

Impacts of corporate governance on Asian REITs performance

Wei Lan Chong^a, Kien Hwa Ting^b and Fan Fah Cheng^c

^aPutra Business School, Universiti Putra Malaysia, Serdang, Selangor, Malaysia; ^bFaculty of Architecture, Planning & Surveying, Centre for Real Estate Research, Universiti Teknologi MARA (UiTM), Shah Alam, Malaysia; ^cFaculty of Economics and Management, Department of Accounting and Finance, Universiti Putra Malaysia, Serdang, Selangor, Malaysia

ABSTRACT

The results indicate that corporate governance not only helps to improve the return on assets (ROA) but also helps to gauge excess returns of REITs even though the Asian REIT industry is a highly regulated industry. The findings also found that REIT organization, remuneration matters and fees decrease the performance of Asian REITs. However, gearing and related party transactions are found to enhance the performance and accelerate the growth of REITs. Besides that, board matters, audit and fees have significant negative impacts on Tobin's *q*. Also audit is found to reduce the returns of Asian REITs. However, interestingly, the ownership has significant positive impact on Tobin's *q*. In addition, the block ownership also helps to curtail and mitigate excess returns of REITs in Asia. This also implies that unitholders are generally and minimally protected. The findings imply that the REIT managers face substantial cost in adjusting to equilibrium level whereby the optimum level is always dynamic and not constant, and it persists over time. This also implies that agency costs exist in the existing externally managed REIT structure in Asian REITs. This also implies that Asian REITs could consider redefining the REIT management structure such as the internally managed REIT structure. The findings of this study indicated the need for improvements, transformation and reform in the REIT regime in order to increase the transparency and disclosure of corporate governance of REITs that could facilitate continuous strategic development and growth of REITs in Asia.

ARTICLE HISTORY

Received 21 August 2016
Accepted 29 November 2016

KEYWORDS

REIT corporate governance;
individual corporate
governance attribute;
performance; excess return;
Asian REITs; GMM method

1. Introduction

Since early 2000, the market capitalization of the REITs in Asia has increased significantly and emerged as a major regional REIT market. The REITs in Asia have been growing at an enormous rate after the recovery from the Global Financial Crisis in 2008/2009. The global REIT market capitalization has reached US\$1,494 billion by December 2015 as shown in Figure 1. The Asia Pacific region accounts for 18% of the total global REIT market capitalization.

For Asia, 127 REITs are established in Japan, Singapore, Hong Kong, Malaysia, Taiwan and South Korea with total market capitalization of US\$169.43 billion by December 2015 (Figure 2). Figure 2 further highlights the significance and the growth of REITs in these major Asian REIT markets from year 2000 to 2015. The REITs in Japan, Singapore, Hong Kong are the leaders in Asian REITs which account for 90% of the total market capitalization of REITs in Asia by July 2016 (Table 1).

Table 1 highlights the significance and the growth of individual Asian REIT markets by July 2016. It can be seen that the number of REITs and market capitalization of REITs keep growing in Japan, Singapore and Hong Kong. By July 2016, the market capitalization of Asian REITs stood at US\$216 billion. This shows the significance and importance of REITs in Asia and in global context. Besides that, REITs in emerging markets such as Thailand, Malaysia, Taiwan and South Korea are growing. A new country entering the Asian REIT market is Pakistan.

Table 2 depicts the REIT performance for Asia Pacific region. S-REITs had the best performance for the past 10 years with an average total return of 11.11%.

There are many empirical studies focusing on Asian REITs such as Japan REITs (Kutsuna, Dimovski, & Brooks, 2008; Newell & Peng, 2012; Ong, Ooi, & Kawaguichi, 2011), REITs in Singapore (Newell, Pham, & Ooi, 2015; Sing & Ling, 2003), REITs in Hong Kong (Newell, Wu, Chau, & Wong, 2010), REITs in Malaysia (Newell & Osmadi, 2009, 2010; Newell, Ting,

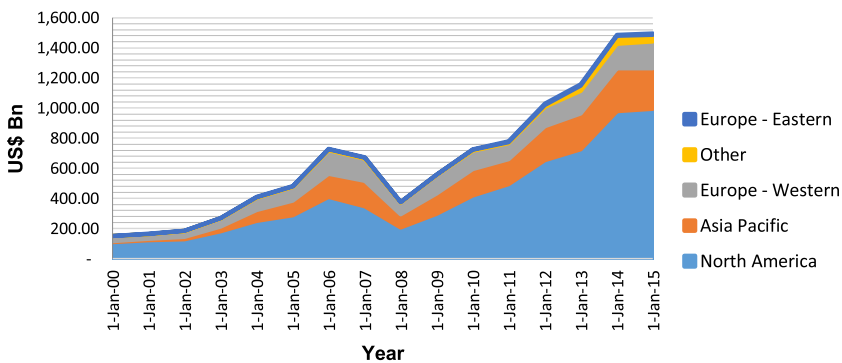


Figure 1. The growth of global REIT market capitalization from 2000 to 2015. Source: Bloomberg and APREA.

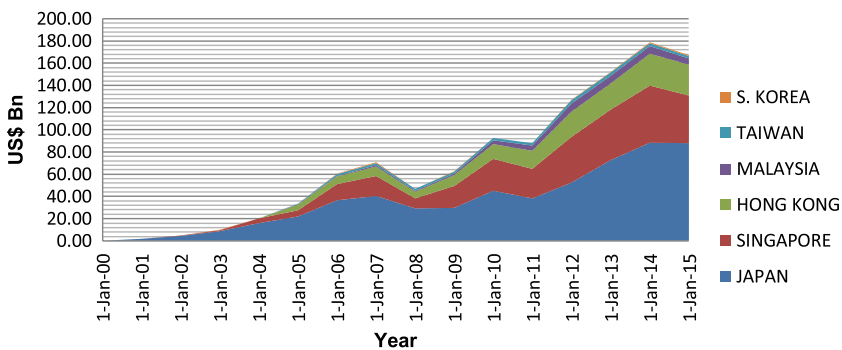


Figure 2. The growth of Asian REIT market capitalization from 2000 to 2015. Source: Bloomberg and APREA.

Table 1. The major Asian REIT markets: July 2016.

Country	Number of REITs	Market capitalization (US\$ B)	Percentage of Asian REIT market (%)
Japan	55	112.0	51.8
Singapore	40	53.6	24.8
Hong Kong	11	28.8	13.3
Thailand	60	11.4	5.3
Malaysia	16	7.2	3.3
Taiwan	5	2.2	1.0
South Korea	4	0.9	0.4
Pakistan	1	0.2	0.1
Total Asia	192	216.3	100.0

Note: For Thailand, the classification of REIT is subject to interpretation given that there was a Property Fund for Public Offering (PFPO) structure before the introduction of the REIT regime.

Source: Bloomberg and APREA.

Table 2. Asia pacific REIT performance: June 2016.

% Total returns (USD)	June-16	YTD	1 year	3 years*	5 years*	10 years*
Australia	6.34	18.87	20.84	11.2	10.05	4.19
Hong Kong	7.69	16.87	17.4	15.06	16.83	N.A.
Japan	5.55	26.1	26.7	12.14	11.36	7.84
Malaysia	4.43	22.45	9.63	-0.54	6.77	N.A.
Singapore	6.13	16.46	2.13	4.26	6.76	11.11
Taiwan	-1.09	3.35	-4.55	-3.13	7.27	N.A.
MSCI Asia Pacific equities	0.29	-0.85	-9.35	2.33	1.91	2.83
JPM Govt Bonds – Asia Pacific	2.87	5.58	3.19	1.63	1.45	5.31

*Annualized based on TR/GPR/APREA Composite REIT Index;

Source: Bloomberg and APREA.

& Acheampong, 2002; Sing, Ho, & Mak, 2002), REITs in Taiwan (Lee, Kuo, Lee, & Lin, 2011; Lin, 2007; Peng & Newell, 2012), REITs in South Korea (Pham, 2011a) and REITs in Thailand (Pham, 2011b).

Other relevant literatures include the growth of REIT markets in Asia (Ooi, Newell, & Sing, 2006), the investment characteristics and benefits of Asian REITs for retail investors (Newell, 2012), the dynamics of return and volatility in Asian REIT markets (Pham, 2012), time dependent behaviour of Asian REITs and US REITs around the subprime crisis (Chang, Chou, & Fung, 2012), sponsor backing in Asian REIT IPO (Wong, Ong, & Ooi, 2013), the impact of REITs on Asian economies (Atchison & Yeung, 2014), regulatory and tax on REITs (APREA, 2014), the dynamic linkage among the Asian REITs market (Loo, Anuar, & Ramakrishnan, 2015), free cash flow and its impacts on agency costs and performance of REITs in Asia (Chong, Hassan, Ting, & Cheng, 2015), the integration between Asian REIT markets and macroeconomic variables (Loo, Anuar, & Ramakrishnan, 2016).

Besides that, other related and specific literatures on pan-Asia REIT context include volatility behaviour in Asian REITs (Tsai, 2013), convergent behaviour (Tsai & Lee, 2012), risk management in Asian REITs (Chiang, Tsai, & Sing, 2013).

There are also large bodies of literatures and empirical studies that document the effects of corporate governance on the performance of REITs. Nonetheless, majority of these research studies on REIT corporate governance are US-centric studies.

The growth and the significance of Asian REITs have attracted an increasing number of institutional investors to view Asian REITs as an important investment option in their portfolio management. As institutional investors demand better transparency and disclosure, corporate governance plays an important and vital role in Asian REITs.

In Asia, only Lecomte and Ooi (2013) have initiated REIT corporate governance research in Singapore. Issues on corporate governance of REITs in Asia are yet to be explored. With the development of REITs in Asia still at the infancy stage, many corporate governance issues are still opaque. Moreover, there is no research on REIT corporate governance in the Asian context.

Hence, this presents a research gap on corporate governance on REITs in Asia. Moreover, the findings from the empirical studies on US REITs may not be generalized to REITs in Asia. Asian REITs may present different institutional factors and country-specific factors that differ from US REITs. This offers further research opportunities on Asian REITs.

Furthermore, given the significant role and contribution of Asian REITs to the regional economic growth and development in Asia, it is important to assess the significance and the impact of corporate governance on the performance of REITs in Asia.

The primary objective of this study is to examine the impacts of corporate governance on the performance, value, returns and excess return on the externally managed REITs in Asia by using the REIT Corporate Governance Index (CGI) developed by Asia Pacific Real Estate Association (APREA).

The study also aims to provide a context for the improvement and reform of Asian REIT corporate governance that could facilitate continuous strategic development and growth of REITs Asia.

2. Literature review

2.1. Corporate governance rating

There are several types of corporate governance index (CGI) being used to measure the corporate governance rating in REITs. For instance, self-constructed corporate governance rating for German market (Drobetz, Schillhofer, & Zimmermann, 2004), G-Index constructed by Gompers, Ishii, and Metrick (2003) and Corporate Governance Quotient (CGQ) Index by Institutional Shareholder Services. Majority of these studies focus on REITs in US and Europe.

The CG Index for REITs is being used by Bianco, Ghosh, and Sirmans (2007). They posit that REITs seldom face hostile takeovers and REIT managers are less prone to barriers for external threats and this induces REIT managers to adhere to the industry norm as their optimum strategy in order to divert the investors' attention.

Bauer, Eichholtz, and Kok (2010) use comprehensive CGQ data-set in their empirical study. They argue that REIT governance structure is less important and irrelevant as REITs operate in a highly distinct legal setting and mandatory to pay out 90% of the net earnings as dividend to shareholders for tax exemption. This would reduce managerial entrenchment. This makes deviation from the optimal governance structure becomes less costly.

Nonetheless, according to Schultz, Tan, and Walsh (2010), the findings in Bianco et al. (2007) and Bauer et al. (2010) may be biased and inaccurate due to the research methodologies they used in their empirical studies.

2.2. Significant influence of REIT corporate governance

The empirical study documented in Anglin, Edelstein, Gao, and Tsang (2011) indicate that appropriately structured REIT corporate governance exerts a significant influence on REIT

information asymmetry. The findings of Anglin, Edelstein, Gao, and Tsang (2013) also document that good corporate governance affects real earnings management.

The findings of Kohl and Schaefer (2012) indicates evidence for complementary and substitution effects among single corporate governance mechanisms which is consistent with the studies in Agrawal and Knoeber (1996) and Beiner, Drobetz, Schmid, and Zimmermann (2006).

According to Hartzell, Sun, and Titman (2006), the responsiveness of REITs' investment expenditures to their opportunities depends on their corporate governance structures. The results indicate that REITs with stronger corporate governance respond more positively to investment opportunities.

In addition, according to Edelstein, Qian, and Tsang (2011), country-specific institutional factors may affect the excess returns (required risk premiums) of the real estate security returns. The three important factors are corporate governance quality, legal system quality and accounting standards quality.

2.3. US REITs corporate governance

Studies that focus on single or one specific attribute of corporate governance include board structure and board composition (Friday & Sirmans, 1998; Ghosh & Sirmans, 2003), REIT CEO issues and board of directors (Feng, Ghosh, & Sirmans, 2005, 2007a, 2007b; Ghosh & Sirmans, 2005), managerial motives impact dividend decisions in REITs (Ghosh & Sirmans, 2006), the impact of Sarbanes-Oxley Act on structure of REIT boards of directors (Noguera, 2012) and the ownership structure (Cannon & Vogt, 1995; Capozza & Serguin, 2003; Dolde & Knopf, 2010; Friday, Sirmans, & Conover, 1999; Han, 2006).

Other issues that have been researched are related to institutional investors ownership and its governance role (Chung, Fung, & Hung, 2012; Hartzell et al., 2006), firm governance affects institutional investment (Frank & Ghosh, 2012), institutional ownership dynamics (Devos, Ong, Spieler, & Tsang, 2013), executive compensation related issues (Cannon & Vogt, 1995; Capozza & Seguin, 2000; Ghosh & Sirmans, 2005), governance influence on REIT capital structure (Ghosh, Giambona, Harding, & Sirmans, 2011), institutional investment in REITs (Chan, Leung, & Wang, 1998), corporate governance and performance in the market for corporate control (Campbell, Ghosh, Petrova, & Sirmans, 2011), the combined impact of corporate governance and excess cash holdings on the propensity of firms to become bidders (Ghosh, Petrova, & Xiao, 2012).

It is noted that most of these research studies are on the relation between corporate governance and performance that focus mainly on the functioning of individual monitoring mechanism. Subsequently, the results of these analyses are to be used to compare and contrast the research of corporate governance of REITs in order to judge and justify the transparency of the governance mechanisms in the highly regulated legal environment of REITs and its relation between corporate governance and firm value. Furthermore, majority of these studies are US-centric studies.

2.4. Substitution hypothesis vs. complement hypothesis

Generally, there are two hypotheses being documented on REIT corporate governance. There are substitution hypothesis and complement hypothesis. In the US REITs' legal setting

and organizational environment, under the substitution hypothesis (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2000), the highly regulated and highly legally restricted in REITs may mitigate the agency problems and agency costs, and reduce the need for strong internal corporate governance mechanisms. Hence, corporate governance may be less important for REITs than for regular corporations (Hartzell, Kallberg, & Liu, 2008). Thus, under the substitution hypothesis, one could expect the relation between corporate governance structure and REIT performance to be relatively weak (Durnev & Kim, 2005; Klapper & Love, 2004). This is consistent with Bauer et al. (2010) and Bianco et al. (2007).

On the other hand, some literature reviews also argue that the highly regulated US REIT industry may not solve the agency problems. The empirical findings of Ghosh and Sirmans (2006) posit that despite the mandatory high dividend distribution, REIT managers have access to discretionary cash and investors are vigilant about how managers use it. This implies that agency issues are important despite regulations (Ghosh & Sirmans, 2006). For instance, the 90% dividend payout from net earnings may incorporate a substantial amount of depreciation expense. Hence, there may be discretionary cash in the hand of the REIT managers which they can freely decide on the actual payout ratio of this free cash flow (Jensen, 1986). Moreover, the 5–50 rule in the US REITs may hinder large block of shareholders and may protect REIT managers from the scrutiny of the market for corporate control (Eichholtz & Kok, 2008).

Nevertheless, the complement hypothesis states that the legal setting in which REITs operate should be complemented by internal corporate governance mechanisms as in regular corporations (Becher & Frye, 2011). Hence, this helps to reduce managerial entrenchment and helps to mitigate agency problems and agency costs. Besides that, it also helps to reduce information asymmetry and enhance performance. This is consistent with Anglin et al. (2011, 2013), Edelstein et al. (2011) and Lecomte and Ooi (2013).

Becher and Frye (2011) also reveal that regulation and governance are complements and are consistent with the notion that regulators pressure firms to adopt effective monitoring structures. It complements the institutional legal setting. In addition, Becher and Frye (2011) also contend that regulated and unregulated firms are analogous in terms of observed trade-offs between traditional monitoring mechanisms and insider ownership.

On top of that, according to Becher and Frye (2011), these regulated firms appear to decrease monitoring following post-deregulation due to removal of pressure and support the regulatory pressure hypothesis. This is contrary to substitution hypothesis whereby monitoring should increase.

2.5. Asian REITs corporate governance

For REITs in Asia, Lecomte and Ooi (2013) study the link between quality of corporate governance and corporate performance among externally managed Singapore REITs (S-REITs) listed on the Singapore Stock Exchange by employing a new corporate governance scoring framework developed by the APREA from the year 2002 to 2008.

The findings of Lecomte and Ooi (2013) provide empirical evidence that there is a significantly positive relationship between corporate governance and stock performance of S-REITs at 10% level. They posit that the S-REITs stock performance improve as a result of a reduction in information asymmetry, rather than improvement in operating efficiency.

This is consistent with Anglin et al. (2011). They attribute it to international investors who prefer to invest in S-REITs stocks with better governance.

Although it is evident that there is an improvement in stock performance due to better corporate governance; but there is no significant positive relationship between corporate governance and operating performance that is proxied by accounting measures of ROA and return on equity (ROE) in S-REITs (Lecomte & Ooi, 2013).

Besides that, Kudus and Sing (2011) explore the effects of board independence and share ownership structure on the stock performance of five countries in Asian REIT markets for the sample period from 2003 to 2007.

Their results show that there is a significant non-linear relationship of insider shareholdings on the board independence and the REIT stock performance. REITs with large insider shareholdings outperform REITs with small insider shareholdings.

In addition, these insiders (sponsors) use their controlling interests in REITs to appoint fewer and friendly independent directors into the asset managers' boards. The results are consistent with the findings of Morck, Shleifer, and Vishny (1988) and support the interest alignment hypothesis and reject the entrenchment hypothesis.

Prima, Stevenson, and Wyatt (2013) suggest that investors do not need to be concerned about potential agency conflicts associated with REIT sponsor relationships of Asian REITs. They attribute it to the interest of REIT managers and sponsors are likely to be significantly aligned with that of other unitholders as most sponsors hold significant amount of unitholdings in the REIT. They also postulate that the support provided by the sponsors especially developers is of particular significance due to development driven nature of the Asian REIT markets. Hence, this would make strong sponsor backing as one of the important contributors to the growth of Asian REIT markets in the past decade.

In addition, the findings of Prima and Stevenson (2015) indicate that REIT with stronger investor protection is associated with higher firm valuation. They also found that there is a weak positive effect between investor protection and REIT performance. The investor protection can be a substitute to a weak level of board independence, but not vice versa. Their results suggest that investor protection serves as a complement to monitoring of outside blockholder.

Their results also show that there is no evidence that REIT sponsors expropriate unitholders' wealth when there is a weak investor protection in place. As a whole, Asian REIT unitholders are protected. However, they postulate that there is room for improvement to foster investor confidence to facilitate the development of the Asian REIT markets.

Besides that, Moss and Prima (2014) also indicate that one of the key elements of a successful REIT market is that the regulators continually revise legislation to maintain growth in the market and reflect trends in international practices. The current developments particularly the proposed changes to Hong Kong REIT regulations would increase the attractiveness of Asian REITs to global investors and facilitate further development of the Asian REIT markets in the future.

They also suggest further improvement can be made in REIT managers by combining good property skills with good capital management skills; acquisition of assets from REIT unitholders' perspective and ability to minimize heavily dilutive equity issues.

Prior to the research of Lecomte and Ooi (2013), there is no standardized REIT CGI being used to measure REIT corporate governance issues in Asia. Furthermore, in the US REITs research, the empirical findings possess its own CGI. It is very difficult for benchmarking in

Asian REITs because of non-standardized scale in US REITs empirical studies. Besides that, the US REITs' corporate governance findings are different in terms of context and REIT CGI.

As a whole, there is limited research on REIT corporate governance in Asia. Thus, this presents research gap in REIT corporate governance in Asia. The purpose of this research is to fill in the research gap in REIT corporate governance in Asia by using a standardized CGI across the Asian REITs study. This study also enables considerable insight into the corporate governance and individual corporate governance attribute of REITs in Asia.

The remainder of this paper is organized as follows. Section 3 illustrates the research methodology, data and variables being used in this paper. Section 4 reports the results and findings. The last section reviews the results and draws conclusion for the study.

3. Research methodology

3.1. Research method

Following the literatures in Schultz et al. (2010), Wintoki, Linck, and Netter (2012) and Flannery and Hankins (2013), the dynamic endogeneity, simultaneity and unobserved heterogeneity exist in the regression models, thus, GMM Method using STATA software is being used in this study. Besides that, the panel data in the study have a long firm dimension where $N > T$ and T is < 10 . In addition, the GMM method allows for empirical modelling of dynamic while accounting for individual-specific dynamics. Thus, the GMM is more robust to be employed in this study.

Furthermore, the pooled OLS (Ordinary Least Squares), fixed effects and random effects estimators is biased in the dynamic panel data model. Hence, this OLS method fails to solve the issues that are arose from the regression models in this study.

The Sargan test is used to test the null hypothesis of the overidentifying restrictions are valid. The AR(1) test and AR(2) test are used to test for zero autocorrelation in first-differenced errors. Therefore, the test should reject the null hypothesis of no first-order serial correlation, but it should not reject the null hypothesis of no second-order serial correlation.

3.2. Data collection

The REIT samples are collected from REITs listed in Japan, Singapore, Hong Kong and Malaysia which account for 94% of the market capitalization of Asian REITs (Newell, 2012). The CGI scoring framework has been adjusted accordingly to the individual Asian REIT markets' local environment.

The study period is from 2008 to 2012. This is due to the newly implemented REIT corporate governance scoring framework developed by APREA. Nevertheless, the short time span could reflect the most recent and the latest updated on REIT corporate governance development and situation in Asian REITs.

The data and figures are collected from published annual company reports, company website, any related publications, Thomson One Bankers and Datastream.

The suspected incorrect data such as outliers are removed. To minimize the potential impact of outliers of REITs, the dependent variables and independent variables are all winsorized at the 1st and 99th percentiles.

3.3. Measurement of CGI

For this paper, corporate governance is measured using a CGI adapted from the CGI scoring framework developed by APREA. This REIT CGI is also being used in Lecomte and Ooi (2013) to assess the REIT's corporate governance scoring.

The REIT CGI represents the overall corporate governance. This REIT CGI is divided into eight categories. These eight categories are used to measure the CGI. There are board matters, audit committee, remuneration matters, REIT organization, fees, related party transactions, gearing and ownership.

The assessment of board matters consist of board composition, board independence, nominating and remuneration committee, board diversity, CEO or chairman separation, board meetings, disclosure of past and present directorships, nominating committee and board performance. The bonuses score would be given if at least one board member is related to trustee and the concept of independent director is properly defined in the annual report. The penalties score would be deducted if a proportion of board members are linked to a sponsor or REIT manager.

The audit assessment includes audit committee meetings and audit committee composition. The bonuses score would be given if at least one committee member is related to trustee or trustee related companies. The penalties score would be deducted if at least one committee member is related to a sponsor or REIT manager.

The assessment of remuneration matters includes the disclosure of director and executive remuneration. Bonuses score would be given for the disclosure of exact remuneration of executive director and all members that linked to sponsor do not receive directors' fees. The penalties score would be deducted for a majority of members of the nominating and remuneration committees that are linked to a sponsor or REIT manager.

REIT organization assessment comprises the annual general meeting (AGM), manager, trustee and governance guidelines. There would be bonuses score for the REIT that has a whistleblowing policy, key risks and methodology to cover them in the annual report and rules on limiting manager's ability to vote on management changes. There would be penalties score for REIT manager that is related to sponsor.

The assessment of fees basically cover the structure of REIT manager's management fees, acquisition or divestment fees, disclosure of fees, property manager's fees, payment of fees in units and manager's management fee level and total manager's fees. Bonuses score would be given for fees paid to the REIT manager, property manager and trustee that are fully disclosed, the disclosure of acquisition fees for holding period for units received in payment that is greater than one year, and payment of management fees in form of units that is submitted to the board or discussed in EGM. The penalties score would be deducted if REIT manager applied for a waiver from local stock exchange for the disclosure of related party transaction fees, total fees paid to REIT manager and property manager increased on a year per year basis, while earning per unit decreased or remained equal and fees paid to property manager include leasing commission.

The related party transactions assessment includes the disclosure of related party transactions, role of trustee and independent of experts. There would be bonuses score if the trustee or trustee related companies are defined as related parties and also transactions with parties related to independent non-executive directors are submitted to rules on related

Table 3. The elements in the eight corporate governance categories and weights.

Item category	Core	Bonuses	Penalties	Maximum score	Minimum score	# Elements in category	Weights in total score (%)
Board	16	2	1	18	-1	19	19
Audit	4	1	1	5	-1	6	6
Remuneration	5	2	1	7	-1	8	8
REIT organization	11	3	1	14	-1	15	15
Fees	18	3	3	21	-3	24	24
Related party transactions	13	2	1	15	-1	16	16
Gearing	5	0	1	5	-1	6	6
Ownership	3	0	2	3	-2	5	5
Total	75	13	11	88	-11	99	100

Notes: Core is the core score in the major category as stated in the CGI scoring framework. Bonuses are score that would be given for extra disclosure as stated in the CGI scoring framework. Penalties are score that would be deducted as stated in the CGI scoring framework.

elements in category denote the absolute sum of maximum score and minimum score.

Source: APREA.

party transaction. There would also be penalties score if audit committee replaces unitholders in assessing related party transactions.

Gearing assessment includes the disclosure of gearing information, the voluntarily applied for rating, adequate information is provided about the optimal sources or uses of funds, unitholders are consulted about gearing decisions and look through gearing is reported. There would be penalties score if the borrowing costs are greater than 50% of net property income.

Ownership assessment includes the disclosure of the top 20 unitholders and concentration of ownership. There would be penalties score for REIT manager that has strategic shareholding in the REIT and shareholders related to sponsor or manager that have a blocking stake in the event of takeover.

The Table 3 below shows all the elements in the eight corporate governance categories and weights in the CGI scoring framework.

3.4. CGI regression models

The dependent variables in the regression models are REIT performance which includes ROA, ROE, Tobin's q, REIT return and excess return, respectively. There are being used to assess the corporate governance on the performance of REITs in Asia. The market return is also included as a control variable in the Tobin's q, REIT return and excess return regression model, respectively. Table 4 illustrates the dependent variables that are being used in the regression models.

3.5. Control variables

Table 5 illustrates the control variables that are being used in the regression models.

Table 4. Dependent variables in the regression models.

Subsection	Description
3.4.1	<p><i>REIT performance, REIT value, REIT return and excess return models</i></p> <p>The general regression model of REIT corporate governance is as follows: Dependent variable_t = $\beta_0 + \beta_1 CGI_t + \sum_{i=2}^{i=n} \beta_i (\text{Control Variable}_t) + \varepsilon_t$</p> <p>The general regression model of REIT individual corporate governance attribute is as follows: Dependent variable_t = $\beta_0 + \beta_1 \text{BoardMatters}_t + \beta_2 \text{AuditCommittee}_t + \beta_3 \text{Remuneration}_t$ $+ \beta_4 \text{Organization}_t + \beta_5 \text{Fees}_t + \beta_6 \text{RPT}_t + \beta_7 \text{Gearing}_t$ $+ \beta_8 \text{Ownership}_t + \sum_{i=9}^{i=n} \beta_i (\text{ControlVariable}_t) + \varepsilon_t$</p> <p>where Dependent variable denotes ROA, ROE, Tobin's q, REIT return and excess return, respectively in the model; CGI denotes the score of corporate governance index (CGI) in REIT CGI score; Board Matters is defined as the score of board matters in REIT CGI score; Audit Committee is defined as the score of audit committee in REIT CGI score; Remuneration is defined as the score of remuneration matters in REIT CGI score; Organization is defined as the score of REIT organization in REIT CGI score; Fees is defined as the score of fees in REIT CGI score; RPT is defined as the score of related party transactions in REIT CGI score; Gearing is defined as the score of gearing in REIT CGI score; Ownership is defined as the score of ownership in REIT CGI score; $\sum_{i=2}^{i=n} \beta_i (\text{Control Variable}_t)$ denotes the control variable and n is a numeric number; $\sum_{i=9}^{i=n} \beta_i (\text{Control Variable}_t)$ denotes the control variable and n is a numeric number; ε_t denotes the error term in the regression model.</p>
3.4.2	<p><i>REIT value model</i></p> <p>The Tobin's q is defined as follows: Tobin's $q_t = (\text{MVA}_t + \text{PS}_t + \text{Debt}_t) / \text{BV Asset}_t$ where MVA_t denotes market value of common equity at time t; PS_t denotes market value of preferred equity at time t; Debt_t denotes book value of total debt at time t; BV Asset_t denotes book value of total assets at time t.</p>
3.4.3	<p><i>REIT total return model</i></p> <p>The REIT return is defined as REIT total stock return as follows: REIT Return_t = $((P_t - P_{t-1}) + \text{Dividend}_t) / P_{t-1}$ where REIT Return_t denotes REIT total stock return at time t; P_t denotes stock price at time t; P_{t-1} denotes stock price at time t-1; Dividend_t denotes dividend at time t</p>
3.4.4	<p><i>REIT excess return model</i></p> <p>The excess return is defined as follows: Excess Return_t = $R_{i,t} - R_{f,t} = \alpha_i + \beta (R_{m,t} - R_{f,t}) + \varepsilon_t$ where α_i denotes the Jensen alpha; R_{i,t} denotes the monthly return on REIT stock; R_{f,t} denotes the monthly return on the risk-free three month Treasury bill; R_{m,t} denotes the corresponding monthly return on the market portfolio; ε_t denotes the error term.</p>

4. Results

4.1. The analysis of CGI on ROA, ROE and Tobin's q for the REITs in Asia

The results in Table 6 show that all models passed all the Sargan test and AR(1) and AR(2) tests, respectively.

Table 5. Control variables in the regression models.

Variable	Description
Size	Following the REIT literature studies in Ooi and Liow (2004), Lecomte and Ooi (2013) and Iskandar, Bukit, and Sanusi (2012), the natural log of total assets as the proxy for firm size is included in the regression model. The size is defined as follows: $Size_t = \ln(\text{Total Assets}_t)$
Age	The literatures in Coad, Segarra, and Teruel (2013), Jelinek and Stuerke (2009), Hijazi and Conover (2011) and Fleming, Heaney, and McCosker (2005) also use age as a control variable in their studies. Therefore, firm age is used as a control variable. The age is defined as follows: $Age_t = \text{Age at time } t$
Growth	The growth is defined as follows: $Growth, MTB_t = \text{Market-to-book value}_t = (\text{Book Value of Assets}_t - \text{Book Value of Equity}_t + \text{Market Value of Equity}_t) / \text{Book Value of Assets}_t$ The growth is used as a control variable because firm performance depends on a firm's investment opportunities (Hutchinson & Gul, 2004) and (Chen & Chen, 2012) although Baker (1993) and Gul (1999) posit a basic negative association between an exogenous variable, growth opportunities and firm performance. The other literatures in REITs include Noguera (2012) use market-to-book ratio of equity and Lecomte and Ooi (2013) use market-to-book value in year t as a control variable, respectively. Thus, the proxy for growth is market-to-book value; which is as a control variable.
Leverage	The leverage is defined as follows: $Leverage_t = \text{Debt} / \text{Asset}_t$ The literatures in REITs such as Noguera (2012) and Lecomte and Ooi (2013) also include leverage as a control variable in their regression models. The other literatures include Myers (1977), Easterbrook (1984), Smith and Watts (1992), Iskandar et al. (2012) and Al-Najjar (2013) also contend that financial leverage could influence firm performance. Therefore, the leverage is included as a control variable.
Dividend Payout Ratio	Following the literatures in Feng et al. (2007b), John and Knyazeka (2006), John, Knyazeva and Knyazeva (2011), Lee, Gupta, Chen, and Lee (2011), DeAngelo, DeAngelo, and Stulz (2006), Adjaoud and Ben-Amar (2010) and Henry (2010), the dividend payout ratio is included as a control variable. The dividend payout ratio is defined as follows: $\text{Dividend Payout Ratio}_t = \text{Total Dividend}_t / \text{Net Income}_t$
Profitability	Following the literatures in Al-Najjar (2013), Al-Najjar and Belghitar (2011), Jirapon, Kim, and Kim (2011), the profitability is defined as follows: $\text{Profitability}_t = \text{Net Income After Interest and Taxes}_t / \text{Book Value of Equity}_t$ The profitability is being used as a control variable because the profit of the individual REIT might be different among the REITs and this profit would have significant impact on performance.
Market return	Market return refers to the return of major stock exchange indices of the respective countries. For Japan, Tokyo Price Index (TOPIX) is being used; for Singapore, Straits Times Index (STI) is being used; for Malaysia, Bursa Malaysia Kuala Lumpur Composite Index (KLCI) is being used; and for Hong Kong, Hang Seng Index (HSI) is being used as market return. The market return is defined as follows: $Rm_t = (X_t - X_{t-1}) / X_{t-1}$ Rm_t denotes market return at time t , a control variable; X_t denotes market index at time t ; X_{t-1} denotes market index at time $t-1$.

The CGI is significantly positive at 1% level to ROA, in Model 1. This depicts that corporate governance has significant impact on ROA in the REITs in Asia. This is consistent with Chong, Ting, and Cheng (in press).

In addition, size and profitability are significantly positive at 1% level to ROA, respectively in Model 1. This is also observed in the robust standard error model in Model 2. This shows that bigger REITs have the competitive advantage and competitive edge to perform better. The profitability helps to enhance the ROA in REITs in Asia. This is also consistent with Chong et al. (in press).

Nevertheless, age, growth, leverage and dividend payout ratio are significantly negative at 1% level to ROA, respectively in Model 1. The growth is consistent with Baker (1993) and Gul (1999).

Table 6. The results of corporate governance index (CGI) on return on assets (ROA), return on equity (ROE) and Tobin's q for the REITs in Asia.

Items	Two-step diff	Two-step diff	Two-step diff	Two-step diff	Two-step diff	Two-step diff
	GMM	GMM with robust SE	GMM	GMM with robust SE	GMM	GMM with robust SE
	Model 1 ROA	Model 2 ROA	Model 3 ROE	Model 4 ROE	Model 5 TOBIN Q	Model 6 TOBIN Q
Lagged 1	-0.0044087 (-1.64)	-0.0044087 (-0.24)	0.0069361 (2.80)***	0.0069361 (0.25)	-0.0108749 (-1.99)**	-0.0108749 (-0.83)
CGI	0.028898 (3.04)***	0.028898 (1.41)	0.0085799 (0.71)	0.0085799 (0.32)	-0.0000199 (-0.09)	-0.0000199 (-0.04)
Size	4.410178 (4.43)***	4.410178 (1.97)**	5.38306 (4.24)***	5.38306 (1.73)*	-0.1341545 (-5.15)***	-0.1341545 (-2.47)**
Age	-0.1872935 (-2.90)***	-0.1872935 (-1.47)	-0.2718927 (-3.39)***	-0.2718927 (-1.39)	0.0109167 (7.10)***	0.0109167 (3.41)***
Growth	-2.024318 (-5.69)***	-2.024318 (-1.51)	-1.408765 (-3.53)***	-1.408765 (-1.12)	0.9992811 (119.34)***	0.9992811 (59.50)***
Leverage	-2.439428 (-3.29)***	-2.439428 (-1.12)	-3.443529 (-1.51)	-3.443529 (-0.64)	0.178441 (3.52)***	0.178441 (1.33)
Divpay Ratio	-0.4694359 (-4.75)***	-0.4694359 (-1.91)*	-0.1536991 (-1.78)*	-0.1536991 (-0.71)	-0.0012864 (-1.10)	-0.0012864 (-0.54)
Profitability	63.84747 (116.35)***	63.84747 (26.17)***	108.1342 (116.72)***	108.1342 (31.62)***	0.0243082 (2.09)**	0.0243082 (0.99)
Market return					-0.0099048 (-4.45)***	-0.0099048 (-1.78)*
Constant	-22.94675 (-3.91)***	-22.94675 (-1.78)*	-29.27642 (-4.11)***	-29.27642 (-1.65)*	0.6499978 (4.43)***	0.6499978 (2.23)**
Sargan test	28.0572 [0.4080]		22.54138 [0.7094]		33.99629 [0.2394]	
AR(1)	-2.1602 [0.0308]**	-2.1521 [0.0314]**	-1.6623 [0.0965]*	-1.6511 [0.0987]*	-1.1844 [0.2363]	-1.1595 [0.2462]
AR(2)	0.96856 [0.3328]	0.95821 [0.3380]	0.30364 [0.7614]	0.18058 [0.8567]	-0.09556 [0.9239]	-0.0953 [0.9241]
No of observations	229	229	232	232	245	245
No of instruments	36	36	36	36	39	39

Notes: Z-statistics are in parentheses and *p*-values are in squared brackets.

***, **, and * indicate significance at 1, 5 and 10% level, respectively.

However, only dividend payout ratio is significantly negative at 10% level to ROA in the robust standard error model in Model 2.

The results in Table 6 also show that lagged return on equity (lagged ROE) is significantly positive at 1% level to ROE. The lagged ROE asserts a positive relationship on ROE. It is dynamic in the model. This is not consistent with Chong et al. (in press).

In addition, the age, growth and dividend payout ratio are significantly negative to the ROE, respectively in Model 3. The growth is consistent with Baker (1993) and Gul (1999). However, size and profitability are significantly positive at 1% level to ROE, respectively in Model 3. This is also observed in the robust standard error model in Model 4. This is also consistent with the results of ROA in Model 1 and Model 2 whereby size and profitability help to enhance the performance of REITs in Asia.

The results in Table 6 also show that lagged Tobin's q is significantly negative at 5% level to Tobin's q in Model 5. The lagged Tobin's q asserts a negative relationship on Tobin's q. It is dynamic in the model.

Table 7. The results of corporate governance index (CGI) on REIT return and excess return for the REITs in Asia.

Items	Two-step diff GMM	Two-step diff GMM with Robust SE	Two-step diff GMM	Two-step diff GMM with Robust SE
	Model 1 REIT return	Model 2 REIT return	Model 3 excess return	Model 4 excess return
Lagged 1	-0.0962428 (-5.81)***	-0.0962428 (-2.81)***	-0.2065627 (-8.74)***	-0.2065627 (-3.15)***
CGI	-0.0118649 (-3.49)***	-0.0118649 (-1.46)	-0.0133399 (-5.08)***	-0.0133399 (-2.88)***
Size	-0.540354 (-2.46)**	-0.540354 (-1.43)	-0.4350755 (-2.45)**	-0.4350755 (-1.82)*
Age	0.0550736 (4.73)***	0.0550736 (2.11)**	0.0679419 (6.95)***	0.0679419 (3.45)***
Growth	0.4944732 (7.23)***	0.4944732 (2.41)**	0.2308181 (2.14)**	0.2308181 (1.16)
Leverage	0.0628363 (0.22)	0.0628363 (0.12)	0.0855024 (0.38)	0.0855024 (0.20)
Divpay ratio	0.0272612 (1.18)	0.0272612 (0.61)	0.0361507 (2.32)**	0.0361507 (1.50)
Profitability	0.3659834 (1.76)*	0.3659834 (0.87)	0.1424115 (0.94)	0.1424115 (0.65)
Market return	1.214524 (33.76)***	1.214524 (15.37)***	0.2323435 (7.00)***	0.2323435 (4.60)***
Constant	3.099845 (2.45)**	3.099845 (1.42)	2.616199 (2.54)**	2.616199 (1.93)*
Sargan test	40.45825 [0.0767]*		26.063 [0.6221]	
AR(1)	-4.5003 [0.0000]***	-4.3456 [0.0000]***	-3.5492 [0.0004]***	-3.1107 [0.0019]***
AR(2)	-0.66479 [0.5062]	-0.55549 [0.5786]	-0.8875 [0.3748]	-0.68421 [0.4938]
No of observations	257	257	257	257
No of instruments	39	39	39	39

Notes: Z-statistics are in parentheses and p-values are in squared brackets.

***, **, and * indicate significance at 1, 5 and 10% level, respectively.

The age, growth, leverage and profitability are significantly positive to Tobin's q, respectively. Only age and growth are significantly positive to Tobin's q, respectively, in the robust standard error model in Model 6.

Nonetheless, the size and market return are significantly negative at 1% level to Tobin's q, respectively, in Model 5. This is also observed in robust standard error model in Model 6.

Interestingly, the constant is significant in all the models, respectively. Thus, this supports the fact that the individual REIT in Asia possesses its own unique characteristics.

4.2. The analysis of CGI on REIT return and excess return for the REITs in Asia

The results in Table 7 show that only Model 2, Model 3 and Model 4 passed the relevant Sargan test and AR(1) and AR(2) tests, respectively. The Model 1 failed to pass the Sargan test.

The lagged REIT return is significantly negative at 1% level to REIT return. The lagged REIT return asserts a negative relationship on REIT return. It is dynamic in the model. This is consistent with Chong et al. (in press).

However, the age, growth and market return are significantly positive to REIT return, respectively in Model 2.

The results in Table 7 also show that lagged excess return is also significantly negative at 1% level to excess return. This is also observed in the robust standard error model in Model 4. The lagged excess return asserts a negative relationship on excess return. It is dynamic in the model. This is also consistent with Chong et al. (in press).

In addition, the CGI is also significantly negative at 1% level to excess return. This is also observed in the robust standard error model in Model 4. This is also consistent with Chong et al. (in press).

The CGI represents REIT corporate governance which acts to mitigate the excess return in Asia. Hence, the sign is in the opposite direction of excess return.

Nonetheless, the age, growth, dividend payout ratio and market return are significantly positive at 1% level, 5% level, 5% level and 1% level to REIT excess return, respectively. Only age and market return are significantly positive at 1% level to excess return, respectively, in the robust standard error model in Model 4.

The size is significantly negative at 5% level to excess return in Model 3. This is also observed in the robust standard error model in Model 4.

Interestingly, the constant is significantly positive in the Model 3 and Model 4, respectively. Thus, this supports the fact that the individual REIT in Asia possesses its own unique characteristics.

4.3. The analysis of individual corporate governance attribute on ROA, ROE and Tobin's q for the REITs in Asia

The results in Table 8 show that Model 1, Model 2, Model 3, Model 4, Model 5 and Model 6 passed all the Sargan test and AR(1) and AR(2) tests, respectively.

The results in Table 8 show that REIT organization is significantly negative at 5% level to ROA in Model 1. The REIT organization represents unitholders in AGM, REIT manager, trustee and corporate governance guidelines which assert a negative relationship on ROA.

However, the gearing is significantly positive at 1% level to ROA in Model 1. The gearing helps to accelerate the ROA in the REITs in Asia. Thus, it is in the same direction of ROA.

In addition, size and profitability are significantly positive at 1% level to ROA, respectively. This is also observed in the robust standard error model in Model 2. This shows that bigger REITs have the competitive advantage and competitive edge to perform better. The size and profitability help to enhance the ROA in REITs in Asia, respectively. This is also consistent with the results of ROA and ROE in Table 6.

Nonetheless, the age, growth, leverage and dividend payout ratio are significantly negative to ROA, respectively, in Model 1. This is also consistent with the results of ROA in Table 6. The growth is consistent with Baker (1993) and Gul (1999). However, only the age and leverage are significantly negative to ROA, respectively, in the robust standard error model in Model 2.

The remuneration matter and fees are significantly negative at 1% level to ROE, respectively, in Model 3. Nonetheless, the related party transaction and gearing are significantly positive at 1% level to ROE, respectively, in Model 3.

However, size and profitability are significantly positive to ROE, respectively, in Model 3. The profitability is also significant at 1% level in the robust standard error model in Model 4. The size and profitability help to enhance the ROE, respectively. This is also consistent

Table 8. The results of individual corporate governance attribute on return on assets (ROA), return on equity (ROE) and Tobin's Q for the REITs in Asia.

Items	Two-step diff	Two-step diff	Two-step diff	Two-step diff	Two-step diff	Two-step diff
	GMM	GMM with Robust SE	GMM	GMM with Robust SE	GMM	GMM with Robust SE
	Model 1 ROA	Model 2 ROA	Model 3 ROE	Model 4 ROE	Model 5 TOBIN Q	Model 6 TOBIN Q
Lagged 1	-0.0081284 (-1.18)	-0.0081284 (-0.47)	-0.0012218 (-0.35)	-0.0012218 (-0.04)	-0.0126021 (-2.46)**	-0.0126021 (-1.05)
Board Matters	-0.005867 (-0.14)	-0.005867 (-0.11)	-0.0256157 (-0.32)	-0.0256157 (-0.19)	-0.0032415 (-3.04)***	-0.0032415 (-2.25)**
Audit	0.1559242 (1.22)	0.1559242 (0.73)	-0.0425955 (-0.35)	-0.0425955 (-0.18)	-0.0067211 (-2.72)***	-0.0067211 (-1.78)*
Remuneration Matters	-0.0729794 (-0.85)	-0.0729794 (-0.61)	-0.1664807 (-2.70)***	-0.1664807 (-1.40)	-0.0016805 (-1.19)	-0.0016805 (-0.67)
REIT organization	-0.1337218 (-2.00)**	-0.1337218 (-0.95)	0.0595145 (1.21)	0.0595145 (0.51)	0.001416 (1.50)	0.001416 (1.15)
Fees	0.0311197 (0.73)	0.0311197 (0.42)	-0.1554725 (-2.76)***	-0.1554725 (-0.91)	-0.0015155 (-2.00)**	-0.0015155 (-0.96)
Related party transactions	0.0265036 (0.74)	0.0265036 (0.44)	0.0958756 (2.62)***	0.0958756 (1.08)	0.000683 (0.98)	0.000683 (0.67)
Gearing	0.1725182 (2.35)***	0.1725182 (1.24)	0.3451194 (3.23)***	0.3451194 (1.34)	0.009733 (4.81)***	0.009733 (2.70)***
Ownership	0.0504057 (0.64)	0.0504057 (0.38)	-0.0512688 (-0.58)	-0.0512688 (-0.28)	0.0043252 (3.64)***	0.0043252 (2.37)**
Size	5.449785 (4.19)***	5.449785 (2.35)***	4.252499 (2.51)**	4.252499 (1.28)	-0.107497 (-4.01)***	-0.107497 (-2.11)**
Age	-0.2327722 (-2.91)***	-0.2327722 (-1.75)*	-0.234044 (-2.78)***	-0.234044 (-1.29)	0.0095866 (5.90)***	0.0095866 (3.12)***
Growth	-1.400667 (-2.97)***	-1.400667 (-1.43)	-1.376979 (-3.70)***	-1.376979 (-1.55)	1.007393 (158.11)***	1.007393 (63.84)***
Leverage	-3.804289 (-3.63)***	-3.804289 (-2.13)**	-3.052317 (-1.17)	-3.052317 (-0.36)	0.1849084 (3.93)***	0.1849084 (1.73)*
Divpay ratio	-0.2292835 (-2.10)**	-0.2292835 (-1.13)	-0.1128132 (-1.05)	-0.1128132 (-0.44)	-0.0003551 (-0.30)	-0.0003551 (-0.15)
Profitability	63.07794 (55.90)***	63.07794 (24.81)***	108.787 (101.31)***	108.787 (20.95)***	0.0065606 (0.61)	0.0065606 (0.25)
Market return					-0.0076123 (-2.66)***	-0.0076123 (-1.17)
Constant	-28.51913 (-3.72)***	-28.51913 (-2.10)**	-22.47947 (-2.49)**	-22.47947 (-1.30)	0.4934168 (3.33)***	0.4934168 (1.84)*
Sargan test	18.05435 [0.9018]		20.93444 [0.7893]		32.60416 [0.2940]	
AR(1)	-2.0487 [0.0405]***	-2.0397 [0.0414]**	-1.7479 [0.0805]*	-1.7292 [0.0838]*	-0.731 [0.4648]	-0.71227 [0.4763]
AR(2)	0.75832 [0.4483]	0.74895 [0.4539]	-0.7631 [0.4454]	-0.39625 [0.6919]	-0.38686 [0.6989]	-0.38202 [0.7024]
No of observations	229	229	232	232	245	245
No of instruments	43	43	43	43	46	46

Notes: Z-statistics are in parentheses and p-values are in squared brackets. ***, **, and * indicate significance at 1, 5 and 10% level, respectively.

with the results of ROA and ROE in Table 6 whereby size and profitability help to enhance the performance of REITs in Asia.

Meanwhile, the age and growth are significantly negative at 1% level to ROE, respectively, in Model 3. The growth is consistent with Baker (1993) and Gul (1999).

In Model 5, the board matters, audit and fees are significantly negative to Tobin's q, respectively. The board matters and audit are also significantly negative in the robust standard

error model in Model 6. The board matters, audit and fees have significant negative impact on the value of REITs in Asia. These discount the value of REITs in Asia.

Meanwhile, gearing and ownership are significantly positive at 1% level to Tobin's q, respectively. The gearing and ownership also show significance in the robust standard error model in Model 6. The gearing and ownership help to enhance the REIT value in Asia. The ownership represents the ownership in REITs. It is evident that gearing and ownership would influence and enhance the value of REITs in Asia. However, the result of the ownership is contrary to the finding of S-REITs in Chong et al. ([in press](#)).

The results in Table 8 also show that lagged Tobin's q is significantly negative at 5% level to Tobin's q in Model 5. The lagged Tobin's q asserts a negative relationship on Tobin's q. It is dynamic in the model.

The age, growth and leverage are significantly positive at 1% level to Tobin's q, respectively in Model 5. There are also significant in the robust standard error model in Model 6. The age, growth and leverage help to enhance the value of REITs in Asia.

However, size and market return are significantly negative at 1% level to Tobin's q, respectively in Model 5. Only size is significant in the robust standard error model in Model 6.

4.4. The analysis of individual corporate governance attribute on REIT return and excess return for the REITs in Asia

The results in Table 9 show that only Model 2, Model 3 and Model 4 passed the relevant Sargan test and AR(1) and AR(2) tests, respectively. The Model 1 failed to pass the Sargan test.

The results in Table 9 also show that lagged REIT return is significantly negative at 1% level to REIT return. The lagged REIT return asserts a negative relationship on REIT return. It is dynamic in the model. This is also consistent with Chong et al. ([in press](#)).

In addition, only audit is significantly negative at 5% level to REIT return in Model 2.

However, the age, growth and market return are significantly positive at 10% level, 5% level and 1% level to REIT return, respectively, in Model 2. The age, growth and market return are consistent with Chong et al. ([in press](#)) and the results of REIT return in Table 7.

In Model 3, the lagged excess return is also significantly negative at 1% level to excess return. This is also observed in the robust standard error model in Model 4. The lagged excess return asserts a negative relationship on excess return. It is dynamic in the model.

In addition, ownership is also significantly negative at 10% level to excess return in Model 3. The ownership represents the ownership in REITs. This includes the disclosure of top 20 unitholders in the annual report and blocking stake shareholders who are linked to sponsor or REIT manager in REITs in Asia. The results indicate that ownership asserts a negative relationship on excess return in the REITs in Asia. This also depicts that there is minimum protection for investor whereby the ownership is significantly negative at 10% level only.

The size is also significantly negative at 1% level to excess return in Model 3. This is also observed in the robust standard error model in Model 4.

Nonetheless, the age and market return are significantly positive at 1% level to REIT excess return, respectively, in Model 3. This is also observed in the robust standard error model in Model 4.

Besides that, the growth is also significantly positive at 10% level to REIT excess return in Model 3.

Table 9. The results of individual corporate governance attribute on REIT return and excess return for the REITs in Asia.

Items	Two-step diff GMM	Two-step diff GMM with Robust SE	Two-step diff GMM	Two-step diff GMM with Robust SE
	Model 1 REIT return	Model 2 REIT return	Model 3 excess return	Model 4 excess return
Lagged 1	-0.0964321 (-6.27)***	-0.0964321 (-2.57)***	-0.207171 (-7.42)***	-0.207171 (-3.13)***
Board Matters	-0.0151779 (-1.11)	-0.0151779 (-0.50)	-0.0128312 (-0.96)	-0.0128312 (-0.76)
Audit	-0.0853186 (-3.59)***	-0.0853186 (-2.13)**	-0.0379666 (-1.58)	-0.0379666 (-1.20)
Remuneration matters	-0.0105336 (-0.47)	-0.0105336 (-0.25)	-0.0085298 (-0.43)	-0.0085298 (-0.39)
REIT Organization	-0.0230828 (-2.76)***	-0.0230828 (-1.19)	-0.0074567 (-0.77)	-0.0074567 (-0.53)
Fees	0.0188244 (1.58)	0.0188244 (0.77)	-0.0093508 (-1.30)	-0.0093508 (-0.81)
Related party trans- actions	-0.0195406 (-1.34)	-0.0195406 (-0.63)	-0.017281 (-1.43)	-0.017281 (-0.88)
Gearing	0.0241808 (0.82)	0.0241808 (0.41)	0.0352602 (1.36)	0.0352602 (0.94)
Ownership	-0.0238828 (-0.48)	-0.0238828 (-0.20)	-0.0542734 (-1.68)*	-0.0542734 (-0.89)
Size	-0.5893056 (-2.53)**	-0.5893056 (-1.44)	-0.4780523 (-2.68)***	-0.4780523 (-1.71)*
Age	0.0502319 (3.94)***	0.0502319 (1.91)*	0.0631212 (6.29)***	0.0631212 (3.27)***
Growth	0.3937686 (5.89)***	0.3937686 (2.20)**	0.1963199 (1.80)*	0.1963199 (0.98)
Leverage	0.2617638 (0.93)	0.2617638 (0.49)	0.0976237 (0.47)	0.0976237 (0.23)
Divpay ratio	0.0383984 (1.58)	0.0383984 (0.92)	0.0271936 (1.49)	0.0271936 (0.99)
Profitability	0.2883441 (1.26)	0.2883441 (0.67)	0.1574507 (1.04)	0.1574507 (0.70)
Market return	1.222055 (32.47)***	1.222055 (15.80)***	0.2577107 (6.45)***	0.2577107 (4.24)***
Constant	3.409676 (2.53)**	3.409676 (1.44)	2.814626 (2.73)***	2.814626 (1.78)*
Sargan test	41.00486 [0.0688]*		27.37943 [0.5512]	
AR(1)	-4.3162 [0.0000]***	-4.1248 [0.0000]***	-3.7497 [0.0002]***	-3.3491 [0.0008]***
AR(2)	-0.26806 [0.7887]	-0.21056 [0.8332]	-0.38111 [0.7031]	-0.30476 [0.7605]
No of observations	257	257	257	257
No of instruments	46	46	46	46

Notes: Z-statistics are in parentheses and p-values are in squared brackets.

***, **, and * indicate significance at 1, 5 and 10% level, respectively.

As a whole, the results are consistent with Chong et al. (in press). The Table 10 illustrates the summary of the findings on Asian REITs corporate governance.

5. Conclusion

This study contributes to the current limited literature on REIT corporate governance in Asia by assessing the impacts of corporate governance on the performance of Asian REITs by using the standard CGI scoring framework developed by APREA.

This study employs GMM method by using panel data of the four biggest Asian REITs markets namely Japan, Singapore, Hong Kong and Malaysia from year 2008 to 2012. The Sargan test and AR(1) and AR(2) tests are used to assess the model.

It is evident that corporate governance not only helps to improve the ROA but also helps to gauge excess return of REITs in Asia. This is consistent with Chong et al. (in press). This clearly sees the significance and importance of REIT corporate governance in the existing externally managed REIT structure in Asia even though REIT industry is a highly regulated industry.

Nevertheless, the results are contrary to Lecomte and Ooi (2013) which showed no evidence of corporate governance improving ROA and ROE in Singapore REITs.

The findings show that lagged dependent variable in Tobin's q, REIT return and excess return are significantly negative to its dependent variable, Tobin's q, REIT return and

Table 10. Summary of the findings on Asian REITs corporate governance.

Item no.	Summary of findings
1.	The findings indicate that corporate governance not only helps to improve the return on assets (ROA) but also helps to gauge excess return in Asian REITs. This is consistent with Chong et al. (in press).
2.	The findings show that lagged dependent variable in Tobin's q, REIT return and excess return are significantly negative to its dependent variable, Tobin's q, REIT return and excess return, respectively. The lagged dependent variable asserts a negative relationship on its own dependent variable, respectively. There are dynamic and complex in the models in Asian REITs. This is also consistent with Chong et al. (in press).
3.	However, the lagged return on equity (lagged ROE) asserts a positive relationship on return on equity (ROE). It is dynamic in the model. This is not consistent with Chong et al. (in press).
4.	The findings also depict that the REIT organization, remuneration matters and fees are significantly negative to Asian REITs performance.
5.	However, the gearing and related party transaction are significantly positive to return on assets (ROA) and return on equity (ROE), respectively.
6.	The board matters, audit and fees have significant negative impacts on Tobin's q, respectively. However, the gearing and ownership are significantly positive to Tobin's q, respectively.
7.	The audit is significantly negative to REIT return. It decreases the REIT return in Asia.
8.	The ownership is significantly negative at 10% level to excess return.
9.	The size is significantly positive to return on assets (ROA) and return on equity (ROE), respectively. However, the size is significantly negative to Tobin's q and excess return, respectively. The age is significantly negative to return on assets (ROA) and return on equity (ROE), respectively. However, the age is significantly positive to Tobin's q, REIT return and excess return, respectively. The growth is significantly negative to return on assets (ROA) and return on equity (ROE), respectively. However, the growth is significantly positive to Tobin's q, REIT return and excess return, respectively. The leverage is significantly negative to return on assets (ROA). However, the leverage is significantly positive to Tobin's q. The dividend payout ratio is significantly negative to return on assets (ROA) and return on equity (ROE), respectively. However, the dividend payout ratio is significantly positive to excess return. The profitability is significantly positive to return on assets (ROA), return on equity (ROE) and Tobin's q, respectively. The market return is significantly negative to Tobin's q. However, the market return is significantly positive to REIT return and excess return, respectively.

excess return, respectively. The lagged dependent variable asserts a negative relationship on its own dependent variable, respectively. There are dynamic and complex in the models in Asian REITs. The results in REIT return and excess return are consistent with Chong et al. (in press).

However, the lagged ROE asserts a positive relationship on ROE. It is dynamic in the model. This is not consistent with Chong et al. (in press).

Although the findings indicate that the REIT managers in Asia know how to gauge managerial optimism and manage the REITs to the equilibrium, but they face substantial cost in adjusting to equilibrium level whereby the optimum level is always dynamic and not constant, and it persists over time. The speed of adjustment is dependent upon on the lagged dependent variable. The speed of adjustment is given by 1 minus the estimated coefficient of the lagged dependent variable. This also implies that agency costs exist in the existing externally managed REIT structure in Asian REITs (Chong et al., 2015). This is also consistent with Chong et al. (in press).

The findings also depict that the REIT organization, remuneration matters and fees decrease the performance of REITs in Asia. These findings imply that further improvement and reform in REIT organization, remuneration matters and fees are necessary in order to increase the transparency and disclosure of corporate governance in the REITs in Asia.

The REITs in Asia could consider redefining the REIT management structure such as the internally managed REIT structure which depicts that the internally managed REIT structure outperforms the externally managed REIT structure in US REITs empirical studies (Cannon & Vogt, 1995; Capozza & Seguin, 2000; Clayton & MacKinnon, 2000; Ambrose & Linneman, 2001).

Nevertheless, the gearing helps to enhance the performance and accelerate the growth of REITs in Asia even though there is restriction on gearing accordingly in the respective country in Asian REITs. The related party transaction also helps to increase and enhance the ROE in Asian REITs. The finding implies that related party transaction is significant in Asian REITs. Thus, it is mandatory for further improvement and disclosure of related party transaction in REIT corporate governance in Asia.

Besides that, the board matters, audit and fees have significant negative impacts on Tobin's q and discount the value of REITs in Asia. These findings imply that the current REIT board of directors, audit and fee structure in REITs could not lure enough investor confidence in the capital market, and these board matters, audit and fees discount the value of the REITs in Asia. Further reform, transformation and disclosure in the board matters, audit and fee structure are needed in order to improve and to drive the strategic development of REITs in Asia.

However, interestingly, the ownership has significant positive impact on Tobin's q . The ownership enhances the value of REITs in Asia. This indicates that block ownership would influence and enhance the value of REITs in Asia. This is consistent with Prima et al. (2013) and Wong et al. (2013). Nonetheless, the result is contrary to the ownership finding in S-REITs in Chong et al. (in press).

The empirical finding also indicates that the audit which serves as guardian decreases the REIT return in Asia. This also implies that the audit could not lure enough investor confidence in the capital market and has significant negative impact on the REIT return in Asia. Further improvement in fiduciary duty of audit committee, reform in audit, absolute stringent financial reporting process and audit quality are needed in order to improve the transparency and disclosure of REITs in Asia.

Nonetheless, ownership is significantly negative at 10% level to excess return in the REITs in Asia. This also implies that the block ownership helps to curtail and mitigate excess return in the REITs in Asia. This is consistent with Prima and Stevenson (2015) whereby unitholders are generally and minimally protected.

As a whole, this study shows that there is still room for further improvement in REIT corporate governance in Asia in order to lure strong investor confidence; and to provide sufficient and high investor protection; and to facilitate strategic development in Asian REIT markets.

Besides that, the findings also depict that the Asian REITs possess their own unique characteristics. They differ in term of size, age and other aspects that may cause Asian REITs to vary differently. These include financial position, operation management, economy of scale and expertise in REIT management skills that may have different and significant impacts on the performance of REITs in Asia. The findings also show that the leverage, dividend payout ratio, growth and profitability can help to enhance or mitigate the performance of REITs in Asia.

Other factors that are needed for increased corporate governance in Asian REITs include absolute strong leadership, integrity, full commitment and participation from all levels of the REIT industry in order to scale new heights in the strategic development of REITs in Asia.

For other countries in Asia especially the emerging countries, they could consider absolute stringent corporate governance rules and regulations on REITs and the internally managed REIT structure in order to lure investor confidence and to provide sufficient investor protection; and to establish a more robust REIT market in these emerging markets.

The findings derived from this study can serve as useful reference and resourceful information for policy-makers and regulatory bodies in Asian REITs. The findings derived can be used by policy-makers as reference and guidelines and for further improvement in the specific area of the REIT corporate governance in Asia.

For REITs' board of directors and REIT managers, the findings derived from this study will help them to be more aware of the importance of corporate governance in Asian REITs. The findings also serves as reference and resourceful information for them in understanding which are the specific areas in corporate governance that can have significant positive or negative impacts on the performance of REITs in Asia.

The findings derived from this study can also alert the institutional investors and retail investors for their portfolio management and decision-making process. The empirical results will help them to reveal the specific area in the REIT corporate governance that can improve performance; and discount the value of Asian REITs.

The empirical findings also imply that REIT corporate governance complements the institutional legal setting (Becher & Frye, 2011) and the externally managed REITs in Asia even though REIT industry is a highly regulated industry. Moreover, the Asian REITs are in the infancy stage and the agency costs exist in the inherent satellite structure of REITs in Asia (Chong et al., 2015).

Generally, this empirical research helps to improve the transparency and disclosure of corporate governance in Asian REITs. In addition, it can be seen that there is still room for improvement in the REIT corporate governance in order to facilitate the strategic development and growth of REITs in Asia into a more mature phase and to enhance the investor relationship in Asian REITs. This paper has significant contributions and benefits to all levels of the REIT industry in Asia from policy-makers, REITs' board of directors, REIT managers, institutional investors and retail investors as well.

Lastly, the study period of this research is from year 2008 to 2012. This time span is short due to the newly implemented REIT corporate governance scoring framework developed by APREA. For future research, longer time frame and more countries on REITs will improve the robustness of the research outcome. Besides that, researchers can embark on specific area or issue of REIT corporate governance in Asia.

Disclosure statement

No potential conflict of interest was reported by the authors.

References

Adjaoud, F., & Ben-Amar, W. (2010). Corporate governance and dividend policy: Shareholders' protection or expropriation? *Journal of Business Finance and Accounting*, 37, 648–667.

- Agrawal, A., & Knoeber, C. R. (1996). Firm performance and mechanisms to control agency problems between managers and shareholders. *The Journal of Financial and Quantitative Analysis*, 31, 377–397.
- Al-Najjar, B. (2013). The financial determinants of corporate cash holdings: Evidence from some emerging markets. *International Business Review*, 22, 77–88.
- Al-Najjar, B., & Belghitar, Y. (2011). Corporate cash holdings and dividend payments: Evidence from simultaneous analysis. *Managerial and Decision Economics*, 32, 231–241.
- Ambrose, B., & Linneman, P. (2001). REIT organizational structure and operating characteristics. *Journal of Real Estate Research*, 21, 146–162.
- Anglin, P., Edelstein, R., Gao, Y., & Tsang, D. (2011). How does corporate governance affect the quality of investor information? The curious case of REITs. *Journal of Real Estate Research*, 33(1), 1–24.
- Anglin, P., Edelstein, R., Gao, Y., & Tsang, D. (2013). What Is the Relationship Between REIT Governance and Earnings Management. *The Journal of Real Estate Finance and Economics*, 47, 538–563.
- APREA. (2014). *Asia Pacific REITs: A comparative regulatory and tax study*. Singapore: Asia Pacific Real Estate Association.
- Atchison, K., & Yeung, V. S. (2014). *The impacts of REITs on Asian economies*. Singapore: Asia Pacific Real Estate Association Limited.
- Baker, G. P. (1993). Growth, corporate policies, and investment opportunity set. *Journal of Accounting and Economics*, 16, 161–165.
- Bauer, R., Eichholtz, P. M. A., & Kok, N. (2010). Corporate governance and performance: The REIT effect. *Real Estate Economics*, 38(1), 1–29.
- Becher, D. A., & Frye, M. B. (2011). Does regulation substitute or complement governance? *Journal of Banking and Finance*, 35, 736–751.
- Beiner, S., Drobotz, W., Schmid, M., & Zimmermann, H. (2006). An integrated framework of corporate governance and firm valuation. *European Financial Management*, 12, 249–283.
- Bianco, C., Ghosh, C., & Sirmans, C. F. (2007). The impact of corporate governance on the performance of REITs. *The Journal of Portfolio Management*, 33, 175–191.
- Campbell, R. D., Ghosh, C., Petrova, M., & Sirmans, C. F. (2011). Corporate governance and performance in the market for corporate control: The case of REITs. *The Journal of Real Estate Finance and Economics*, 42, 451–480.
- Cannon, S. E., & Vogt, S. C. (1995). REITs and their management: An analysis of organizational structure, performance, and management compensation. *Journal of Real Estate Research*, 10, 297–318.
- Capozza, D. R., & Seguin, P. J. (2000). Debt, agency, and management contracts in REITs: The external advisor puzzle. *The Journal of Real Estate Finance and Economics*, 20, 91–116.
- Capozza, D. R., & Seguin, P. J. (2003). Inside ownership, risk sharing, Tobin's Q ratio: Evidence from REITs. *Real Estate Economics*, 31, 367–404.
- Chan, S. H., Leung, W. K., & Wang, K. (1998). Institutional investment in REITs: Evidence and implications. *Journal of Real Estate Research*, 16, 357–374.
- Chang, C. Y., Chou, J. H., & Fung, H. G. (2012). Time dependent behavior of the Asian and the US REITs around the subprime crisis. *Journal of Property Investment and Finance*, 30, 282–303.
- Chen, S. S., & Chen, I. J. (2012). Corporate governance and capital allocations of diversified firms. *Journal of Banking and Finance*, 36, 395–409.
- Chiang, M. C., Tsai, I. C., & Sing, T. F. (2013). Are REITs a good shelter from financial crises? Evidence from the Asian markets. *Journal of Property Investment and Finance*, 31, 237–253.
- Chong, W. L., Hassan, T., Ting, K. H., and Cheng, F. F. (2015). *Free cash flow and its impacts on agency costs and performance of REITs in Asia*. Proceedings of the 25th International Business Information Management Association Conference – Innovation Vision 2020: From Regional Development Sustainability to Global Economic Growth, IBIMA 2015, Amsterdam, pp. 3398–3418.
- Chong, W. L., Ting, K. H. and Cheng, F. F. (in press). The impacts of corporate governance on the performance of REITs in Singapore. *Journal of Real Estate Literature*.
- Chung, R., Fung, S., & Hung, K. S. (2012). Institutional investors and firm efficiency of real estate investment trusts. *The Journal of Real Estate Finance and Economics*, 45, 171–211.

- Coad, A., Segarra, A., & Teruel, M. (2013). Like milk or wine: Does firm performance improve with age? *Structural Change and Economic Dynamics*, 24, 173–189.
- Clayton, J., & MacKinnon, G. (2000). Measuring and explaining changes in REIT liquidity: Moving beyond the bid-ask spread. *Real Estate Economics*, 28, 89–115.
- DeAngelo, H., DeAngelo, L., & Stulz, R. (2006). Dividend policy and the earned/contributed capital mix: A test of the life-cycle theory. *Journal of Financial Economics*, 81, 227–254.
- Devos, E., Ong, S. E., Spieler, A. C., & Tsang, D. (2013). REIT institutional ownership dynamics and the financial crisis. *The Journal of Real Estate Finance and Economics*, 47, 266–288.
- Dolde, W., & Knopf, J. D. (2010). Insider ownership, risk, and leverage in REITs. *The Journal of Real Estate Finance and Economics*, 41, 412–432.
- Drobotz, W., Schillhofer, A., & Zimmermann, H. (2004). Corporate governance and expected stock returns: Evidence from Germany. *European Financial Management*, 10, 267–293.
- Durnev, A., & Kim, E. H. (2005). To steal or not to steal: Firm attributes, legal environment, and valuation. *The Journal of Finance*, 60, 1461–1493.
- Easterbrook, F. (1984). Two agency-cost explanations of dividends. *American Economic Review*, 74, 650–659.
- Edelstein, R., Qian, W., & Tsang, D. (2011). How do institutional factors affect international real estate returns? *The Journal of Real Estate Finance and Economics*, 43, 130–151.
- Eichholtz, P. M. A., & Kok, N. (2008). How does the market for corporate control function for properties companies? *The Journal of Real Estate Finance and Economics*, 36, 141–163.
- Frank, L. A. C., & Ghosh, C. (2012). Does firm governance affect institutional investment? Evidence from real estate investment trusts. *Applied Financial Economics*, 22, 1063–1078.
- Feng, Z., Ghosh, C., & Sirmans, C. F. (2005). How important is the board of directors to REIT performance? *Journal of Real Estate Portfolio Management*, 11, 281–294.
- Feng, Z., Ghosh, C., & Sirmans, C. F. (2007a). Director compensation and CEO bargaining power in REITs. *The Journal of Real Estate Finance and Economics*, 35, 225–251.
- Feng, Z., Ghosh, C., & Sirmans, C. F. (2007b). CEO involvement in director selection: Implications for REIT dividend policy. *The Journal of Real Estate Finance and Economics*, 35, 385–410.
- Flannery, M. J., & Hankins, K. W. (2013). Estimating dynamic panel models in corporate finance. *Journal of Corporate Finance*, 19, 1–19.
- Fleming, G., Heaney, R., & McCosker, R. (2005). Agency costs and ownership structure in Australia. *Pacific-Basin Finance Journal*, 13, 29–52.
- Friday, H. S., & Sirmans, G. S. (1998). Board of director monitoring and firm value in REITs. *Journal of Real Estate Research*, 16, 411–427.
- Friday, H. S., Sirmans, G. S., & Conover, C. M. (1999). Ownership structure and the value of the firm: The case of REITs. *Journal of Real Estate Research*, 17, 71–90.
- Ghosh, C., Giambona, E., Harding, J. P., & Sirmans, C. F. (2011). How entrenchment, incentives and governance influence REIT capital structure. *The Journal of Real Estate Finance and Economics*, 43, 39–72.
- Ghosh, C., Petrova, M., & Xiao, Y. (2012). Do REITs use cash reserves efficiently? Evidence from corporate acquisitions. *Journal of International Money and Finance*, 31(7), 1953–1970.
- Ghosh, C., & Sirmans, C. F. (2003). Board independence, ownership structure and performance: Evidence from real estate investment trusts. *The Journal of Real Estate Finance and Economics*, 26(2/3), 287–318.
- Ghosh, C., & Sirmans, C. F. (2005). On REIT CEO compensation: Does board structure matter? *The Journal of Real Estate Finance and Economics*, 30, 397–428.
- Ghosh, C., & Sirmans, C. F. (2006). Do managerial motives impact dividend decisions in REITs. *The Journal of Real Estate Finance and Economics*, 32, 327–355.
- Gompers, P., Ishii, J., & Metrick, A. (2003). Corporate governance and equity prices. *The Quarterly Journal of Economics*, 118, 107–156.
- Gul, F. A. (1999). Growth opportunities, capital structure and dividend policies in Japan. *Journal of Corporate Finance*, 5, 141–168.
- Han, B. (2006). Insider ownership and firm value: Evidence from real estate investment trusts. *The Journal of Real Estate Finance and Economics*, 32, 471–493.

- Hartzell, J. C., Sun, L., & Titman, S. (2006). The effect of corporate governance on investment: evidence from real estate investment trusts. *Real Estate Economics*, 34, 343–376.
- Hartzell, J. C., Kallberg, J. G., & Liu, C. (2008). The role of corporate governance in initial public offerings: Evidence from real estate investment trusts. *The Journal of Law and Economics*, 51, 539–562.
- Henry, D. (2010). Agency costs, ownership structure and corporate governance compliance: A private contracting perspective. *Pacific-Basin Finance Journal*, 18, 24–46.
- Hijazi, B. M., & Conover, J. A. (2011). Empirical performance of accounting measures of direct agency costs. *Research in Finance*, 27, 223–272.
- Hutchinson, M., & Gul, F. A. (2004). Investment opportunities set, corporate governance practices and firm performance. *Journal of Corporate Finance*, 10, 595–614.
- Iskandar, T. M., Bukit, R. B., & Sanusi, Z. M. (2012). The moderating effect of ownership structure on the relationship between free cash flow and asset utilisation. *Asian Academy of Management Journal of Accounting and Finance*, 8, 69–89.
- Jensen, M. C. (1986). Agency cost of free cash flow, corporate finance, and takeovers. *American Economic Review*, 76, 323–329.
- Jirapon, P., Kim, J. C., & Kim, Y. S. (2011). Dividend payouts and corporate governance quality: An empirical investigation. *Financial Review*, 46, 251–279.
- Jelinek, K., & Stuerke, P. S. (2009). The nonlinear relation between agency costs and managerial equity ownership. *International Journal of Managerial Finance*, 5, 156–178.
- John, K., & Knyazeka, A. (2006). *Payout policy, agency conflicts and corporate governance*. Working Paper, New York University.
- John, K., Knyazeva, A., & Knyazeva, D. (2011). Does geography matter? Firm location and corporate payout policy. *Journal of Financial Economics*, 101, 533–551.
- Klapper, L. F., & Love, I. (2004). Corporate governance, investor protection, and performance in emerging markets. *Journal of Corporate Finance*, 10, 703–728.
- Kohl, N., & Schaefers, W. (2012). Corporate governance and market valuation of publicly traded real estate companies: Evidence from Europe. *The Journal of Real Estate Finance and Economics*, 44, 362–393.
- Kudus, S. S., & Sing, T. F. (2011). Interest alignment and insider shareholdings in the emerging Asian REIT Markets. *Journal of Real Estate Portfolio Management*, 17, 127–138.
- Kutsuna, K., Dimovski, W., & Brooks, R. (2008). The pricing and underwriting cost of Japanese REIT IPOs. *Journal of Property Research*, 25, 221–239.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (2000). Agency problems and dividend policies around the world. *The Journal of Finance*, 55(1), 1–33.
- Lecomte, P., & Ooi, J. T. L. (2013). Corporate governance and performance of externally managed Singapore reits. *The Journal of Real Estate Finance and Economics*, 46, 664–684.
- Lee, C. F., Gupta, M. C., Chen, H. Y., & Lee, A. C. (2011). Optimal payout ratio under uncertainty and the flexibility hypothesis: Theory and empirical evidence. *Journal of Corporate Finance*, 17, 483–501.
- Lee, M. L., Kuo, S. H., Lee, M. T., & Lin, C. W. (2011). Market signals associated with Taiwan REIT IPOs: Reactions of non-REIT real estate stocks. *Journal of Real Estate Literature*, 19, 93–110.
- Lin, T. C. (2007). The development of REIT markets and real estate appraisal in Taiwan. *Journal of Real Estate Literature*, 15, 281–301.
- Loo, W. K., Anuar, M. A., & Ramakrishnan, S. (2015). The dynamic linkage among the Asian REITS market. *Pacific Rim Property Research Journal*, 21, 115–126.
- Loo, W. K., Anuar, M. A., & Ramakrishnan, S. (2016). Integration between the Asian REIT markets and macroeconomic variables. *Journal of Property Investment and Finance*, 34, 68–82.
- Morck, R., Shleifer, A., & Vishny, R. W. (1988). Management ownership and market valuation: An empirical analysis. *Journal of Financial Economics*, 20, 293–315.
- Moss, A., & Prima, A. D. (2014). *Asia pacific listed real estate: A contextual performance analysis*. Singapore: Asia Pacific Real Estate Association Limited.
- Myers, S. C. (1977). The determinants of corporate borrowing. *Journal of Financial Economics*, 5, 147–175.

- Newell, G. (2012). *The investment characteristics and benefits of Asian REITs for retail investors*. Singapore: Asia Pacific Real Estate Association Limited.
- Newell, G., & Osmadi, A. (2009). The development and preliminary performance analysis of Islamic REITs in Malaysia. *Journal of Property Research*, 26, 329–347.
- Newell, G., & Osmadi, A. (2010). Assessing the Importance of factors influencing the future development of REITs in Malaysia. *Pacific Rim Property Research Journal*, 16, 358–374.
- Newell, G., & Peng, H. W. (2012). The significance and performance of Japan REITs in a mixed-asset portfolio. *Pacific Rim Property Research Journal*, 18, 21–34.
- Newell, G., Pham, A. K., & Ooi, J. T. L. (2015). The significance and performance of Singapore REITs in a mixed-asset portfolio. *Journal of Property Investment and Finance*, 33, 45–65.
- Newell, G., Ting, K. H., & Acheampong, P. (2002). Listed property trusts in Malaysia. *Journal of Real Estate Literature*, 10, 109–118.
- Newell, G., Wu, Y., Chau, K. W., & Wong, S. K. (2010). The development and performance of REITs in Hong Kong. *Pacific Rim Property Research Journal*, 16, 190–206.
- Noguera, M. (2012). The impact of the sarbanes-oxley act on the structure of REIT boards of directors. *The Journal of Real Estate Finance and Economics*, 45, 869–887.
- Ong, S. E., Ooi, J. T. L., & Kawaguichi, Y. (2011). Seasoned equity issuance By Japanese and Singapore REITs. *The Journal of Real Estate Finance and Economics*, 43, 205–220.
- Ooi, J. T. L., & Liow, K. H. (2004). Risk-adjusted performance of real estate stocks: Evidence from developing market. *Journal of Real Estate Research*, 26, 371–395.
- Ooi, J. T. L., Newell, G., & Sing, T. F. (2006). The growth of REIT markets in Asia. *Journal of Real Estate Literature*, 14, 203–222.
- Peng, H. W., & Newell, G. (2012). The role of Taiwan REITs in investment portfolios. *Pacific Rim Property Research Journal*, 18, 67–80.
- Pham, A. K. (2011a). The significance and performance of South Korean REITs in a mixed-asset portfolio. *Journal of Real Estate Literature*, 19, 373–390.
- Pham, A. K. (2011b). The performance of thai-reits in a mixed-asset portfolio. *Pacific Rim Property Research Journal*, 17, 197–214.
- Pham, A. K. (2012). The dynamics of return and volatility in the emerging and developed asian REIT markets. *Journal of Real Estate Literature*, 20, 79–96.
- Prima, A. D., & Stevenson, S. (2015). *Investor protection, corporate governance and firm performance: Evidence from Asian real estate investment trusts*. Paper presented in 22nd Annual European Real Estate Society Conference. ERES: Conference. Istanbul, Turkey.
- Prima, A. D., Stevenson, S., and Wyatt, P. (2013). *Sponsor, corporate governance and Asian REIT performance*. Paper presented at the European Real Estate Society 20th Annual Conference, Vienna, Austria.
- Schultz, E. L., Tan, D. T., & Walsh, K. D. (2010). Endogeneity and the corporate governance – Performance relation. *Australian Journal of Management*, 35, 145–163.
- Sing, T. F., & Ling, S. C. (2003). The role of Singapore REITs in a downside risk asset allocation framework. *Journal of Real Estate Portfolio Management*, 9, 219–236.
- Sing, T. F., Ho, K. H. D., & Mak, M. F. E. (2002). Real estate market reaction to public listings and acquisition news of Malaysian REITs. *Journal of Real Estate Portfolio Management*, 8, 209–227.
- Smith, C., & Watts, R. (1992). The investment opportunity set and corporate financing, dividend, and compensation policies. *Journal of Financial Economics*, 32, 263–292.
- Tsai, I. C. (2013). Volatility clustering, leverage, size, or contagion effects: The fluctuations of Asian real estate investment trust returns. *Journal of Asian Economics*, 27, 18–32.
- Tsai, I. C., & Lee, C. F. (2012). The convergent behavior in REIT markets. *Journal of Property Investment and Finance*, 30, 42–57.
- Wong, W. C., Ong, S. E., & Ooi, J. (2013). Sponsor backing in Asian REIT IPOs. *The Journal of Real Estate Finance and Economics*, 46, 299–320.
- Wintoki, M. B., Linck, J. S., & Netter, J. M. (2012). Endogeneity and the dynamics of internal corporate governance. *Journal of Financial Economics*, 105, 581–606.