Does difference between NAV and market price Make sence: Case of Thai Property Funds and REITs

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Abstract

Book values or Net asset values (NAV) or of Thai Property Funds and REITs typically differ from their market prices, although NAVs are considered as norm to reflect their transaction prices. This research includes the quantitative approach to study statistic results of impact from book value to returns of Thai Property Funds and REITs and the qualitative approach to comprehend why their book values depart from market values from opinions of the qualified industry experts.

Setting the control variables, presence of the book value factor exhibits insignificantly different explanatory power in the quantitative models. Such factor is per se also insignificant determinant in any models to explain their returns. Divergence of book values and market prices of Thai Property Funds and REITs is explained from six reasons of yield – based pricing, fund size and liquidity, frequency of book value readjustment, leverage use leasehold interest factor, unpriced book value for potential growth. The findings are consistent with previous studies which support the

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rational approach. The interesting finding is leasehold interest factor which is not much discussed in other studies. Since Thai regulation allows maximum shorter leasehold term of 30 years than others unlike 99 years maximum in US and Singapore, such country – specific factor caused different impacts to Thai vehicle compared to the global REITs.

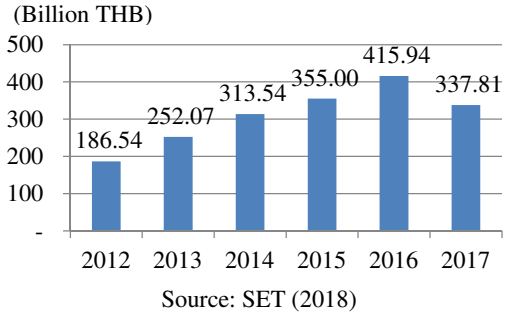
Keyword: Thai Property Funds, REITs, NAV, Centralized Market, Rational Approach

1. Introduction

Found in US in 1960s, Real Estate Investment Trust (REIT) is an investment vehicle which not only helps the retail investors enable to invest in capital intensive real asset, but also supports the institutional and high-net-worth investors to diversify their investment. Regarding portfolio allocation, real estate is an attractive asset class in the mixed-asset portfolio due to favorable risk return characteristics and low correlations with other asset classes like stock and bonds (Block, 2006; Katzler, 2017; Quan & Titman, 1999).

The REIT and REIT – like vehicles have become globally recognized, and their legislations have been adopted in thirty seven countries with total market capitalization of approximately USD 1.7 trillion in mid of 2017 (EY, 2017). The REIT – similar vehicle in Thailand named the Property Fund type I initiated in 2003 has continuously grown and become important investment vehicle for real estate asset, especially from 2014 when the first Thai REIT listed in the Stock Exchange of Thailand (SET). Market capitalizations of both Property Fund and REIT worth approximately THB 337.81 billion, representing 1.88% of market capitalization of SET and 2.19% Thai's Gross Domestic

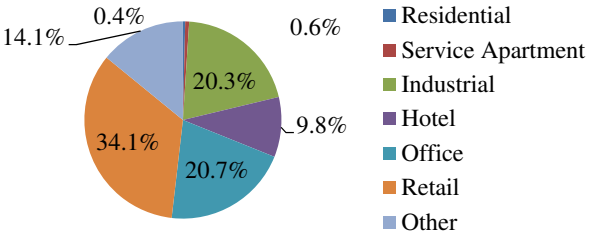
Product in 2017 (NESDB, 2018; SET, 2018). Due to delisting of few Property Funds, market capitalization in 2017 decreased Y-o-Y, but has continuous growth at 12.6% CAGR in five years.



Source: SET (2018)

Figure 1: Market Capitalization of Thai Property Funds and REITs, 2012 – 2017

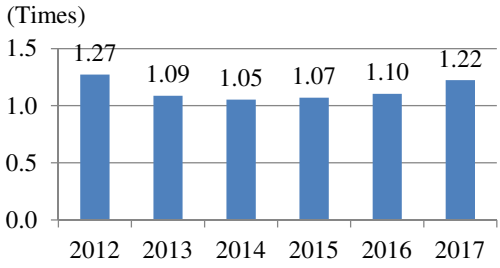
Amongst 57 listed Property Funds and REITs, commercial property of retail and office dominates the market approximately 54.8% of sector's market capitalization.



Source: SET (2018)

Figure 2: Property type of Thai Property Funds and REITs by Market Capitalization in 2017

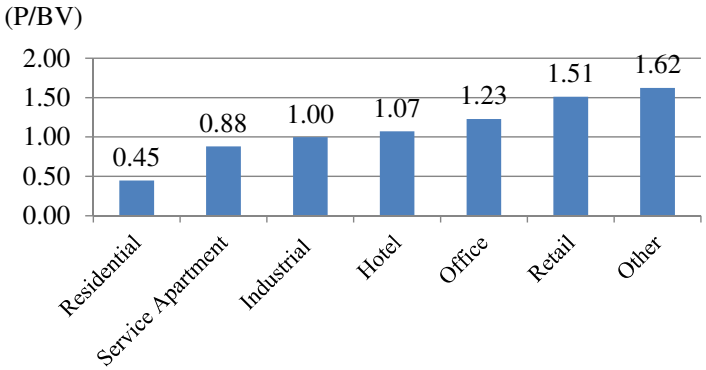
Over almost fifteen years history of Thai Property Funds and REITs, one of the puzzling issues in the industry is why they are traded in the stock at different prices to their book values or net asset values (NAVs). In the end of 2017, Thai Property Funds and REITs are traded premium price to book value (P/BV) at approximately 1.22 times. Looking backward for five years, they were traded at premium ranging between 1.05 and 1.27 times.



Source: SET (2018)

Figure 3: Price per Book Value of Thai Property Funds and REITs, 2012 – 2017

Property Funds and REITs investing in other property type were traded at 1.62 times the highest P/BV of all sectors, whilst those with residential property were traded at 0.45 time the lowest P/BV of all sectors.



Note: Other includes airport, exhibition center, data center and agricultural market

Source: SET (2018)

Figure 4: Price per Book Value of Thai Property Funds and REITs by Property Type in 2017

It is questionable why different timing and property sector cause dissimilar ratio of market price to book value, especially 0.45times P/BV of residential property compared to 1.51 or 1.62 times of retail and other properties. Regardless of type of investor and sponsor, relevant information and industry insights about difference between market price and NAV of Property Funds and REITs, and their impacts to returns of Thai Property Funds and REITs are sine qua non for their proper decisions to invest in and dispose assets to REITs (Lee, 2010; Ratcliffe & Dimovski, 2012; Buranasiri & Nittayagasetwat, 2012).

2. Literature review

There are many studies about differences between market prices and net asset values of international REITs which can be concluded into two schools of thought: The Rational Approach and Noise Trader Approach.

2.1 Rational Approach

The rational approach explains about differences between book and market values from reasons of dissimilarities between direct and indirect real estate investments and firm-specific factors e.g. size, trading liquidity, leverage, potential growth (Monson, et al. 2017; Morri & Baccarin, 2016).

Differences between Direct and Indirect Real Estate Investments

Real estate is heterogeneous asset in terms of location, building type, condition, size, development potential, and is traded in a non–centralized market at lower frequency compared to other assets (Issac, 1998). On the other hands, REITs traded in the stock market is found to be more pricing efficiency than traditional real estate without centralized market (Buccola, 1985). Because of better market efficiency, share prices of J-REITs are found to signal turning points of prices and cash flow of commercial properties in Japan much earlier than traditional appraisal value (Erwin, et al., 2015). REITs as indirect vehicle also exhibit hybrid characteristics of security and real estate, at least in short term (Anderson et al., 2006; Chan et al. 2003), and gradually behave like their underlying real estate assets and become more independent to the stock market in long term (Clayton and Mackinnon, 2003).

Size and Trading Liquidity

Fund size is one of the inputs in the well – known three factor asset pricing model, which suggests the smaller stocks tend to provide high abnormal return (Fama & French, 1993). Value of market capitalization has a positive effect on REIT price premiums (Barkham & Ward, 1999; Clayton & MacKinnon, 2001). In this aspect, required return of the investment asset involves with its size and expected liquidity (Acharya & Pedersen, 2005; Chou & Hsu, 2008). Australia REITs with large size over USD 1 billion gain attention from the institutional investors because of high trading liquidity (Yong et al., 2009), whilst Thai Property Funds with below THB 2 billion size may draw significantly less attention from such investors owing to concerns about liquidity risk (Jiamchoatpatanakul, 2017). REITs with high liquidity and trading volume are traded at lower discount to their NAVs (Capozza & Lee, 1995; Morri & Baccarin, 2016).

Leverage

REIT performances are found to be sensitive to financial leverage (Delcoure & Dickens, 2009). In this aspect, leverages are found to have significantly negative effects on REIT price premiums to NAVs (Anderson, et al., 2001). Strong REITs with lower leverage, long debt maturity, large proportions of fixed–rate debt and reserve small cash express high market value of assets relative to book value (Striner, 2017). US REITs with strong governance also take precautions actions to tone down leverage level and extend debt maturity so that they control capital structure risk regarding high gearing and short maturity (Pavlov, et al., 2016). REITs with higher leverage leads to more NAV discount because more equity risk exposure (Morri, et. al., 2005). Monson et. al. (2017) find the relationship between lagged NAV

growth and NAV discount of the REITs with supporting evidence of existing biased reactions of public market to fundamental information in the private market. On the contrary, some US REITs issue more debt than equity with the reason to maintain shareholder wealth, especially REITs with overconfident CEOs (Jui & Tan, 2017). Striner (2017) found that the hotel REITs tend to have greater leverage, shorter debt maturity and more cash on hand than overall REITs.

Potential Growth

REITs can grow their income and provide higher dividend to the investors by improving performance of the existing assets and acquiring new property for asset accretion. Atchison & Yueng (2014) stated that REITs managers would seek for growth from selective acquisition of the new high-quality assets which reach their investment criteria. Kim & Wiley (2018) found that REITs managers invest additional real estate following positive changes in NAV premiums. In addition, the asset growth effect caused impact to REITs that involve with issuing equities over the next 12 months and is significantly less negative for newly – issued units of REITs to sell at premium to their net asset values (Ling et al., 2016). However, the fast-growing REITs tend to underperform slow growing REITs (Ling et al., 2016). Asia REITs also provided slightly low average initial return from IPO at 3.08% (Ooi, et al., 2018). Transaction prices of REITs for retail, office and multifamily residence investment paid by REITs managers are found to be higher than other types of investors (Kim & Wiley, 2018).

In terms of improving existing properties, the asset enhancement may provide an incremental return on investment (ROI) to the unit holders via methods of facility improvement, marketing and branding, space

reconfiguration, green and CSR initiatives (Lee, 2012). Morri & Baccarin (2016), however, argued that the stock market does not believe in property appraisals because they are heavily influenced by the past appraisals, which rationally leads to discrepancy between stock values and NAVs of REITs. They also mentioned that appraisal values are mainly considered from backward looking performance, while stock price and financial market are reflected from forward outlook.

2.2 Noise Trader Approach

Introduced by De Long, et al. (1990), the noise trader model bases on few assumptions of unpredictability of the noise trader sentiment, and being systematic risk of the noise trader sentiment and short time period for the rational investors' considerations. The model explains the divergence of market price from fundamental value and suggests that additional noise trader risk causes NAV discounts. Sun et al. (2014) supported that share prices of REITs were more volatile than prices of their underlying assets during financial crisis period between 2007 and 2009, especially REITs with higher debt to asset ratios and shorter maturity debt fell during such period.

Some supporting researches to the noise trader approach include using sentiment factor in the appraisal reduction coefficient model (Morri & Baccarrin, 2016), using macro economy and business sector to identify UK market sentiment (Barkham & Ward, 1999) and explanation of difference between market price and NAV from additional risk from noise traders (Elton, et al., 1998; Baker & Wurgler, 2006; Ramiah, et al., 2015) However, An, et al. (2015) providing the countering argument to the noise trader approach exhibited increase of institutional ownership of US equity REIT from 14.4% in 1990 to 75.19% in 2011. Dominating the market by rationale institutional investors, it is unclear that market is affected by such noise trader.

Lee, et al. (2013) also found that only weak evidence of impacts from investor sentiment on P/NAVs of Singapore REITs and noise trader tends to react to lagged information. Although the uninformed or noise investor push REITs prices away from their NAVs, the informed investor would push the prices to NAVs back (Clayton & MacKinnon, 2001). The improvement of the available information to the investors helps reduce divergence between market price and fundamental price (Graff & Young, 1997).

Having said these, it implies that factors grounded from the Rational Approach might not explain REITs returns completely, especially when such noise trader events present. However, this study mainly concentrates on quantified factors from both approaches so as to explain REITs returns from quantitative and qualitative perspectives. In addition, it is not only book value factor, but also other factors have been internationally studied as determinants of REITs returns, e.g. stock market impact (Hoesli & Serrano, 2007; Quan & Titman, 1999), interest rate impact (Ratcliffe & Dimowski, 2007; Yong et al., 2009), trading volume (Li, 2012; Yong et al., 2009), size (Jiamchoatpatanakul & Tangchitnob, 2014; Capozza & Lee, 1995), corporate governance (Lecomte & Ooi, 2013), property managerial skills and sponsor reputation (Jiamchoatpatanakul & Tangchitnob, 2015a), quality of the property (Jiamchoatpatanakul, 2018), leverage utilization (Chikolwa, 2009; Jiamchoatpatanakul & Thisadrondilok, 2015), guarantee factor (Jiamchoatpatanakul & Tangchitnob, 2015b), legislative structure (Moss&Prima, 2014).

3. Research Methodology

This research use both quantitative and qualitative methods to understand statistic results and rationales from experts' viewpoints.

Since noise trader impact the market in short period, such unquantified factors from this approach will not be focused in this research.

3.1 Quantitative Approach

For the quantitative study, a set of time series secondary data between January 2013 and June 2018 was extracted from Bloomberg database (n = 286), including total return of Thai Property Funds and REITs as dependent variable [PF&REIT] and previously studied factors (independent variables) of stock market impact [total return of SET index, MKT], change of book value [BS_TOT_ASSET, BOOK], leverage level [TOT_DEBT_TO_TOT_ASSET, DEBT], trading volume [PX_VOLUME, VOL], long – term bond [10Yrs Gov, LTBOND] and short – term bond [1Yr Gov, STBOND]. The log values are applied on variables of trading volume to evade the inflated value. The multiple regression equation is as show follow:

PF&REIT = BO + B1 MKT + B2 BOOK + B3 DEBT + B4 VOL+ B5 LTBOND B6 STBOND

This study concentrates on understanding whether book value is significant determinant to explain return of Thai Property Funds and REITs, thus the regression analysis includes other factors as control variables in the model.

3.2 Qualitative Approach

The qualitative research is conducted by in depth-interview. The research questions aim to explore the answers the following question:

"Do book values of Thai Property Fund and REITs explain their returns?"

The purposive sampling with minimum qualifications of three years' experience in Thai Property Funds and REITs industry is applied to screen out interviewees with less capability of providing opinions about key research question. The qualified fifteen experts are chosen and can be

categorized by job roles of Property Fund/REIT manager, investor, security analyst, and financial/property advisor. Most of them are male; only five are female. Their relevant experiences in the industry range between 3 and 14 years with 7.3 years' average experience.

Table 1: List of the Interviewee Samples

No	Job Role	Gender	Experience (Yrs)	Interviewee Date
1	Property Fund & REIT Manager	Male	6	17-Jul-18
2	Institutional Investor	Male	14	17-Jul-18
3	Security Analyst	Female	11	18-Jul-18
4	REIT Manager	Male	3	18-Jul-18
5	Property Fund Manager	Female	7	18-Jul-18
6	Institutional Investor	Male	9	20-Jul-18
7	Real Estate Advisor	Male	10	20-Jul-18
8	REIT Manager	Male	3	23-Jul-18
9	Property Fund Manager	Female	3	24-Jul-18
10	Institutional Investor	Male	5	24-Jul-18
11	Security Analyst	Female	4	25-Jul-18
12	Institutional Investor	Male	6	26-Jul-18
13	Investment Banker	Male	5	30-Jul-18
14	Real Estate Advisor	Male	12	30-Jul-18
15	Security Analyst	Female	5	31-Jul-18

4. Research results

4.1 Quantitative Analysis

In this research, the relationship between return of Thai Property Funds and REITs and book value was studied, and other independent factors were employed as control variables. The regression results on the weekly data between January 2013 and June 2018 were shown as follow:

Table 2: Regression Results

Variable	Model 1	Model 2	Model 3
Constant	-0.0414	-0.0466	-0.0467
	(-2.2384)**	(-2.8017)***	(-2.8048)***
MKT	0.2113	0.2103	0.2088
	(8.8633)***	(8.8716)***	(8.8108)***
BOOK	**-0.0125**	**-0.0127**	
	(-1.2421)	**(-1.2681)**	
DEBT	0.0001		
	(0.6573)		
VOL	0.0055	0.0063	0.0063
	(2.2432)**	(2.8792)***	(2.8809)***
LTBOND	-0.0311	-0.0314	-0.0313
	(-1.9045)*	(-2.0395)**	-(2.0317)**
STBOND	-0.0019		
	(-0.0849)		
R-square	0.2665	0.2653	0.2611
Adjusted R-square	0.2507	0.2549	0.2533

The t-statistics are reported in parentheses.

*denotes significance at 10.0% level

**denotes significance at 5.0% level

***denotes significance at 0.1% level

As shown in Table 2, Model 1 exhibits determinants of the return of Thai Property Funds and REITs, and reflect insignificance of the studied factor of change of book value ("*BOOK*"). Setting only significant factors as control variables, Model 2 and 3 are compared to show difference between presence and none of the book value factor. Change of Book value is not only being insignificant variable in Model 2, but also provides similar

explanatory power in Model 2 compared to Model 3 without such factor because of almost the same R-square and adjusted R-square of both models. Showing statistically insignificant impact in the model, change of book value exhibits the negative coefficients to return of Thai Property Funds and REITs. In addition, factors of total return of SET index ("MKT"), trading volume ("VOL") and long – term bond ("LTBOND") are found to be statistically significance across all models.

4.2 Qualitative Analysis

After collecting the interview data, the content analysis is applied. The following findings from the research question were analyzed and concluded into six aspects.

4.2.1 Yield drives market price and return

Most interviewees mentioned that market price and return of the Property Funds and REITs are driven by their yields instead of book value. Interviewee no. 9 suggested that investors majorly focus on current and future growth yield of the Property Fund and REITs to consider investment price. Interviewee no. 1 supported that some Property Funds and REITs are traded above 1.5 times of their book values, while some are traded below 0.5 times of their book values. He explained that those traded higher than book value may offer good yield to the investors. In addition, there are about 60 Property Funds and REITs listed in Thai Stock Exchange, therefore, investors can compare yields of others to determine suitable market price to invest. Interviewee no. 12 believed that many investors only concentrate on book value during transaction period, but mainly consider on yield and growth for ongoing operation.

Result: Agreed (14 of 14 interviewees)

4.2.2 Trading liquidity and fund size cause price premium to NAV

Many interviewees mentioned that the Property Funds and REITs supported liquidity benefit of the Property Funds and REITs vehicle to market price premium. Interviewee no. 15 pointed out market prices of the Property Fund and REITs are generally traded at premium to their NAVs because of higher liquidity to trade in the stock market. Interviewee no. 14 mentioned that the property appraiser considers market value of the property under assumption of reasonable time to expose in the open market, e.g. 6 – 12 months. Better liquidity to trade on daily basis in the stock exchange brings about premium to NAV of the Property Fund and REITs Interviewee no. 5 supports about liquidity premium, especially those with large fund size which draws more attention from institutional and oversea investors. However, interviewee no. 2 and 12 argued that large Property Fund and REITs may acquire assets from sponsors at higher price to appraisal value because they are traded at premium prices to NAVs and can gain higher DPU than before acquisition. The implication is acquisition of such sponsor assets might cause negative impact to REIT return from overpriced deal rather than larger size of portfolio and consequently higher trading liquidity.

Result: Mostly agreed (8 of 11 interviewees)

4.2.3 Significant adjustment of book value on quarterly basis, unlike market price change on daily basis

Many interviewees discussed about different frequency of book value and market price changes. Interviewee no. 4 and 8 commented that book values of the Property Fund and REITs are readjusted on the monthly and quarterly basis respectively. As a result, market price and return of the Property Fund and REITs may be ineffectively reflected in daily trading. Interviewee no. 13 also suggested that the appraisers typically consider

historical performance of the asset to project the future cash flow of the asset. In case the Property Funds and REITs differently perform at significant level, market price will reflect such factors but asset price requires historical performance to support the assumptions for the valuation. Interviewee no. 9 updated that the recent regulation of the Property Fund has enforced frequency of the asset value announcement to be on quarterly basis like REITs, instead of monthly basis.

Result: Agreed (10 of 10 interviewees)

4.2.4 Difference of discount rate of valuer from WACC of the investor

Many interviewees suggested about discrepancy between discount rate of valuer and required return of the investor. Interviewee no. 5 suggested that discount rate for the property valuation does not consider debt use and cost of the REITS. Interviewee no. 14 also supported that Thai REITS can legally utilize loan up to 60% of total asset, unlike Property Fund with maximum at 10% of net asset value. REITs tend to have higher difference between discount rate and WACC than the Property Fund. Typically, WACC is considered to reflect required return of the investors. Interviewee no. 10 commented that some appraisers don't adjust discount rate for the income approach valuation as change of market risk free rate, but the investor actually compare it to reflect expected yield and investment price.

Result: Agreed (12 of 12 interviewees)

4.2.5 Leasehold interest differently affect asset value and market price

Major interviewees mentioned that some investors may not consider much about shorter leasehold period and remaining leasehold

interest, especially retail investors. Interviewee no. 15 comments value of the leasehold asset tends to drop gradually as shorten period of the remaining leasehold interest, but market price of the Property Fund and REITs may not reflect such fact. In viewpoint of the appraiser, discount rate may be higher for the leasehold asset with remaining period below 10 years to reflect higher risk, which may differ from required return of the investor. Interviewee no. 3 supported that some investors believe they can sell units of the Property Funds and REITs in the stock market in any trading days, thus they might not consider much about remaining leasehold period but consider expected yield. As a result, asset value of the leasehold asset may drop but market price is traded higher than asset value.

Result: Agreed (4 of 4 interviewees)

4.2.6 Unpriced book value for inorganic growth and asset enhancement initiative (AEI)

Some interviewees mentioned that the investors may consider investment price based on future growth potential, but book value will reflect when the past performance are supported for future projection. Interviewee no. 2 commented about inorganic growth of REITs that market price of REITs units may consider foreseen opportunities for new acquisition and dividend growth. In this case, book value cannot be reflected until actual acquisition. Interviewee no. 5 supports that some Property Funds and REITs obtain right from sponsor to acquire asset in the future, such as GVREIT, GLANDRT, TREIT and WHART. Interviewee no. 2 also mentions about asset enhancement initiative, such as improve building facilities and common area, and optimize space in the building to generate more income. There are some cases, for instance, CPNREIT with renovation plans for Central Pinklao, Central Rama 2 and Central Rama 3, and TLGF with plan to configure space to increase attractiveness of the mall and draw more traffic.

Interviewee no. 10 supported the case of DTCREIT with renovation plan for its asset in Phuket, and potential renovation plan of SPF.

Result: Agreed (7 of 7 interviewees)

Table 3: Content Analysis

No	Experts' Opinions	Overall Frequency	Agreed Opinion	Disagreed Opinion	Conclusion
1	Yield drives market price and return	14	14	0	Agreed
2	Trading liquidity and fund size cause price premium to NAV	11	8	3	Mostly Agreed
3	Significant adjustment of book value on quarterly basis, unlike market price change on daily basis	10	10	0	Agreed
4	Difference of discount rate of valuer from WACC of the investor	12	12	0	Agreed
5	Leasehold interest differently affects asset value and market price	4	4	0	Agreed
6	Unpriced book value for inorganic growth and asset enhancement initiative (AEI)	7	7	0	Agreed

From the qualitative research, six aspects were mentioned by experts to explain why book value differs from market price and implication of insignificance impact of book value to return of Thai Property Funds and REITs. The 1st opinion about market yield, 3rd opinion about frequency of book value adjustment and 5th opinion about leasehold interest are relevant to previously studies about differences between direct and indirect real estate investments in terms of existence of centralized market to trade daily and flexibility to exit, and vehicle mechanic of REITs. The 2nd opinion about trading liquidity is also consistent with other studies, such as more attention from institutional investors to large REITs with high liquidity, whilst the 4th opinion about different returns from the viewpoints of valuer and investors are explainable from leverage factor. Regarding unpriced factor of the 6th opinion, this is relevant with potential growth of REITs. Having said

these, all of the reasons are consistent with the previous research and support the concept of rational approach.

5. Conclusion

Book values of Thai Property Funds and REITs are found not only being insignificant factor to determine their returns but also being explainable to differ from their market prices from six reasons mentioned by the industry experts. Setting the control variables, the quantitative models with and without book value factor exhibit insignificant difference of explanatory power. It implies irrelevancy of such factor to returns of Thai Property Funds and REITs. In the qualitative study, book values of Thai Property Funds and REITs diverge from their market prices because of REITs vehicle characteristics and microstructure factors of each individual in terms of size and trading liquidity, leverage utilization and unpriced book value for potential growth.

The interesting finding is an impact from leasehold interest factor which is not much discussed in other studies. Since Thai regulation allows maximum shorter leasehold term of 30 years than others unlike 99 years maximum in US and Singapore, such country – specific factor caused different impacts to Thai vehicle when compared to the global REITs.

6. Recommendation

The results of this research explain rationales about differences between book and market values of Thai Property Funds and REITs from both quantitative and qualitative perspectives. In this study, regulatory issue of 30 years maximum leasehold interest registration is also found as country's specific factor which might affect both values in dissimilar way compared to

other countries. The further study should be considered in the following suggestions:

- The further quantitative research should cover longer period analysis. Since The first Thai REITs was listed in late 2014, Thai REITs have presented in short history.

- Growing Thai Property Funds and REITs industry should draw more attention from oversea investors in the future. Thus, the further qualitative research should include samples of such investors with more experience from international market exposure to understand their notions about difference between book and market values.

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