STUDY OF FACTORS WHICH INFLUENCE THE RETURN OF REAL ESTATE SECURITY IPO INVESTMENT IN ASEAN COUNTRIES

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Abstract- This study investigates the factors that might influence the returns of real estate security initial public offerings (IPOs) in ASEAN (Association of Southeast Asian Nations) countries by studying property fund IPOs in Thailand and real estate investment trust IPOs in Malaysia and Singapore during 2003 to 2013. The average return of the IPOs is -0.25%. Market return, market capitalization, diversification of the underlying real estate and the use of the underlying real estate do not statistically significantly affect the IPO returns. The duration between the offering date and the first trading date of the IPOs is the only statistically significant determinant of the returns but the impact is negligent. The research results appear to support the existence of market efficiency in the primary market of real estate security and the investment on a real estate security's IPO is not the efficient method for investors to build up their wealth.

Index Terms- ASEAN countries, investment performance, IPO, real state security.

I. INTRODUCTION

Real estate securities including property funds (PFs) and real estate investment trusts (REITs) are issued to investors and the money is used to purchase the real property. Then, the most of return from the real property investment will be distributed to the investors. Consequently, they are alternative instruments for real estate investment for investors and fund raising tools for property developers. The economic growth and cooperation among ASEAN countries induce more demand for capital used for real estate development and make these real estate securities more important.

In this paper, REITs serve as the proxies of real estate securities in Malaysia and Singapore while PFs represent the proxies of real estate securities in Thailand because during the studied period, Thailand has only PFs. REITs are introduced in Thailand from 2014 due to its regulation restriction. The real estate securities in other ASEAN countries are not included because they are either not exist or are rarely found and inactive. The length of study period is 10 years, starting from 2003 to the end of 2013.

The publicly disclosed data including market return, the duration from the day the securities are offered to investors to the first day the securities are trading in the stock exchange, the size of the securities' market capitalization, the diversity of the underlying real estate, the use of the underlying real estate and the countries where the securities are issued are investigated as the factors which might influence the returns of the real estate security IPOs.

The study's major objectives are to examine the influence of the publicly disclosed factors on the returns of real estate security IPOs. The finding, hence, will promote more understanding on these instruments, help investors to improve their investment decision on real estate security IPOs and provide the evidence to support the issue concerning market efficiency in real estate securities.

This research paper has been arranged into 5 sections. The literature review related to this area of study is next to this introduction section. The research's data collection and methodology are described in the third section. The findings of the relationship between the studied factors and the returns of real estate security IPOs in ASEAN countries are in the fourth section and the conclusion of the findings and their implication together with the research's limitations are in the last section.

II. LITERATURE REVIEW

In contrast to considerable studies which are done on common stock IPOs and documents very large returns from the investment, for example, Loughran, T., Ritter, J. R., & Rydqvist, K. (1994) updated in 2010 evidences 16.9% average return on the first trading day, most researches which are done on real estate security's IPOs report much lower return. For examples, Buttimer, R. J., Hyland, D. C., & Sanders, A. B. (2005) discover that REITs' average returns are between 2.47% and 5.57%. Previous study by Wang, K., Chan, S. H., & Gau, G. W. (1992) shows the average loss of 2.82%. For PFs, Buranasiri, J. & Nittayakasetwat, A. (2013) finds a very small difference between the first day closing price and the offering price of PFs in Thailand. These findings in favor of market efficiency theory appear to be more obvious for real estate security IPOs than common stock IPOs. However, for short investment duration, the small abnormal returns on real estate security IPOs might be worth for investing.

For the researches associated with the important determinants of the returns on real estate security IPOs, most of the empirical studies are done on REITs since they are widely issued in many countries while PFs are issued in very few countries.

This paper classifies the literatures into four groups. First group is related to the duration between the offering date and the first trading date of the

securities. The longer duration implies the higher risk and, hence, higher required return by investors. The idea is supported by the evidences of the positive relationship between this factor and the REITs IPOs' returns from many researches, for example, Mok, H. M., & Hui, Y. V (1998), Chan, K., Wang, J., & Wei, K. J. (2004), Dimovski, W. (2010), Tian, L. (2011), and Alexander, J. C., Cheng, P., Rutherford, R. C., & Springer, T. M. (2013). Second group is pertaining to the size of the market capitalization. This factor might be related to the return of real estate securities concerning economies of scale. The importance of this factor is reported in many papers such as Nelling, E. F., Mahoney, J. M., Hildebrand, T. L., & Goldstein, M. A. (1995) which conclude that the size of market capitalization could influence the bid and offered price of REITs, Mueller, G. (1998) which exhibits that the small and the big market capitalization REITs provide higher return than the medium-size REITs and Lin, C., & Yung, K. (2004) which suggest that the size of net asset value might affect REITs' performance. Third group is concerning to the diversification in the underlying real estate. Ro, S. & A. J. Ziobrowski (2011) and Eichholtz, P., Schweitzer, M., & Op't Veld, H. (2000) evidence the higher return of REITs investing in particular type of underlying real property than REITs investing in diversified assets. Nevertheless, Ro, S. & A. J. Ziobrowski (2011) reveal that REITs investing in one type of underlying real property also hold high risk for not being able to diversify the unsystematic risk. Last group is about the nature of the underlying real estate which is pointed out in many researches for its importance on REITs' return. For instance, Clayton, J., & MacKinnon, G. (2003) conclude that REITs' return is sensitive to their underlying real estate and (Kutsuna, K., Dimovski, W., & Brooks, R. (2008) report that the valuation of REITs is affected by their underlying assets.

Though the empirical studies on the last three groups might not be directly done on the return of real estate security IPOs in particular, they are worth to be explored as their data are publicly disclosed and they might influence the return of the real estate security IPOs too.

III. DATA COLLECTION AND RESEARCH METHODOLOGY

A. Data Collection

For this study, the data on real estate security IPOs in Malaysia, Singapore, and Thailand are collected from the prospectuses which could be obtained from Reuters and Bloomberg Database over the period from 2003 to 2013 to investigate the factors that might influence the returns before confronting the impact form the structural change in Thailand's real estate security market in 2014.

B. Research Methodology

The descriptive analysis is done on the data to find out the nature of IPO return of real estate securities. The IPO return is defined as the percentage change of the offering price to the first day closing price and is calculated as follows:

$$R_{1d} = \frac{P_{1d} - P_{IPO}}{P_{IPO}} * 100 \qquad (1)$$

Where

P_{1d} is the closing price of the real estate security on the first trading day and

P_{IPO} is the offering price of the real estate security.

Then, the Ordinary Least Square (OLS) method is applied to disclose the relationship between various independent variables and the dependent variable, the returns of the IPOs, since the studied data contain cross-sectional elements and OLS analysis could show the impact of each independent variable's value on the dependent variable. The returns of real estate security IPOs are regressed on the independent variables based on the following main multiple regression equation:

$$R_{1d} = B_0 + B_1MKT + B_2DAY + B_3LN_CAP + B_4DIVERSE + B_5RESIDENT + B_6MALAYSIA + B_7SINGAPORE + e_i \qquad (2)$$

Where

MKT is market return on the first trading day of the real estate security.

DAY is the number of days between the offering date and first trading date of the real estate security IPOs.

LN_CAP is log of US dollar market capitalization value of each real estate security. The logarithm is applied to eliminate the unusual distribution of the dollar market value.

DIVERSE is the diversification in the underlying real estate; 1= having various type of underlying real estate, 0 = otherwise.

RESIDENT is the use of the underlying real estate; 1= the underlying real property is used for residential purpose, 0 = otherwise.

MALAYSIA is the country where the security is issued; 1= Malaysia, 0 = otherwise.

SINGAPORE is the country where the security is issued; 1 = Singapore, 0 = otherwise.

However, in order to investigate the relationship insight, different regression analysis is applied. First, each independent variable is tested against the IPO return one by one under OLS regression analysis. Then, market return on the first trading day is used as the control variable and each variable will be retested under OLS regression one by one to ensure that the impact from each variable on the return of the real estate security IPO is not influenced by the market sentiment. Next, to analyze in broad picture, all independent variables are put into the model and tested. The dummy variables for countries are also added to verify whether the IPOs' returns are

dependent on the country where the IPOs are issued. Last, stepwise regression analysis is employed. Under this method, the independent variables which do not statistically significantly increase the R-square to the model will be eliminated. Consequently, only important factors will come out in the best model.

IV. FINDINGS

Table I reveals that in ASEAN market, the average return from real estate security IPO is -0.25%. The second largest group in quartile 2 provides highest return followed by those with highest market capitalization in the first quartile, smallest market capitalization in the fourth quartile, and those in the third quartile at 2.09%, 0.39%,-1.11%, and -1.19% respectively. In average, standard deviation is 13.39%.Those in the third quartile has highest standard deviation, followed by those in the second quartile, the first quartile, and the fourth quartile at 17.54%, 15.53%, 10.11% and 5.01%, respectively.

Table I. Average return and standard deviation of real estate security IPO's returns in Malaysia, Singapore, and Thailand during 2003-2013, ranked from the group with the highest market capitalization (Quartile 1) to the group with the lowest market capitalization (Quartile 4).

	Average real estate security IPO's return	Standard deviation
Quartile 1	0.39%	10.11%
Quartile 2	2.09%	15.53%
Quartile 3	-1.11%	17.54%
Quartile 4	-1.19%	5.01%
Total	-0.25%	13.39%

Sources: Bloomberg and Reuter Database

Table II shows that the IPO's average return in Thailand is the highest at 0.3% but standard deviation is the lowest at 7.98% while for Singapore and Malaysia, the IPO's average returns are 0.04% and -2.15% and the standard deviations are 17.78% and 14.21%, respectively.

Table II. Average return and standard deviation of real estate security IPO's returns in Malaysia, Singapore, and Thailand during 2003-2013, grouped by countries of issuance.

Country	Number	Average real estate security IPO's return	Standard deviation
Malaysia	14	-2.15%	14.21%
Singapore	26	0.04%	17.78%
Thailand	34	0.30%	7.98%
Total	74	-0.25%	13.39%

Sources: Bloomberg and Reuter Database

Table III exhibits that the IPOs of the real estate securities with diversified underlying real property have average return and standard deviation of 2.68% and 11.20% correspondingly. Those with non-diversified underlying assets have poorer performance. Their average return and standard deviation are -0.94% and 13.77%.

Table III. Average return and standard deviation of real estate security IPO's returns in Malaysia, Singapore, and Thailand during 2003-2013, grouped by the diversification of the underlying real estate.

Underlying real estate	Number	Average real estate security IPO's return	Standard deviation
Diversified	14	2.68%	11.20%
Non-diversified	60	-0.94%	13.77%
Total	74	-0.25%	13.39%

Sources: Bloomberg and Reuter Database

Table IV reports that the IPOs of the real estate securities with underlying property used for residential purpose have average return and standard deviation of -3.75% and 5.93% while those with underlying property used for residential purpose have less negative average return but higher standard deviation of -0.05% and 13.67% respectively.

Table IV. Average return and standard deviation of real estate security IPO's returns in Malaysia, Singapore, and Thailand during 2003-2013, grouped by the use of underlying real estate.

Use of underlying real estate	Number	Average real estate security IPO's return	Standard deviation
Residential	4	-3.75%	5.93%
Non-residential	70	-0.05%	13.67%
Total	74	-0.25%	13.39%

Sources: Bloomberg and Reuter Database

For regression analysis, when each independent variable is regressed against the IPO return of real estate securities in Panel A of Table 5, only the coefficient of the number of days between the offering date and first trading date of the real estate security IPOs in Model 2 is statistically significant ($p<0.05$) Nevertheless, the impact to the return is very small at -0.01% for each one additional day and R-square is only 6.1%. Other factors show no statistically significantly impact on the IPO return.

Panel B in Table V shows that when the data is regressed by using market return as a control variable, the results are quite the same. Only the coefficient of the number of days between the

offering date and first trading date of the real estate security IPOs in Model 6 is statistically significant ($p<0.05$). The impact to the return is rather small at -0.01% for each one additional day and R-square is 7.9%. Other factors show no statistically significantly impact on the IPO return.

Panel C in Table V suggests that when all factors are regressed together against the IPO return, the results still appear very similar. Only the coefficient of the number of days between the offering date and first trading date of the real estate security IPOs in Model 10 of Panel C in Table V is statistically significant ($p<0.05$). The impact to the return is very small at -0.01% for each one additional day and R-square is only 10.8%. Other factors show no statistically significantly impact on the IPO return. When stepwise method is used to select the important variable in Model 11, still, only the coefficient of the number of days between the offering date and first trading date of the real estate security IPOs is statistically significant ($p<0.05$). The impact to the return is the same very slightly at -0.01% for each one additional day and R-square is only 6.1%. Other factors show no statistically significantly impact on the IPO return.

Table V. Ordinary Least Square Regression Results

Panel A: Ordinary least square regressed on each independent variable.

	Model 1	Model 2	Model 3	Model 4	Model 5
CONSTANT	-0.003 (-0.198)	0.027 (1.314)	-0.209 (-0.672)	-0.009 (-0.538)	0.000 (-0.033)
MKT	0.783 (-0.612)				
DAY		-0.001 (-2.155)*			
LN_CAP			0.010 (0.664)		
DIVERSE				0.036 (0.901)	
RESIDENT					-0.037 (-0.530)
R-SQUARE	0.005	0.061	0.006	0.011	0.004

* $p<0.05$

Panel B: Ordinary least square regressed on each independent variable with market return as a control variable.

	Model 6	Model 7	Model 8	Model 9
CONSTANT	-0.030 (1.450)	-0.243 (-0.770)	-0.011 (-0.605)	0.000 (-0.040)
MKT	-1.521 (-1.190)	-0.930 (-0.717)	-0.915 (-0.711)	-0.974 (-0.740)
DAY	-0.001 (-2.385) *			
LN_CAP		0.011 (0.767)		
DIVERSE			0.039 (0.969)	
RESIDENT				-0.048 (-0.675)
R-SQUARE	0.079	0.013	0.018	0.012

* $p<0.05$

Panel C: Ordinary least square regressed on all independent variables (Model 10) and ordinary least square using stepwise (Model 11)

	Model 10	Model 11
CONSTANT	0.012 (0.033)	0.027 (1.314)
MKT	-1.822 (-1.342)	
DAY	-0.001 (-2.320)*	-0.001 (-2.155)*
LN_CAP	0.002 (0.096)	
DIVERSE	0.036 (0.843)	
RESIDENT	-0.051 (-0.686)	
MALAYSIA	-0.044 (-0.934)	
SINGAPORE	-0.029 (-0.759)	
R-SQUARE	0.108	0.061

* $p<0.05$

All regression analysis show the same results that only the coefficient of the number of days between the offering date and first trading date of the real estate security IPOs is statistically significant ($p<0.05$) and the impact to the return is very low at -0.01% for each one additional day.

CONCLUSION

From the descriptive analysis, the average return of real estate security IPO is slightly negative and the standard deviation is quite high. However, the IPOs with higher than average market capitalization provide positive return. In addition, the IPOs in Malaysia offer negative average return while the IPOs in Singapore and Thailand present slightly positive average return. The IPOs with diversified types of underlying real estate provide positive average return while the IPOs with only one type of real estate give negative average return. Both IPOs with underlying real estate for residential use and for non-residential use provide negative average return whereas the prior group has more negative average return. The regression analysis shows that market return, market capitalization, the diversification of underlying real estate, the use of the underlying real estate and the IPO countries do not significantly affect the IPO return of the real estate securities in

ASEAN countries. Only the duration between the offering date and the first trading date statistically negatively effects the IPO returns. However, the impact is very small.

The investigation suggests that the investment on real estate security IPOs is not the efficient method for investors to build up their wealth. The evidences support the existence of market efficiency in real estate security IPOs. In other words, the issue on asymmetric information in real estate security IPOs is not as significant as in common stock. However, this study has two important limitations. First, the data covers only Malaysia, Singapore, and Thailand. If other ASEAN countries, such as Indonesia and Philippines, are more interested in raising funds by issuing real estate securities and counted in the study, the relationship of the studied factors and the IPO returns might be different. In addition, there might be other factors which are worth to be explored further because all models report rather low R-square.

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