outperformed stocks in Sharpe ratio point of view and indicates no diversification potential with stocks (Newell et al., 2009). Meanwhile study done by Razali (2015) together with Liow and Adair (2009) have revealed that Thailand shows negative Sharpe ratio score and underperformed share and bond performance. In addition, Singapore shows positive Sharpe ratio (0.02) over period January 1998 to August 2012 (Razali, 2015). Therefore, this study is necessary because it will analyse different asset classes in the mixed asset portfolio using the same empirical analysis similar to previous research. This study will extend the knowledge on portfolio management theory regarding to study on less developed property market. The less developed market may have unexplored investment potential based on the empirical analysis. The study also can enhance and improve decision making process before investing in those countries.

3.0 DATA SOURCE AND METHODOLOGY

The data used in this study enclose of monthly price indices from January 1994 to December 2014 for mixed asset for Indonesia, the Philippines, Vietnam, China, India and Sri Lanka. As tabulated in Table 1, closing monthly price indices for mixed asset can be used as a benchmark to measure the performance of the asset classes.

This study will examined the performance and significant of listed property companies in a mixed asset portfolio. All data series of monthly price indices in currency obtain from DataStream and Bloomberg over the period of January 1994 to December 2014. The local currencies from each country were used as to avoid the currency exchanged fluctuation from time to time as this data use time series data. Cash used to determine the risk free rate for each country.

For the methodology, average annual return, average risk, risk or return ratio, risk adjusted return, correlation analysis, efficient frontier and asset allocation will be used to measure the performance and the significant of listed property companies on the selected countries. Sharpe ratio analysis is a measurement of risk adjusted performances to rank mixed asset in the portfolio. Larger Sharpe ratio score indicates better performances. Meanwhile correlation analysis is one of the ways to measure diversification potential between asset classes. Low correlation indicates high potential diversification between two assets. Otherwise high correlation indicates low potential diversification.

In addition, efficient frontiers and asset allocation use to illustrate the combination of mixed asset which can draw the riskiness and return that can be provided from each portfolio. Efficient frontier analysis will generate important information to get a better picture about risk and expected return level. Usually, investors always desired to invest at minimum risk level portfolio with highest expected return.

4.0 RESULT AND DISCUSSION

For the listed property companies, bonds and stocks index series, returns, risk and risk adjusted returns (Sharpe ratio) were assessed over January 1994 to December 2014. Performance analyses prepared in local currency, as international investors usually implement their own currency hedging strategies to control for currency risk (Newell et al., 2009). Diversification benefits for mixed asset portfolio were assessed using correlation analysis.

Table 1: Research data for shares, property, bonds and cash

Country	Share	Property	Bond	Cash
China	Shanghai Stock Exchange a Share	China Data Stream Real Estate	China Government Bond Generic Bid Yield 10 Year	China Demand Deposit Rate
India	National stock exchange of India	India DataStream Real Estate	India Govt Bond Bid Yield 10 Year	T-Bill: 91 Day Au C Yield
Indonesia	IDX Composite	Indonesia DataStream Real Estate	Indonesia Government Bond Generic Bid Yield 5 Year	Thomson Reuters Indonesian Rupiah 3 Month Deposit
Sri Lanka	Sri Lanka Stock Market Colombo All Share	Sri Lanka DataStream Real Estate	Thomson Reuters Sri Lanka Government Benchmark Bid Yield 12 Month	Sri Lanka Treasury Bill 3 month
Philippines	Philippines Stock Exchange	Philippines Stock Exchange Property	PDEX PDST-F Fixing 10 year	Philippine treasury Bill 91Day
Vietnam	Ho Chi Minh Stock Exchange Vietnam Index	Thomson Reuters Vietnam Real Estate	Vietnam Bond Index	Vietnam Refinance Rate

4.1 Risk-Adjusted Returns

The risk adjusted analysis of shares, bonds and property companies for sample period are summarized in Table 2.

The results indicate that LPCs for China, India and Indonesia performed poorly from January 1994 to December 2014 as compared to other asset classes. Meanwhile listed property companies in Sri Lanka and the Philippines underperformed shares and over performed bonds

asset class. However for Vietnam, bonds are the most performed compared to shares. Asian less developed listed property companies showed various result in their mixed asset. China, India, Indonesia, Sri Lanka and the Philippines listed property companies showed annual return of (4.86%), (-21.19%) (-9.59%), (7.85%) (5.35%) which were significantly lower than that shares (5.16%), (10.52%), (11.57%), (10.14%) and (5.62%) respectively.

Table 2: Mixed asset portfolio risk adjusted analysis: January 1994 – December 2014

Country	Assets	Annual return	Annual risk	Risk/ Return ratio	Sharpe Ratio	Rank
China	Shares	5.16	37.22	7.22	0.14	2
	Property	4.86	52.39	10.78	0.09	3
	Bonds	0.40	1.629	4.06	0.21	1
India	Shares	10.52	29.01	2.76	0.35	1
	Property	-21.19	67.81	-3.20	-0.31	3
	Bonds	0.49	5.796	11.96	0.02	2
Indonesia	Shares	11.57	28.70	2.48	0.38	1
	Property	-9.59	67.29	-7.02	-0.15	3
	Bonds	0.77	9.08	11.77	0.02	2
Sri Lanka	Shares	10.14	25.33	2.49	0.38	1
	Property	7.85	36.15	4.60	0.20	2
	Bonds	0.81	12.85	15.87	0.02	3
Philippines	Shares	5.62	27.04	4.81	0.19	1
	Property	5.35	35.31	6.59	0.14	2
	Bonds	0.59	14.32	24.67	0.02	3
Vietnam	Shares	12.64	39.85	3.15	0.31	3
	Property	12.42	38.14	3.07	0.31	2
	Bonds	6.13	5.38	0.88	1.06	1

In terms of risk level, countries like China, India, Indonesia, Sri Lanka and the Philippines listed property companies recorded a highest of risk compared to other mixed asset with (52.39%), (67.81%), (67.29%), (36.15%) and (35.31%) respectively. This indicated that even though listed property companies for Sri Lanka and the Philippines showed better performance than the bonds, the risk level for property is the highest level compare to shares and bonds. On the

risk adjusted basis, listed property companies were the worst performing asset classes, with reward to risk and Sharpe ratio. However listed property companies in Sri Lanka, the Philippines and Vietnam showed better performance than shares and bonds. As tabulated in Table 2, the results showed that listed property companies provided unfavourable returns and high annual risk level to investors over the period of the study for Asian less developed countries.

Table 3: Listed property companies correlations: January 1994-December 2014

	LPC/ Share correlation	LPC/ Bond correlation
China	0.99	-0.01
India	0.09	0.01
Indonesia	-0.02	-0.13
Sri Lanka	0.50	-0.01
Philippines	0.02	-0.07
Vietnam	0.24	-0.01

Significant correlation (P < 5%)

4.2 Diversification benefits

The correlation matrix for listed property companies, bonds and shares returns over January 1994 to December 2014 presented in Table 3. The data shows all correlations being statistically significant at less than the 5% level of significance. The strongest diversification benefits was observed between listed property companies and shares for India (0.09), the Philippines (0.02) and Vietnam (0.24) showed low correlation, implying that listed property companies in those countries could certainly offer diversification benefits to both shares and property investors. Otherwise, listed property companies with shares in China (0.99) and Sri Lanka (0.50) showed high correlation implying that listed property companies in those countries indicating limited diversification potential.

On the other hand, as can be seen from Table 3, listed property companies showed low correlation with bonds for all those countries and indicates those countries could offer diversification benefits to property investors.

4.3 Efficient Frontier

Figure 1 shows efficient frontiers of the mixed asset portfolio consisting of listed property companies, bonds and shares over January 1994 – December 2014. This analysis were tested by including property companies with two others assets and without property companies in the portfolio. It can be seen from the graph of efficient frontier analysis showed additional of listed property companies to the portfolio provides only marginal improvement in the efficient frontier for the Philippines and Vietnam. It is supported by the superior risk adjusted performance analysis, whereas the property companies in those countries showed moderate performance. Otherwise for listed property companies in others countries showed static efficient frontier with property and without property. Therefore, in term of portfolio combination, it is clear stated that listed property companies for the Philippines and Vietnam contribute to high return of the portfolio. Meanwhile for China, India, Indonesia and Sri Lanka, the listed property companies in those countries were not affecting the return of the portfolio.

4.4 Asset Allocation

Figure 2 tabulated the asset allocation diagram for mixed-asset portfolio for Asian less emerging market. China and India showed no allocation for property companies from lowest return to highest return due to high risk and low return enhancement. Indonesia and Sri Lanka showed a little allocation for listed property companies in their mixed asset portfolio. Meanwhile for the Philippines, property showed increasing

allocation from the low average return to high average return, from 13% to 34% allocation. This scenario showed same pattern to Vietnam listed property companies with allocation for property gradually increase from the low average return to high average return, from 2% to 56% allocation. Therefore, listed property companies in the Philippines and Vietnam could offer risk reduction and return enhancement in their mixed asset portfolio.

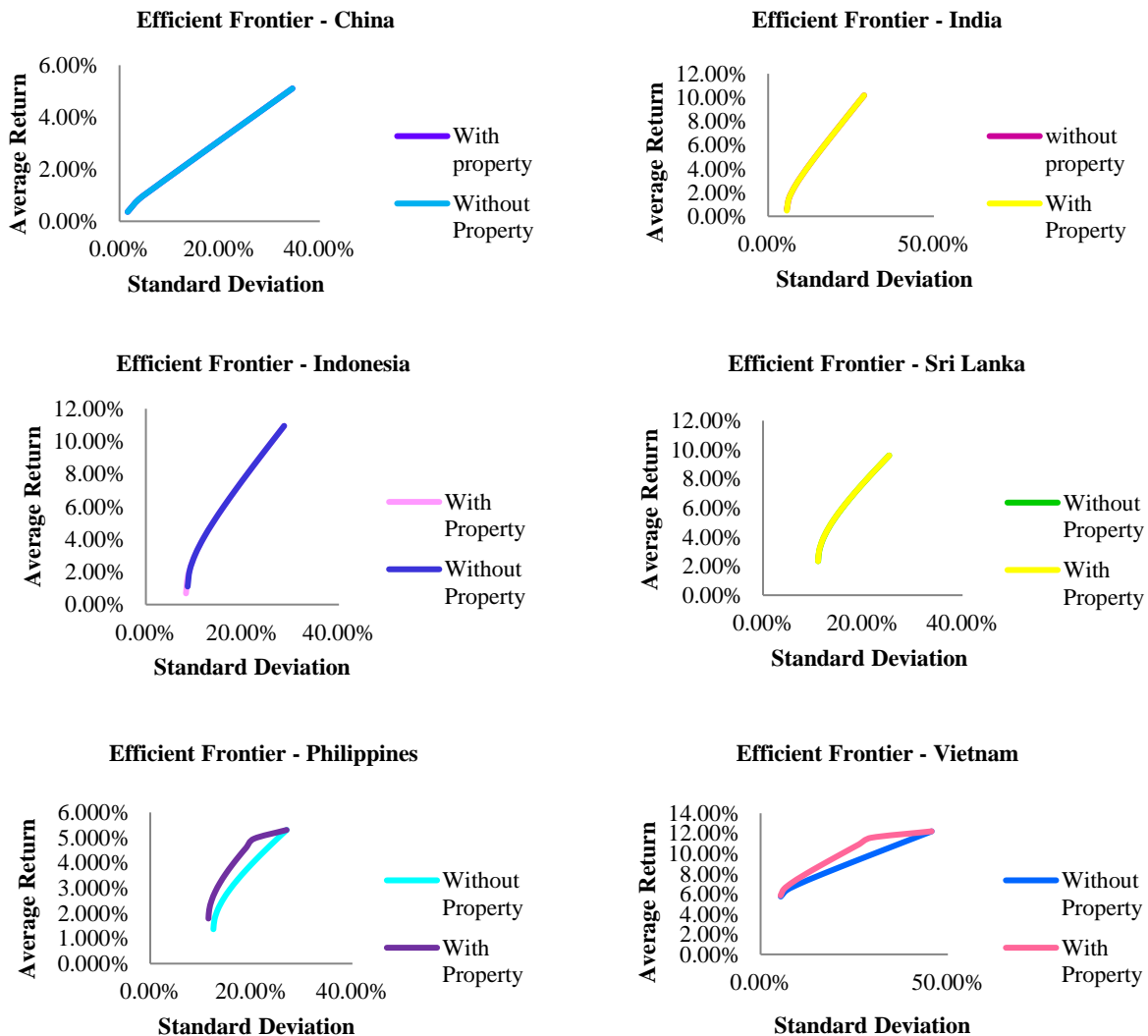


Figure 1: Effect of adding property companies in efficient frontiers: January 1994 – December 2014

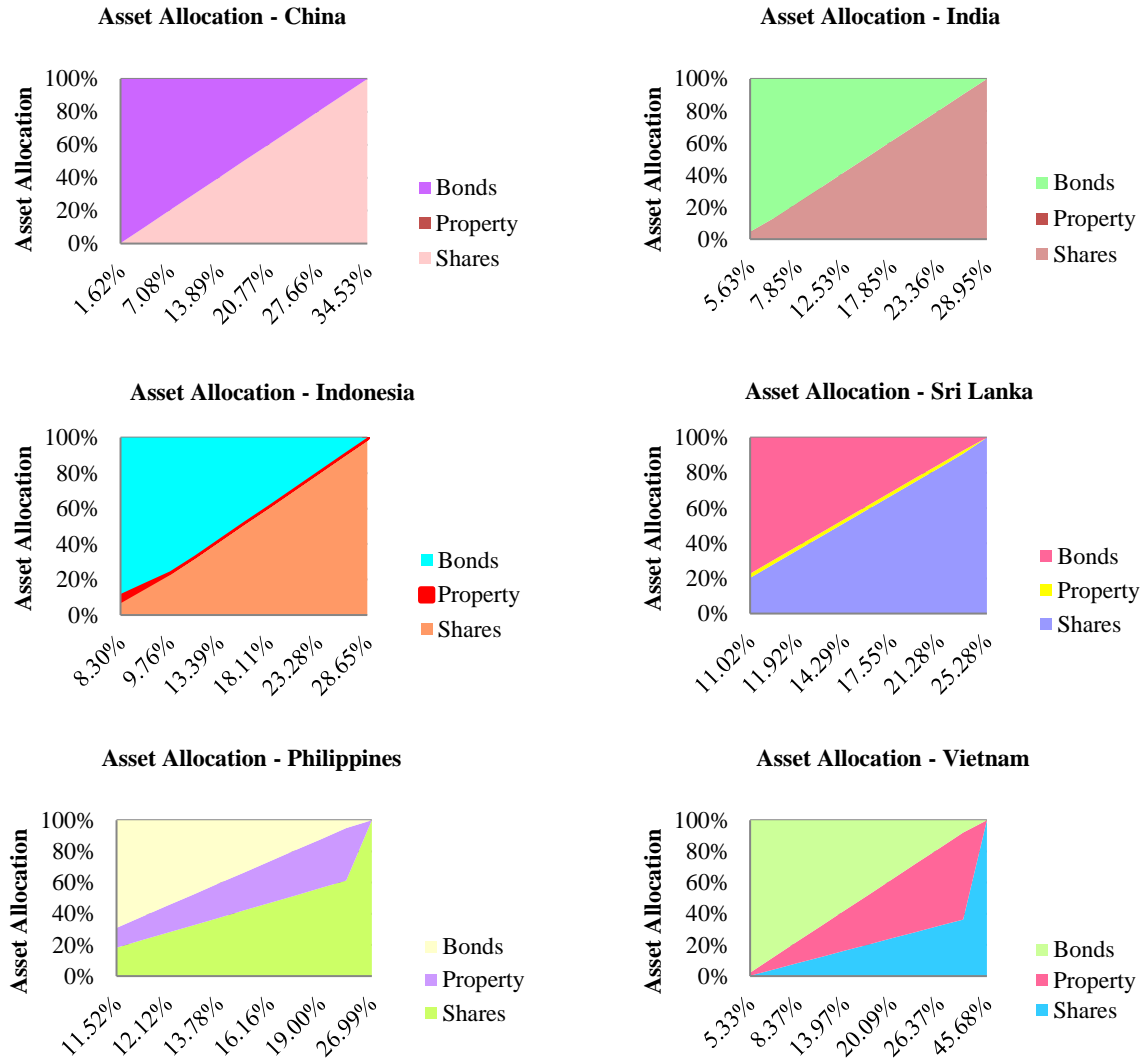


Figure 2: Asset Allocation Diagram for mixed asset portfolio: January 1994 - December 2014

5.0 PROPERTY IMPLICATIONS AND CONCLUSIONS

The growth of property market on Asian countries continues to arise especially in Asia Pacific region. However, the LPCs in less developed countries are not favourable as its offer low return and affiliate with high risk investment. Thus it can be seen that LPCs in these countries are having low quality property portfolio. However, the majority of the LPCs in these countries such as India, Indonesia, Philippines and Vietnam showed good diversification with stock and bonds markets in the domestic level.

The efficient frontier analysis found out that only two countries that have return enhancement and risk reduction characteristics; Vietnam and Philippines. This study showed that Philippines and Vietnam LPCs have good performance compare to the other countries. Investors especially institutional investors that seeking exposure in property investment should consider deeply in investing in less developed countries because it may not give great significant in the portfolio return as well in constructing optimal portfolios. Property can be a profitable investment vehicles if good strategic planning in tackling demand of the stakeholders can be meet.

With all of these results, it is very interesting point to say that these six countries must have a good plan and strategies to enhance the level of competitiveness in property market.

6.0 ACKNOWLEDGEMENTS

The authors would like to express their sincere appreciation to Universiti Teknologi Malaysia and parties involved directly and indirectly.

REFERENCES

- Chin, H., Topintzi, E., Hobbs, P., Mansour, A., & Keng, T. Y. (2007a). *Global real estate securities*.
- Hoesli, M., Lekander, J., & Witkiewicz, W. (2004). International Evidence on Real Estate as a Portfolio Diversifier. *Real Estate REsearch*, 26(2), 1–46.
- JLL. (2014). *Global Real Estate Transparency Index 2014*.
- Liow, K. H. (2007). The Dynamics of Return Volatility and Systematic Risk in International Real Estate Security Markets. *Journal of Property Research*, 24(1), 1–29. doi:10.1080/09599910701297663
- Liow, K. H., & Adair, A. (2009). Do Asian real estate companies add value to investment portfolio? *Journal of Property Investment & Finance*, 27(1), 42–64. doi:10.1108/14635780910926667
- Liow, K. H., Ho, K. H. D., Ibrahim, M. F., & Chen, Z. (2009). Correlation and Volatility Dynamics in International Real Estate Securities Markets. *The Journal of Real Estate Finance and Economics*, 39(2), 202–223. doi:10.1007/s11146-008-9108-4
- Newell, G., Wing, C. K., Kei, W. S., & Hiang, L. K. (2009). The significance and performance of property securities markets in the Asian IFCs. *Journal of Property Research*, 26(2), 125–148. doi:10.1080/09599910903441721
- Nguyen, T. K. (2010). The Significance and Performance of Listed Property Companies in Vietnam. *Pacific Rim Property Research Journal*, 16(2), 221–245.
- Nguyen, T. K. (2011a). *The significance and performance of Asian listed property companies in developed and emerging markets*. University of Western Sydney.
- Nguyen, T. K. (2011b). The Significance and Performance of Listed Property Companies in Asian Developed and Emerging Markets. *Pacific Rim Property Research Journal*, 17(1), 24–47. doi:10.1080/14445921.2011.11104316
- Nguyen, T. K. (2011c). The Significance and Performance of Listed Property Companies in the Philippines. *Pacific Rim Property Research Journal*, 17(2), 260–286.
- Nguyen, T. K. (2012). The volatility spillovers in Asian listed property companies in developed and emerging markets. *Pacific Rim Property Research Journal*, 18(1), 49–65.
- Rehring, C. (2012). Real estate in a mixed asset portfolio: The role of the investment horizon. *Real Estate Economics*, 40(1), 65–95. doi:10.1111/j.1540-6229.2011.00306.x
- Razali, M. N. (2014). *The Significance and Performance of Malaysia Listed Property Companies in Pan-Asian Property Portfolio*. Universiti of Western Sydney.
- Razali, M. N. (2015). The dynamic of returns and volatility of Malaysian listed property companies in Asian property market. *International Journal of Strategic Property Management*, 19(1), 66–83. doi:10.3846/1648715X.2015.1004656
- Stevenson, S. (2004). Testing the statistical significance of real estate in an international mixed asset portfolio. *Property Investment and Finance*, 22(1), 11–24. doi:10.1108/14635780410525126
- Ting, K. H. (2002). *Listed property companies in Malaysia: A comparative performance analysis*. Seventh Annual Pacific Rim Real Estate Society Conference.