

CORPORATE GOVERNANCE OF ASIAN REITS: INTRODUCING A NEW FRAMEWORK OF ANALYSIS

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Abstract

As the REIT regime has been expanding globally, corporate governance practices in emerging REIT markets have become a major concern for domestic and international investors alike. Idiosyncrasies stemming from the ownership models applied in Asian economies and the fact Asian REITs are often externally managed “captive entities” make issues pertaining to corporate governance of the listed real estate sector in Asia all the more important. To address these issues, the paper introduces an original framework that can be used to estimate the quality of corporate governance among externally managed Asian REITs. As a pilot study, the framework is applied to define a corporate governance index of REITs listed on the Singapore Stock Exchange (S-REITs). The index called R-Index enables the ranking of S-REITs' corporate governance practices. It is then used to examine the relationship between corporate governance and performance of S-REITs. The empirical tests based on several performance-related metrics provide evidence supporting a positive correlation between corporate governance practices identified in the R-Index and stock performances. However, we find no positive correlation with operating performance proxied by accounting measures. In other words, S-REITs with higher corporate governance tend to register better risk-adjusted returns but do not outperform operationally. To test for market efficiency, the study shows that S-REITs with the best corporate governance practices also have less information asymmetry.

Key words: REITs, corporate governance, firm value, performance

CORPORATE GOVERNANCE OF ASIAN REITS: INTRODUCING A NEW FRAMEWORK OF ANALYSIS

1.0 INTRODUCTION

With the rise of corporations, the separation of ownership from management has led to conflict of interests. Moral hazard problem, as it is referred to in the finance literature, is based on the premise that corporate managers do not always act in the best interest of the owners. In their seminal paper, Jensen and Meckling (1976) highlighted the tendency of managers to consume expensive perquisites when they own only a fraction of the firm's ownership. Managers are also prone to spending available funds in "empire building" projects that entrench their position and enhance their reputation, often at the expense of shareholders' interest (Ooi, 2000). Based on past scandals, outside investors would have little confidence in managers. Arguing for the importance of REIT corporate governance, Sirmans (1997) highlighted that "*the real estate markets have been plagued by 'entrepreneurs' who abscond with investors' money, from the 1920s' Florida land scandals to the real estate syndications of the late 1970s and early 1980s.*" Such scandals, of course, are not restricted only to real estate entrepreneurs. The shocking collapse of giant corporations, such as Enron and Worldcom, has led to major regulatory reforms on corporate practices, culminating in the introduction of the Sarbanes-Oxley Act in 2002.¹

The recent global financial crisis has further highlighted the importance of promoting adequate corporate governance practices. While it is sometimes argued that REIT-like regimes provide a regulatory framework that makes superfluous the need for stringent corporate governance rules, it makes no doubt countries with the greater scrutiny in terms of corporate governance provisions (e.g., USA) are also those where the best practices and the most

¹ The Sarbanes-Oxley Act of 2002, passed in response to the failure of large and previously successful corporations such as Enron, WorldCom, Tyco and Adelphia, is intended to prevent manipulation of internal governance mechanism by incumbent management. As noted by Bianco, Ghosh and Sirmans (2007), a primary focus of the Act was to legislate internal corporate governance with the expectation that improved monitoring will result in superior performance.

developed real estate capital markets can be found. Asian REITs are somewhat greenfields in terms of corporate governance, in part due to the fact that REIT regimes are still relatively new in Asia but also because of Asian REITs' structural idiosyncrasies. In recent years, many Asian countries have released codes providing directives on corporate governance, and in some cases, specific references to the listed real estate sector's corporate governance (e.g. Singapore's Code on Collective Investment Schemes updated in 2005). Local regulators are indeed aware that agency problems pertain to the broader topic of transparency which is a key factor in the long term success of Asian financial markets (Low, 2004). Transparency fosters efficiency, which in turn attracts domestic and foreign investors whose commitment is paramount whenever economies, and property markets, face some tough times.

This paper addresses the issue of corporate governance practices in emerging Asian REIT markets. It is divided into two parts. In the first part, an analytical framework is developed to score corporate governance practices amongst externally managed Asian REITs. As a pilot study, the framework is applied to REITs listed on the Singapore Stock Exchange (S-REITs). Out of a maximum possible score of 88, the score of the average S-REIT over the study period is at best 23.38 or 27%. Nevertheless, there are significant differences between the best and worst performers as shown by the range between the minimum (12) and maximum (30) calculated scores. In the second part, we examine the relationship between corporate governance and performance. The empirical tests based on several performance-related metrics provide evidence supporting a positive correlation between corporate governance and stock performance. In other words, firms with higher corporate governance tend to register better stock returns on risk-adjusted basis.

2.0 LITERATURE REVIEW

Governance mechanisms are designed to monitor the manager and mitigate the potential conflict of interest between the owners and managers. Bianco, Ghosh and Sirmans (2007) provide a good overview of the various governance mechanisms available to protect shareholders' interests. Broadly, they categorized the governance mechanisms as either internal or external. Internal controls include the board of directors, various monitoring committees, separation of the roles of

CEO and chairman of the board, ownership of stock by managers and directors, and performance-based compensation for managers and directors. External governance, on the other hand, is provided mainly by the market for corporate control on the premise that the threat of takeover will remove inefficient management.

Two important questions on corporate governance are firstly, how do we gauge the level of corporate governance, and secondly, how effective are governance mechanisms in fostering corporate performance? One of the most prominent measures of corporate governance is the Governance Index (more commonly referred to as the G-Index) developed by Gompers, Ishii and Metrick (2003). Measuring the balance of power sharing between shareholders and managers, the G-index is simply a sum of the barriers a firm uses to insulate its managers from hostile takeover. Cautioning the need to be careful in interpreting the G-index, Bianco, Ghosh and Sirmans (2007) argue that more attention must be paid to internal governance of REITs since the takeover market is ineffective. Thus, they contend that a composite index incorporating both internal and external governance is a promising area of future research.

A large body of literature on the relationship between corporate governance and performance exists. The earlier studies focused on specific governance mechanisms, such as stock ownership and board composition, have yielded inconclusive results. Hermalin & Weisbach (1991) find that board composition has no significant effect on performance. Cho (1998) finds that investment affects corporate value which, in turn, affects ownership structure, but not vice versa. Loderer and Martin (1997) further observe that abnormal stock returns associated with 876 acquisition announcements are not affected by the stock ownership of managers. Gompers, Ishii and Metrick's (2003) seminal study involving 1500 large listed firms between 1990 and 1999 shows that firms with stronger shareholder rights perform better in terms of higher firm value, profits and sales growth; lower capital expenditures and fewer corporate acquisitions.

Internationally, Klapper and Love (2004) examine 374 firms in 14 markets. Ranking their corporate governance based on management discipline, transparency, independence, accountability, responsibility, fairness and social awareness, the authors find firms in countries with weak legal system have lower corporate governance rankings. They also find good governance is related to higher market valuation and operating performance, particularly in

weakly regulated countries. In another study, Lemmon and Lins (2003) examine the impact of management ownership and control rights of 800 listed firms in eight East Asian countries during the Asian financial crisis. They observe that returns are 10-20% points lower for firms in which managers have high level of control rights but have separated their control and cash ownership; concluding that ownership structure is important.

Table 1 tabulates some prior research on the corporate governance and performance of REITs. Similar to the trend in the finance literature, most of the earlier studies focused on a single aspect of governance, such as ownership structure, board composition, or executive compensation. Ghosh and Sirmans (2003), for example, find that independent directors, block ownership and institutional ownership weakly enhance performance, whilst higher stock ownership and control of the board adversely affect performance. Some researchers have followed a more inclusive approach and used corporate governance indices as proxy for REITs' governance practices. Noticeably, based on the G-Index, Bianco, Ghosh and Sirmans (2007) find no discernible relationship between corporate governance and performance for a sample of 53 REITs in 2006. More recently, Bauer, Eichholtz and Kok (2010) who employ a broader corporate governance index known as the Corporate Governance Quotient index (CGQ)² identify a partial lack of a relation between governance and performance in the US listed real estate sector corresponding to a 'REIT effect'.

[Table 1]

² First introduced in 2002, the Corporate Governance Quotient index (CGQ) is produced by RiskMetrics, a private company leader in the field of governance data. Originally based on the Institutional Shareholder Services (ISS) database, it encompasses eight different categories of governance practices relevant for investors. However, the index is not specifically designed for any specific sector and is mostly relevant for corporations operating according to a US-centric model.

3.0 ASIAN REIT CORPORATE GOVERNANCE INDEX (R- Index)

A prevalent notion, as highlighted by Hartzell, Kallberg and Liu (2004) who study US REITs' IPOs, is that governance need not be a major concern for regulated firms because much of the regulatory provisions are designed to protect the interest of stakeholders. Some examples of REIT regulations in Singapore that aim to iron out potential agency problems are: (1) stricter rules on related party transactions; (2) annual valuation of property assets by external appraiser, who cannot assess the REIT's property for more than two consecutive years; (3) procedures to remove REIT managers, and (4) mandatory high payout ratio that reduces the firm's free cash flow, which is one of the major sources of agency conflicts between owners and managers.

Nonetheless, notwithstanding regulators' endeavors, Singapore REITs, and more generally Asian REITs, are not in par with their US counterparts as far as agency problems. They operate in an environment and are based on organizational models which are highly idiosyncratic and counter-intuitive to corporate governance experts. Consequently, as the REIT regime has been expanding globally over the last ten years, the effectiveness of corporate governance practices among Asian REITs has become a major concern for domestic and international investors alike.

In this section, we discuss the process used to construct the corporate governance index for S-REITs. The index is called the R-Index. The primary reason for our focus on Singapore REITs is twofold: data availability and the exemplarity of the S-REIT regime as defining a generic model of externally managed REITs in Asia. As of December 2008, there are 20 REITs listed on the Singapore Exchange. They constitute the study sample. Our study period (2002-2008) covers the entire history of public REITs in Singapore, since the first REIT (CapitaMall Trust) was listed. We have 63 firm-year observations after filtering missing data. Financial data of the sampled REITs are extracted from Datastream.

[Table 2]

3.1 Rationale for creating a corporate governance index of externally managed Asian REITs

As mentioned before, researchers who look at REITs' corporate governance practices consider either individual corporate governance provisions or aggregate corporate governance indices such as the G-index or RiskMetrics' Corporate Governance Quotient Index (CGQ Index). One research avenue is strikingly missing: the creation of an ad-hoc corporate governance index designed specifically for REITs. This paper introduces an index of corporate governance that caters exclusively to REITs. It is the first time in the real estate literature that such an index is developed. Because most Asian REITs are externally managed, the index called R-Index follows the external manager model. Before going into the nuts and bolts of the R-Index, it is worth explaining the rationale behind our approach.

Prior work shows that individual corporate provisions, either internal or external, are not sufficient to capture the complex construct known as corporate governance (Larcker, Richardson, and Tuna, 2007). Researchers who cherry-pick corporate governance provisions for analyzing the link between corporate governance and performance tend to focus on the most obvious and easiest corporate governance provisions (e.g. Board, Audit Committee). These provisions hardly give the full picture of corporate governance. Such approach disregards the fact that different corporate governance provisions may be substitutes or complements. Their complex interactions define the quality of corporate governance at the firm's level. For instance, Cremers and Nair (2005) show that external and internal governance mechanisms are strong complements in being associated with long-term abnormal returns. Hence, it makes sense to use a broad index as a proxy for corporate governance when analyzing the link between corporate governance and performance.

Researchers analyzing this link for REITs have used either academic indices (such as the G-Index) or commercial indices (such as the CGQ Index). Because of the intrinsic focus of these indices, all studies based on aggregate indices have concentrated on US REITs. Arguably, both index types (academic and commercial) can be replicated in some way or another for Asian

REITs³. RiskMetrics, the sponsor of the CGQ index, provides a list of rating criteria applicable to non-US companies. However, the CGQ index is very Western centric in its approach, even in its non-US version.⁴ Likewise, the G-Index which is centered on external governance is not relevant for Asian REITs whose ownership structures are very different from US C-corporations underlying the original G-Index.

Interestingly, researchers who use commercial indices don't usually question the relevance of these indices for REITs. While academic indices have been extensively analyzed, the corporate governance literature has only recently turned its attention to commercial indices. For instance, Daines, Gow, and Larcker (2009) assess that commercially available corporate governance indices (in particular RiskMetrics' CGQ) do not provide useful information for shareholders and do not predict governance-related outcome. Larcker, Richardson, and Tuna (2007) mention the issue of measurement error in commercial indices as they find very little correlation among ratings supposed to capture the same phenomenon. More generally, on a conceptual level, Sonnenfeld (2004) questions the choice of corporate governance provisions included in commercial indices. Furthermore, real estate researchers resorting to commercial indices (e.g., Bauer et al. 2009) have actually no control over quantitative algorithms used to produce the ratings. Commercial indices are proprietary black boxes, which is hardly satisfactory when aiming to determine what is actually assessed by the ratings. Hence, studies based on commercial indices tend to be comparative in nature because this is possibly the best way to extract information from these ratings (e.g. the identification of a 'REIT effect').

Asian REITs significantly differ from US REITs and other types of corporation, let alone US C-corporations. As mentioned before, many Asian REITs, at least all S-REITs, are externally managed⁵. The impact of external management on REITs' performance is definitely not new. It

³ There is one major caveat however with replicating a commercial index. Whereas academic indices are usually the sum of 'good' or 'bad' corporate governance mechanisms for each firm, commercial indices apply proprietary algorithms, which makes them virtually impossible to replicate (Daines, Gow, and Larcker, 2009).

⁴ With respect to Singapore, an alternative to creating our own index would have been to use the National University of Singapore's Governance and Transparency Index (NUS GTI). However, this academic index does not cater to the listed real estate sector. It is a broad index which is applied to all Singapore listed companies, but seems irrelevant for S-REITs (which are not customarily included in its ratings).

⁵ In addition to Singapore REITs, Japanese REITs, Malaysian REITs, South Korean REITs as well almost all HK-REITs are externally managed as of December 2009.

has been extensively researched in the real estate literature (e.g. Capozza and Seguin, 2000). However, its influence on corporate governance in the context of an aggregate index has been totally overlooked until now. Bauer et al. (2009) acknowledge that it might be an issue when applying the CGQ Index. As their focus is on US REITs, the authors disregard the problem.

S-REITs take the legal form of a Trust involving a Sponsor, generally a large real estate company, a Trustee, a Trust Manager and a Property Manager. This organization generates a myriad of agency problems, among which fees and related party transactions (RPT) are paramount, at least seen for the viewpoint of international investors. Although the trust structure and the external management seem a double aberration for many Western analysts, the concept of “captive entities” as defined in Hsieh and Sirmans (1991) actually fits very well with the Asian tradition.

The market environment in which Asian REITs operate is indeed very different from that of their US counterparts. First, in terms of ownership model, shareholding structures of externally managed Asian REITs are influenced by the Confucian legacy that supports a hierarchical system of social relations (CFA Institute, 2009). Applied to capitalism, this tradition favors a strong pivotal shareholder (either family-related as in Hong Kong or state-related as in Singapore; Claessens, Djankov, Lang, 2000), which underpins the REIT Sponsor-Trust relationship⁶. Second, in terms of the underlying property markets, a characteristic of the real estate sector in many developed Asian markets (e.g. Singapore, Hong Kong) is its oligopolistic dimension due to the combination of the above mentioned ownership model and the relative narrowness of the space markets characterized by few transactions as well as the domination of large local players (at least in the commercial arena). Third, in countries such as Singapore, the government plays a big role in the listed real estate sector, either directly (through market regulations) or indirectly (through government-linked companies and social networks).

⁶ Lee and Foo (2010) explain that Singapore authorities adopted the Trust structure because S-REITs were originally contemplated as being passive real estate investment funds. As the financial crisis has made active management of the S-REITs portfolio critical for their survival, the ability of the Trustee to supervise the Manager takes a new relevance. They argue that the Trust structure has too many agency issues and inadequacies to enable the further development of the listed real estate sector, and advocate the corporatisation of S-REITs.

The fact that corporate governance practices are country/region specific should therefore come as no surprise, even in era of transnational economies. Doidge, Karolyi, and Stulz (2007) show that country characteristics explain much of the variance in governance ratings among 495 firms from 25 countries (including 29 and 25 firms respectively from Singapore and Hong Kong). In view of the idiosyncrasies of Singapore's listed real estate sector, it becomes clear that resorting to existing indices of corporate governance is not an option for this study. An index of corporate governance applied to externally managed Asian REITS has to be developed in order to encapsulate the above-mentioned elements and provide a balanced, contextual view of S-REITs' governance practices.

3.2 Corporate Governance Provisions in the R-Index

The R-Index encompasses 27 governance factors spanning 8 categories of both external and internal corporate governance. The 8 categories are: 1) Board Matters 2) Audit Committee 3) Remuneration Matters 4) REIT Organization 5) Fees 6) Related Party Transactions 7) Gearing 8) Ownership. Table 3 presents a list of the 27 governance provisions.

[Table 3]

The index accommodates S-REIT's regulatory environment. REITs in Singapore are governed by the Code on Collective Investment Schemes (CIS Code) and the Property Fund Guidelines (Appendix 2 of the CIS Code). The CIS Code is non-statutory, i.e. a breach of the CIS Code does not necessarily lead to legal sanction. In addition to the CIS Code, REITs are subjected to market authorities' requirements in terms of governance. The Monetary Authority of Singapore (MAS) issued its Code of Corporate Governance in 2005. Compliance with the Code is not mandatory but listed companies are required under the Singapore Exchange Listing Rules to disclose their corporate governance practices and give explanations for deviations from the

Code in their annual reports⁷. This “comply or explain” feature of Singapore’s corporate governance regulations does in effect give a lot of leeway to S-REITs, and results in a wide range of practices that the index has to capture.

The unique situation of Asian REITs pervades all 27 provisions included in the R-Index. Four categories in the R-Index are more specific to externally managed REITs: REIT Organization, Fees, Related Party Transactions, and Gearing. The paper will briefly describe the underlying provisions in these four categories before introducing the index scorecard in the next section. Table 4 presents the main agency issues at stake in all 8 categories of the R-Index.

[Table 4]

3.2.1 REIT Organization

Appendix 1 shows the classic structure of a S-REIT. Although this generic model is shared by all sponsored S-REITs, there can be significant differences among REITs both in terms origin and involvement of the various parties. For instance, the Trust Manager might be a subsidiary of the Sponsor, or an external manager with no links whatsoever with the other parties in the Trust. Similarly, the Property Manager might be related to the Sponsor, or in the case of external managers to the Trust Manager. Classically, the Trustee is rather passive. However, the Property Fund Guidelines mention several instances in which the Trustee should play a proactive role (e.g. Related Party Transactions). In such a setting, the entrenchment of the Trust Manager generates potentially huge agency issues. Conditions leading to the choice of manager as well as provisions for removal (including consequences of termination of management agreements) are essential points covered in the R-Index.

⁷ The Singapore government who is well aware of the importance of governance for establishing Singapore as a major financial centre aims to foster good corporate governance practices. In February 2010, MAS has announced the establishment of a Corporate Governance Council gathering prominent business figures whose mission is “to promote a high standard of corporate governance in companies listed in Singapore, so as to maintain investors’ confidence and enhance Singapore’s reputation as a leading and trusted international financial centre”. Likewise, MAS conducts regular reviews (through consultation papers) of the regulatory regime governing S-REITs on a broad range of issues (such as AGM requirement in May 2009).

The main document regulating REIT organization is the Trust Deed. S-REITs frequently refer to this document in their annual reports. However, few go as far as providing a summary of the Trust Deed's main provisions in their communication with unitholders. In some cases, access to the Trust Deed is actually very complex and virtually impossible for unitholders, let alone outsiders. Trust deed's accessibility is part of the R-Index's ratings. Table 5 presents an overview of the accessibility of S-REITs' trust deeds as of December 2008.

[Table 5]

Last but not least, although until 2009, S-REITs were not required to hold an annual general meeting, some decided to voluntarily do so, which is also accounted for in the R-Index.

3.2.2 Fees

The Trust structure generates an array of fees from the Trust to the Manager, the Property Manager, and the Trustee. Manager's fees are the most important ones among these fees. In the externally managed framework, the REIT itself has no employees. The Manager performs all work on behalf of the Trust in exchange for fees. Manager's fees include a base fee, a performance fee and, in some cases, acquisition/ divestment fees. Base fees and performance fees (whose total amounts to manager's management fees) can take many shapes, from a flat percentage of the Asset Under Management (AUM) to a percentage of net income conditional on a pre-determined benchmark, or any combination in-between (Ooi, 2010). The structure and disclosure of all three categories of fees are key indicators of good corporate governance in the R-Index. In a principal-agent framework, the more fees are conditional on Manager's actual performance, the better for unitholders. The situation is similar for Property Manager's fees.

Acquisition and divestment fees paid to the Trust Manager are particularly controversial. Combined with management fees based on AUM, they might give the wrong incentives to managers and become enmeshed into the broader issues of related party transactions and gearing. As a result, the R-Index favors S-REITs which do not pay acquisition / divestment fees to their Managers. If such fees are paid, S-REITs are scored on their level of disclosure.

Finally, the R-Index focuses on the relative level of fees assessed by two operating metrics: manager's management fees as a percentage of deposited properties, and total manager's fees as a percentage of net property income.

3.2.3 Related Party Transactions

The Sponsor-satellite ownership model coupled with relatively narrow and illiquid commercial property markets puts a special emphasis on Related Party Transactions (RPTs) in the context of Asian REITs⁸. This issue, although exacerbated in case of property transactions, is not specific to the listed property sector. Relationship-based transactions are a source of major agency issues for all corporation types in Asia (OECD, 2009). The R-Index does not evaluate the materiality of RPTs on a quantitative standpoint but rather focuses on the disclosure and processes related to RPTs in order to qualify transparency as well as potential misalignment of interests between Sponsor, Manager and unitholders. The Singapore Code on Collective Investment Schemes (Appendix 2- Section 5: Interested-party Transactions) requires property funds to make public their policies governing transactions subject to a system of checks and balances as well as a disclosure process whenever there is a risk of potential abuse. In addition to the scope of RPT (i.e. definition of related parties and relevant transactions), other issues are the influence given to non-controlling shareholders (i.e. Trustee) over the decision-making process, and the role of independent experts.

3.2.4 Gearing

The issue of gearing is not specific to Asian REITs. However, in the context of an externally managed Trust where Manager's fees are not linked to net income (i.e. net of borrowing costs), gearing can trigger significant agency costs (Capozza and Seguin, 2000)⁹. The R-Index scores

⁸ RiskMetrics (2009) notes about S-REITs that "in many cases, the Sponsor actually continues to acquire, develop and incubate properties post-listing of the REIT [...] Injecting properties into a satellite REIT is often a tax efficient way of realizing value from those properties".

⁹ In a report on externally managed REITs (including Singapore and Hong Kong REITs), Moody's (2007) assesses that "corporate governance of externally managed REITs presents credit risk. [...] The central governance

the quality of REITs' disclosure as well as the impact of leverage on the Trusts' income generating abilities (proxied by borrowing costs as a percentage of net property income).

3.3 Scorecard of the R-Index

Appendix 2 presents the scorecard of the R-Index. The scores are determined based on 75 core elements. Each element is worth one point, with some multiple choice elements being rated 1, 0.5, or 0. In addition to these core 75 elements, the index encompasses a “bonus and penalty” system to account for the “comply and explain” feature of corporate governance practices in Singapore: 13 bonus points and 11 penalties materialized as one negative point each¹⁰. Hence, there are 99 elements in the R-Index. The overall score is simply the sum of all the points (core plus bonuses minus penalties). The index range is therefore [-11; +88] with a median at 38.5. Annual scores and sub-scores based on data collected in annual reports are determined for each REIT, from inception to 2008, resulting in 63 firm-year observations. For each of the 8 corporate governance categories covered in the R-Index (i.e., Board Matters, Audit Committee, Remuneration Matters, REIT Organization, Fees, Related Party Transactions, Gearing, Ownership), the scorecard provides a sub-score. The higher the score and sub-scores, the better the corporate governance practices of the REIT.

The index methodology aims to be objective and transparent. However, once relevant elements are selected, crucial (and subjective) choices for the macro-relevance of the index have to be made with respect to weighting. The index weights depend on the number of elements in each category as shown in Table 6 below. In its current version, the R-Index emphasizes Fees (24% of total score), Board Matters (19%), Related Party Transactions (16%), and REIT

risk is that external manager uses its control to extract value from the REIT to the detriment of shareholders and bondholders”.

¹⁰ The R-Index follows the same methodology as the Corporate Governance Index developed by Patrick Lecomte for the Asian Public Real Estate Association (APREA). The “bonus and penalty” system is designed as an incentive for Asian REITs to improve their corporate governance practices. In selecting the core, bonus and penalty elements, the objective is to only include provisions with real significance for externally managed REITs, thereby avoiding a “kitchen sink” approach that tends to provide a less accurate measure of governance quality (Bebchuk, Cohen and Ferrell, 2009).

Organization (15%). These weights as well as the scorecard were established after an extensive consultation with institutional investors and experts in Asian REITs, all members of the Asian Public Real Estate Association (APREA).

[Table 6]

3.4 Data: Summary and Analysis

Table 7 summarizes the main statistics for the R-Index score and sub-scores from 2003 to 2008. Unless otherwise stated, the following analysis is based on 2008 data. All S-REITs are systematically below the index median set at 38.5. Corporate Governance practices of S-REITs are therefore found lacking. However, over the 5 year period, mean scores have gradually improved from 18.5 to 23.38 while the score's standard deviation has narrowed (4.14 in 2008 vs. 5.89 in 2003), indicating both an improvement and a greater consistency in corporate governance practices as more REITs were listed on the SGX¹¹. Although the mean score is low compared to the R-Index maximum possible score (23.38 vs. 88 or only 27%), it is worth noting that 14 REITs (out of 20) are performing better than average. Besides, there are significant differences between the best and worst performers as shown by the range between the minimum and maximum calculated scores (2.27:1).

[Table 7]

Looking at the 8 categories individually and comparing with the sub-scores' maximum possible values, the three best areas are Audit Committee, Board Matters, and Gearing whereas Remuneration, Fees, and RPTs are laggards. Noticeably, Fees is the sub-score with the largest standard deviation, indicating a great diversity of practices related to fees among S-REITs (as explained in Ooi, 2010). Remuneration ranks consistently low as many REITs do not provide

¹¹ The R-Index scorecard was defined so as to set ambitious goals in each category for Asian REITs to aim at. As a result, trends and comparisons among REITs are more meaningful for our analysis than absolute raw scores.

any information in that category (hence, an array of zero sub-scores). Table 8 shows the pairwise correlations between sub-scores.

[Table 8]

Board Matters and Fees display the highest correlation of all pairs (0.369), right before REIT Organization and Fees (0.263). Good corporate governance in terms of Board and REIT Organization tends to be associated with good practices as far as fees are concerned. Likewise, Audit Committee seems correlated with Gearing, and Ownership with Related Party Transactions, which makes sense considering a large part of the R-Index in these four categories focuses on disclosure. Interestingly, Remuneration and REIT Organization are negatively correlated, which indicates that Trusts with a Manager related to the Sponsor tend to have better disclosure in terms of remuneration policies than those managed by outside advisors¹². Some pairs show counter-intuitive negative correlations (e.g. Audit Committee and Ownership). Given the sample size and limited relevance of some sub-scores, interpretation of these correlations should not be over-extended. Nonetheless it is worth noting that pairwise correlations are overall small enough to substantiate the hypothesis that each sub-score captures a significant and distinct provision affecting S-REITs corporate governance.

4.0 EFFECTIVENESS OF CORPORATE GOVERNANCE

In this section, we investigate whether corporate governance matters. The main hypothesis is that corporate governance, by aligning the interest of owners and managers, has a positive impact on corporate performance. Specifically, we test if REITs with high ratings in R-Index are correlated

¹² One possible explanation for this difference might be the fact the job market for high flying real estate executives in Singapore is very competitive. Outside advisors have therefore little incentives to disclose information that might be used by their competitors to recruit their best employees whereas sponsor-related managers might feel they are better able to retain their staff due to the large range of career opportunities offered by the sponsors.

with higher corporate performance and vice versa. Various performance metrics covering stock performance and operating performance are employed.

We begin the analysis by examining the correlation between R-Index scores and stock price performance. REITs in our sample are partitioned into two different portfolios based on whether their corporate governance scores are above or below the median score. The equally-weighted returns of the resulting two portfolios are computed and their return differences over time are reported in Table 9. On the whole, the performance of the portfolios partitioned by the total scores suggests that corporate governance has an impact on REIT stock performance. Specifically, S-REITs that are ranked above the median score registered 1.6 percentage points better than those that are ranked below the median score.

[Table 9]

Decomposing the aggregated scores into their components, we find a positive relationship generally exists between the respective corporate governance scores and stock returns.¹³ The differences in the performance are more contrasting when the portfolios are constructed based on board matters (12.1% versus -6.3%), remuneration (14.5% versus -2.56%), organization (5.74% versus 1.5%) and gearing (18.07% versus 0.01%). The only component that shows a negative relationship is RPT score. Portfolio of REITs above the median score registered a return of -4.21% as compared to 8.71% for REITs with below median score for RPT. Hence, it might be the case that S-REITs actually add value with RPTs, which is not unexpected given the idiosyncrasies and size of the local market in Singapore.¹⁴ Furthermore, the result is in line with recent literature on RPTs transactions, such as Gordon, Henry and Palia (2004) who highlighted

¹³ Note that the bulk of the out-performance is concentrated during the IPO year, which is consistent with the fact all information pertaining to corporate governance practices is disclosed in IPO documents such as the Trust Deed.

¹⁴ It would be interesting to test if this inverse relationship holds for S-REITs with large activities out of their home market, for instance in China. However, there is not enough variation in the data to test the relationship which could define a 'home market effect' with respect to RPTs governance practices. Nevertheless, Wong, Ong and Ooi (2010) observe that Asian REIT IPOs that are sponsored by property developers, and hence have more scope to engage in RPTs, registered strong stock performance on their first trading day.

that RPTs may be efficient transactions that rationally fulfill other economic demands of a firm such as securing in-depth skills and expertise between participants with private information or providing an alternative form of compensation. Kohlbeck and Mayhey (2004) also find that future returns are marginally higher for companies engaged in RPT with investments. Their analyses suggest RPTs with investments appear to be associated with efficient contracting, while simple transactions with directors, officers and shareholders are associated with opportunism.

Overall, the univariate analyses above reveal the significant impact of governance on REIT stock performance. To formally test the impact of governance mechanisms on corporate performance, we estimate an OLS regression to identify the determinants of REIT stock performance. The key variable of interest in the regression models is naturally the R-Index score of the individual firm. Specifically, we estimate the following equation:

$$r_{i,t} = \alpha + \beta_1 R - Index_{i,t-1} + \beta_2 \ln(size_{i,t}) + \beta_3 MTB_{i,t} + \beta_4 D/E_{i,t} + \delta X_t + e_{i,t} \quad (1)$$

where *R-Index* is the level of corporate governance score in year *t-1* for REIT *i*. In equation (1), we also incorporate several variables that may influence stock returns as suggested by prior studies on the pricing of REIT and property stocks, such as Ambrose et al. (2000), Bond, Karolyi and Sander (2003), Ooi and Liow (2004), and Ambrose, Bond and Ooi (2010). Specifically, we control for firm size and growth opportunities by including the natural log of REIT *i*'s market capitalization in year *t* and the ratio of REIT *i*'s market- to book-value in year *t*. Since future stock price performance may reflect the firm's use of leverage, we also include *D/E Ratio_{t,i}*, the debt asset ratio for REIT *i* year *t* as a control variable. *X_t* represents a series of period fixed effects to capture any time-varying effects, such as credit availability and costs, over the study period.

We use two different return measures for corporate performance. The dependent variable in the regression model, *r_{i,t}*, is the continuously compounded excess holding period return for REIT *i* for period *t*. The annual change in the individual REIT stock price is first computed, and then adjusted for the corresponding market return. Mathematically, the return measure can be expressed as follows: $R_{i,t+1} = (P_{i,t+1} / P_{i,t} - 1) - (M_{t+1} / M_t - 1)$, where *P_{i,t}* is the stock price of *i*th REIT at time *t*, and *M_t* is the all stocks price index at time *t*. As a robustness test, we also

examine the impact of corporate governance on the economic gains of REITs using Jensen alpha (α_i), which is derived from the following market model: $R_{i,t} - R_{f,t} = \alpha_i + \beta(R_{m,t} - R_{f,t}) + \varepsilon_t$, where $R_{i,t}$ indicates the weekly return on a REIT stock, $R_{f,t}$ is the weekly return on the risk-free three-month Treasury bill, and $R_{m,t}$ is the corresponding weekly return on the market portfolio. If α is zero or not significantly different from zero, then the particular portfolio is earning normal returns. In other words, its weekly rate-of-return, adjusted for risk, is equivalent to the mean weekly rate-of-return for the market (see Cannon and Vogt, 1995; Ooi, 2010). The descriptive statistics of the dependent and independent variables are presented in Table 10.

[Table 10]

The central hypothesis we test is higher R-Index scores are associated with better stock performance. The estimation results for Equation 1 are presented in Table 11 under Panel A. Model 1 and Model 2 report the regression coefficients with excess stock return and abnormal profit as the dependent variable, respectively. The results show evidence of a positive relationship between the corporate governance and stock returns, but is not statistically significant at the 10 percent level. The statistical strength of the impact of corporate governance on risk-adjusted returns is stronger, as shown in Model 2.

[Table 11]

Consistent with the additional risk associated with higher leverage, we see that REITs with higher debt ratios have higher future holding period returns. However, as observed in the results for Model 2, the impact of debt becomes insignificant once we take into account the REIT's risk-adjusted performance. Thus, the monitoring benefit of debt is not supported. The coefficient for firm size is positive in Model 2, which indicates that large-sized REITs registered higher abnormal gains over the study period. This observation is consistent with the notion that large firms have better access to funds and manager talents (Bianco, Ghosh and Sirmans, 2007). REITs with high growth options, however, do not post superior returns. In several unreported regressions, we tried including other exogenous variables, such as dividend yield and returns on

asset in the stock performance equation. The estimation results are similar and hence, not reported here.

One concern with the OLS results reported in Table 11 is the potential simultaneity of relationships in that corporate governance scores may themselves be a function of stock performance. To control for the possible simultaneity, we estimate a simultaneous system of equations with stock performance and governance as endogenous variables. Similar to Ghosh and Sirmans (2003), we use two-stage least squares (2SLS) to estimate this equation system. As in equation (1), the exogenous variables for the stock performance equation is firm size, leverage and growth opportunity. In order for the system of equations to be estimated, we include two additional variables, namely firm age and accounting profitability, as exogenous variables in the corporate governance equation for identification purpose. The model for each endogenous variable includes the other endogenous variable. In other words, we allow for the possible impact of corporate performance on governance, whilst hypothesizing that corporate governance has a positive impact on performance. Estimating the 2SLS model, nevertheless, necessitates the use of the lagged values of corporate governance score and performance as instrument variables. As a result, the number of observations for the 2SLS model is reduced by 20 observations to 43.

The estimation results for the stock performance equation are presented in Panel B of Table 11. Overall, the results of the two-stage model are similar to the single equation model presented in Panel A. However, the relationship between corporate governance and stock performance becomes stronger. Thus, the significantly positive coefficients suggest that firms with higher corporate governance scores tend to record better stock performance, both in terms of excess returns as well as risk-adjusted returns. Note that when we substitute our market-based performance measures with standard accounting definitions, namely return on assets (ROA) and return on equity (ROE), the relationship between corporate governance and corporate performance ceases to be significant. See Table 12. Overall, the results suggest that the benefits of better corporate governance, though masked in accounting statements, are appreciated by the market through the REITs stock price performance.¹⁵

¹⁵ The discrepancy of findings between equity returns and operating performances is actually recurrent in the corporate governance literature. For instance, Gompers et al. (GIM, 2003) who compare the impact of governance on various performance-related metrics document a robust relationship between their G-Index and equity prices among a sample of 1500 large US firms over the 1990s, but do not achieve the same consistent quality of regression

[Table 12]

To understand the relation between corporate governance of S-REITs and efficiency of real estate capital markets in Singapore, we examine how the bid-ask spread of the individual REITs are related to their corporate governance scores. The maintained hypothesis is that stocks of REITs with better corporate governance are more attractive to investors, and hence, they achieve better pricing. Indeed, when the REITs are partitioned into two groups based on their R-Index scores, we observe that the group with higher corporate governance score consistently record lower bid-ask spreads over the study period (Table 13). Results of the multivariate regression models, as reported in Table 14, confirm the inverse relationship between corporate governance score and information asymmetry. Our results is consistent with the findings of Anglin et al (2010) that information asymmetry, as measured by the percentage of bid-ask spreads demanded by the market, is reduced by appropriately structured governance. Thus, it appears that corporate governance of S-REITs affects their stock performance through a reduction in information asymmetry, rather than improved operating efficiency, which would have been captured in accounting measures.¹⁶

[Table 13 & Table 14]

when using three operating performances (net-profit-margin, ROE, one-year sales growth). While the G-Index is significantly correlated to both net-profit-margin and sales-growth, there is no evidence of a strong link with ROE. Addressing this surprising result, Core, Guay, and Rusticus (2006) test for an association between governance and operating performance by examining operating return of assets in the GIM sample. They find a significant association with future operating performances and argue that governance causes systematic differences in operating performance which in turn cause systematic performance surprises to the market. Based on a sample of 220 US REITs, Bauer et al. (2010) find no evidence that the CGQ Index is related to any operating measures of performance (including ROA and ROE), which leads them to identify a “REIT effect” in comparison to regular C-Corps. Larcker, Richardson, Tuna (2007) explain that the common inability of corporate governance indexes to capture a link with operating performances might be due to an array of factors including intrinsic limitation of the corporate governance index, earnings management, the use of unreliable measures which display smoothness, persistence and poor accrual quality. In particular, as noted by Fama and French (2000), measures of operating performances such as ROA are very persistent, which impedes the relevance of the regression with a corporate index whose changes are also usually gradual.

¹⁶ Another possible explanation for the positive relationship between corporate governance and stock returns in the absence of positive operating performance is that international investors prefer to invest in stocks of firms with better governance (as shown in Leuz, Lins, and Warnock, 2008). However, we were unable to test this hypothesis due to lack of public data on the ownership of S-REIT stocks by international investors.

Besides, we analyze the factors that the market considers the most important as far as signaling good corporate governance practices. Substituting the overall R-Index score of the individual REITs with the various sub-scores in the regression models, we find that the two most important factors viewed by the market are Board matters and Remuneration as shown in Table 15. This is consistent with our earlier observations derived from the univariate analysis. The other Corporate Governance sub-scores do not have any significant effect on the individual REITs' risk-adjusted performance.

[Table 15]

5.0 CONCLUSIONS

This paper introduces the R-Index which is the first index of corporate governance specifically designed for Asian REITs. As shown by the R-Index, corporate governance of Singapore REITs has considerably improved since the REIT regime was first introduced in Singapore in 2002. However, as of 2008, it is still found lacking based on the 99 elements included in the index scorecard, encompassing such provisions as fees and related party transactions. By analyzing the link between the corporate governance scores of individual REITs and their performance over time, the paper finds evidence of a positive relationship between corporate governance and stock performance of S-REITs, which is statistically significant at the 10 percent level. However, we do not find any relationship between corporate governance and operating performance of S-REITs. Likewise, we do not find that good corporate governance practices in the area of related party transactions are linked to out-performance. Our further analyses suggest that the improvement in market performance can be attributed to a reduction in information asymmetry enjoyed by better governed S-REITs. Further research should apply the framework introduced in this paper to other externally managed Asian REITs and use the results as a basis for studying in more depth the efficiency of the listed real estate sector in Singapore and other Asian countries.

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Table 1. Prior Studies on REIT Corporate Governance (CG) and Performance

Authors (Year)	Data	Findings
McIntosh, Rogers, Sirmans & Liang (1994)	55 REITs traded on NYSE and AMEX (1969-1990). The probability of a management change is proxy for corporate governance (CG), whilst stock and market returns are employed to measure performance.	Inverse relationship between stock price performance and the probability of a management change.
Cannon & Vogt (1995)	42 equity REITs (1987-1992). CG measures include management type (self-administered or advisor REITs), ownership structure and compensation, whilst performance is represented by Jensen's alpha & Sharpe's ratio.	Self-administered REITs outperformed advisor REITs. Ownership structure significantly affects the performance of advisor REITs, but not self-administered REITs.
Friday, Sirmans & Conover (1999)	399 Equity REITs; 276 hybrid and mortgage REITs (1980-1994). CG is represented by ownership structure, whilst market-to-book ratio is employed to gauge performance.	Nonlinear relationship between firm value and ownership structure. Inside ownership reversely affects market-to-book ratio.
Ghosh & Sirmans (2003)	122 equity REITs (1999). CG is represented by board independence and ownership structure, whilst performance is proxied by return on assets (ROA) and return of equity (ROE).	Independent directors, block and institutional ownership weakly enhance performance, whilst higher stock ownership and control of the board adversely affect performance.
Hartzell, Sun and Titman (2006)	153 Equity REITs (1995-2004). CG measures include stock ownership, managerial compensation, director board structure and state of incorporation, whilst real estate asset growth, equity growth and debt growth are proxies for investment rate.	Strong links between investment behaviors and ownership structure. Well-governed REITs invest more in better investment opportunities.
Bianco, Ghosh & Sirmans (2007)	58 REITs in 2004 and 53 REITs in 2006. CG is represented by G-Index developed by Gompers et al (2003), whilst corporate performance is represented by ROA, ROE, stock return and FFO/total revenue.	G-index has but a weak effect on REIT performance. And, the impact of governance seems to be less discernible over time.
Bauer, Eichholtz & Kok (2010)	More than 220 REITs and 5000 firms in the US between 2003 and 2005. CG is measured by the comprehensive CGQ index. Performance is measured by Tobin's q , ROE, ROA, Net Profit Margin and 5-year SALES, Fund-for-operations growth.	For the full sample, there is a strong and significantly positive relation between governance index and performance. For the REIT sample, this relationship is only found in the case of REITs with low payout ratios.
Ooi (2010)	20 externally managed REITs in Singapore. CG is represented by REIT manager's fees, whilst performance is represented by Jensen alpha, Sharpe ratio as well as IPO returns.	Market rewards REITs that pay their managers a low base fee coupled with a high incentive fee that is benchmarked against a pre-determined level of performance.

Table 2. S-REITs Sample (2003-2008)

Total = 63

	YEAR	2003	2004	2005	2006	2007	2008
AIMS AMP CAPITAL INDUSTRIAL							1
ASCENDAS INDIA TRUST						1	1
ASCENDAS REAL ESTATE INVESTMENT TRUST		1	1	1	1	1	1
ASCOTT					1	1	1
CAMBRIDGE INDUSTRIAL					1	1	1
CAPITA RETAIL CHINA						1	1
CAPITACOMMERCIAL TRUST				1	1	1	1
CAPITAMALL TRUST		1	1	1	1	1	1
CDL HOSPITALITY					1	1	1
FIRST REAL ESTATE INVESTMENT TRUST						1	1
FORTUNE REIT		1	1	1	1	1	1
FRASERS CENTREPOINT TRUST						1	1
FRASERS COMMERCIAL TRUST					1	1	1
INDIABULLS PROPERTY INVESTMENT TRUST							1
K-REIT					1	1	1
LIPPO MAPPLETREE							1
MAPPLE TREE				1	1	1	1
PARKWAY LIFE						1	1
SAIZEN REIT							1
STARHILL GLOBAL REIT				1	1	1	1
SUNTEC REIT				1	1	1	1
	TOTAL	3	3	7	12	17	21

Table 3. List of Corporate Governance Provisions included in the R-Index

The list below presents the selection of corporate governance provisions included in the R-Index. The index encompasses 27 governance factors spanning 8 categories based on both external and internal corporate governance. Figures in parenthesis represent the number of related elements in the R-Index core score (see Appendix 2 for a detailed copy of the scorecard).

Board Matters (16)

- 1- Board Composition (1)
- 2- Board Independence (1)
- 3- Nominating and Remuneration Committee (1)
- 4- Board Diversity (4)
- 5- CEO / Chairman Separation (1)
- 6- Board Meetings (2)
- 7- Disclosure of past/ present directorships (2)
- 8- Nominating Committee and Board Performance (4)

Audit Committee (4)

- 9- Audit Committee Meetings (2)
- 10- Audit Committee Composition (2)

Remuneration Matters (5)

- 11- Director and Executive Remuneration (5)

REIT Organization (11)

- 12- AGM (1)
- 13- Manager Independence, Provision for Removal (4)
- 14- Trustee: Trust Deed (4)
- 15- Governance Guidelines (2)

Fees (18)

- 16- Structure of Manager's Management Fees (3)
- 17- Acquisition/ Divestment Fees (5)
- 18- Disclosure of Fees (1)
- 19- Property Manager's Fees (4)
- 20- Payment of Fees in Units (3)
- 21- Manager's Management Fees- % Levels (2)

Related Party Transactions (13)

- 22- Disclosure (9)
- 23- Role of Trustee (2)
- 24- Independent Experts (2)

Gearing (5)

- 25- Disclosure: Rating, Look-Through (4)

Ownership (3)

- 26- Disclosure (1)
- 27- Concentration (2)

Table 4. Corporate Provisions in the R-Index and Main Agency Issues at stake

Categories in the R-Index	Corporate Governance Questions being addressed	Main Agency Issues at stake
BOARD MATTERS	How effective is the Board in monitoring the REIT's activities?	Independence of Board members from Sponsor/ Manager. Diversity and experience of Board members.
AUDIT COMMITTEE	How effective is the Audit Committee in controlling the REIT's activities?	Independence and expertise of the Audit Committee's members.
REMUNERATION MATTERS	Does Director and Executive remuneration policy foster performance, and more generally unitholders' interests?	Transparency and alignment of managers' and unitholders' interests.
REIT ORGANIZATION	How independent is the Manager from the Sponsor? How proactive is the Trustee? How open is the REIT with respect to its activities and policies (AGM, Trust Deed)?	Independence of the Manager from the Sponsor. Ability of Trustee to be part of Checks and Balances. Entrenchment of Manager. Transparency of management policies.
FEES	What is the structure of fees paid by the Trust? Are fees linked to performance? What is the quality of disclosure in the REIT's annual reports? What is the relative level of fees compared to industry benchmarks?	Misalignment of interests between managers and unitholders. Excessive charges born by the Trust due to non performance related fee structure.
RELATED PARTY TRANSACTIONS	What is the quality of disclosure of RPTs in the REIT's annual reports? How involved is the Trustee? What is the role of independent experts?	Transparency and alignment of interests between Sponsor, Manager and unitholders.
GEARING	What is the quality of disclosure? Is leverage compatible with the REIT's ability to generate income?	Excessive gearing due to wrong incentives for Trust Manager (e.g. fees, RPTs) impacting unitholders' returns and investment prospects.
OWNERSHIP	What is the quality of disclosure? How concentrated is the shareholding structure?	Sponsor- Satellite ownership model. Entrenchment of Manager.

Table 5. S-REITs' Trust Deed Availability (as of December 2008)

S-REIT	COMMENTS
ASCENDAS INDIA TRUST	Available upon request to unitholders only
ASCENDAS REAL ESTATE INVESTMENT TRUST	Available upon request to unitholders only
ASCOTT RESIDENCE TRUST	Not available (only circulated within internal company boundaries)
FRASERS COMMERCIAL TRUST	Available upon request to unitholders only
CAPITACOMMERCIAL TRUST	Available at a physical address to unitholders only
CDL HOSPITALITY TRUST	Available at a physical address to unitholders only
CAPITARETAIL CHINA TRUST	Available at a physical address to unitholders only
CAMBRIDGE INDUSTRIAL TRUST	Available upon request to unitholders only
CAPITAMALL TRUST	Available at a physical address to unitholders only
FRASERS CENTREPOINT TRUST	Available upon request to unitholders only
FIRST REAL ESTATE INVESTMENT TRUST	Available upon request to unitholders only
FORTUNE REIT	Available in hard copy at \$10 per copy
K-REIT ASIA	Available to the public at either trustee/registrars office
LIPPO-MAPLETREE INDONESIA RETAIL TRUST	Available upon request
AIMS AMP Capital Industrial REIT	Available at a physical address with an administrative fee of \$10
MAPLETREE LOGISTICS TRUST	Available upon request to unitholders only
STARHILL GLOBAL REIT	Available upon request to unitholders only
PARKWAY LIFE REAL ESTATE	Available at a physical address
SUNTEC REIT	Available in hard copy at \$10 per copy
SAIZEN REIT	Available at a physical address with an administrative fee of \$10
INDIABULLS PROPERTY INVESTMENT TRUST	Available at a physical address

Source: The authors and APREA.

Table 6. R-Index: Elements in the 8 Corporate Governance Categories and Weights

CATEGORY	CORE	BONUSES	PENALTIES	MAXIMUM SCORE	MINIMUM SCORE	# ELEMENTS IN CATEGORY	WEIGHTS IN TOTAL SCORE (%)
<i>BOARD</i>	16	2	1	18	-1	19	19%
<i>AUDIT</i>	4	1	1	5	-1	6	6%
<i>REMUNERATION</i>	5	2	1	7	-1	8	8%
<i>REIT ORGANIZATION</i>	11	3	1	14	-1	15	15%
<i>FEEES</i>	18	3	3	21	-3	24	24%
<i>RELATED PARTY TRANSACTIONS</i>	13	2	1	15	-1	16	16%
<i>GEARING</i>	5	0	1	5	-1	6	6%
<i>OWNERSHIP</i>	3	0	2	3	-2	5	5%
TOTAL	75	13	11	88	-11	99	100%

Table 7. The R-Index: Summary Statistics (2003-2008)

	2003	2004	2005	2006	2007	2008
R-INDEX [-11; 88]						
Minimum	12	12	12	13	13	13
Mean	18.5	19.33	21.14	22.13	22.71	23.38
Median	20	22.5	22.5	22	23	24
Mode	n/a	n/a	22.5	20	23	24
Maximum	23.5	23.5	28	30	29.5	29.5
Standard Deviation	5.89	6.37	4.97	4.52	4.34	4.14
SUB-SCORES						
<u>Board Matters [-1; 18]</u>						
Mean	6.5	7.17	6.64	7.58	7.79	8.1
Standard Deviation	1.8	2.02	1.28	1.66	1.52	1.62
<u>Audit Committee [-1; 5]</u>						
Mean	1.33	1.5	2.21	1.75	2.38	2.38
Standard Deviation	0.58	1.32	0.64	0.87	0.6	0.67
<u>Remuneration [-1; 7]</u>						
Mean	0	0	1	0.83	0.79	0.55
Standard Deviation	0	0	2	1.25	1.31	1.34
<u>REIT Organization [-1; 14]</u>						
Mean	2	2.33	2.71	3.33	3.29	3.67
Standard Deviation	1	1.15	0.76	1.07	0.59	1.02
<u>Fees [-3; 21]</u>						
Mean	4	3.33	2.71	2.83	2.68	3.19
Standard Deviation	3	2.08	1.8	2.41	1.5	2.21
<u>Related Party Transactions [-1, 15]</u>						
Mean	2.67	3	3.29	2.88	3.12	2.98
Standard Deviation	1.61	0.87	1.32	1.17	1.44	1.44
<u>Gearing [-1; 5]</u>						
Mean	1	1.33	1.71	2.08	1.88	1.81
Standard Deviation	1	1.15	0.95	0.9	1.11	1.03
<u>Ownership [-2; 3]</u>						
Mean	1	0.67	0.86	0.83	0.76	0.71
Standard Deviation	0	0.58	0.38	0.39	0.44	0.56

The numbers in brackets correspond to the possible [minimum value; maximum value] for the score and sub-scores.

Table 8. Pairwise Correlations between the R-Index Sub-Scores (2008)

	Board Matters	Audit Committee	Remuneration	REIT Organization	Fees	RPT	Gearing
Audit Committee	0.011						
Remuneration	0.096	0.062					
REIT Organization	0.096	0.086	-0.318				
Fees	0.369	-0.237	-0.163	0.263			
RPT	-0.208	-0.055	0.117	0.028	0.099		
Gearing	0.101	0.256	0.188	-0.111	-0.060	-0.154	
Ownership	0.114	-0.362	0.219	-0.263	0.026	0.238	-0.099

 highest correlation

Table 9. Stock Performance of SREITs (partitioned by R-Index scores)

This table reports the absolute difference in returns for an equally-weighted portfolio of firms with scores above the median R-INDEXT score and an equally-weighted portfolio of firms with R-INDEXT scores below the median level. Note ANOVA tests indicate that all return differences are significant (the null hypotheses that the two portfolios have the same returns are rejected even at 10% level).

	No of REITs	Median R-Index	Portfolio returns (> Median R_Index)	Portfolio returns (< Median R-Index)	Return Differences
2004	3	22.50	0.368	0.150	0.217
2005	7	22.50	0.021	-0.102	0.123
2006	12	22.00	0.131	0.027	0.103
2007	17	23.00	-0.151	-0.215	0.179
2008	21	24.25	-0.076	-0.091	0.015
All	64	22.50	-0.043	-0.060	0.016

Table 10. Descriptive Statistics

Descriptive statistics are based on a final sample of 63 firm-year observations.

	Mean	Median	Maximum	Minimum	Std. Dev.
Corporate Governance score	22.58	23.25	30	12	4.86
Stock Excess Return	-0.08	-0.07	0.37	-0.35	0.17
Jensen's Alpha	-0.01	-0.01	0.04	-0.05	0.02
Market-To-Book	0.93	0.87	1.61	0.27	0.31
Market capitalization*	6.62	6.51	8.25	4.96	0.73
Debt-To-Equity (%)	52.72	47.12	134.03	4.95	28.56
Return on Asset, ROA (%)	4.25	2.56	24.28	0.4	4.52
Return on Equity, ROE (%)	11.08	8.74	62.47	-22.73	15.19
Dividend Yield (%)	3.84	4.31	9.49	0	2.46

* natural logarithm

Table 11. Regression results using market-based performance measures

This table reports the regression results on the relationship between corporate governance scores of Singapore REITs and their stock performance. The dependent variables are the one-year forward stock returns (in excess of the corresponding annual market returns) as well as the abnormal returns (Jensen alpha) over the same period. Firm size, leverage and growth opportunity are represented by the natural logarithm of total market capitalization, debt-equity ratio, and market-to-book ratio, respectively. Period fixed effects are included in the regression (but not shown above). Panel A reports the results based on the ordinary least squares (OLS) estimator, whilst Panel B reports the results based on the two-stage least squares (2SLS) estimator using the lagged value of the dependent variables as instrumental variables. The total number of firm-year observations in the sample is 64. *, ** and *** denote coefficients are significant at 10%, 5% and 1% level, respectively.

<i>Dependent Variable</i>	<u>Panel A: Ordinary least squares (OLS) regressions</u>				<u>Panel B: Two-stage least squares (2SLS) regressions</u>			
	<u>Model 1</u>		<u>Model 2</u>		<u>Model 3</u>		<u>Model 4</u>	
	<i>Market-adjusted Returns</i>		<i>Risk-adjusted Returns</i>		<i>Market-adjusted Returns</i>		<i>Risk-adjusted Returns</i>	
	<i><u>Coefficient</u></i>	<i><u>t-ratio</u></i>	<i><u>Coefficient</u></i>	<i><u>t-ratio</u></i>	<i><u>t-ratio</u></i>	<i><u>t-ratio</u></i>	<i><u>t-ratio</u></i>	<i><u>t-ratio</u></i>
<i>Explanatory Variables</i>								
Intercept	-0.1658	-0.59	-0.0581***	-4.73	-0.3283	-1.54	-0.1106***	-6.74
R-Index Score	-0.0007	-0.09	0.0006*	1.71	0.0095*	1.83	0.0009**	2.14
Market-to-book ratio	0.1176	0.90	0.0041	0.73	0.052	0.66	-0.0012	-0.2
Firm size	0.0273	0.60	0.0055***	2.76	0.0095	0.26	0.0117***	4.1
Debt-to-equity ratio	-0.0020*	-1.72	0.00004	0.83	-0.0014*	-1.84	0.0001	1.29
R ²	0.261		0.529		0.53		0.651	
Adjusted R ²	0.121		0.440		0.402		0.555	
No. of Observations	64		64		43		43	

Table 12. Robustness Tests using accounting measures of profitability

This table reports the 2SLS regression results on the relationship between corporate governance scores of Singapore REITs and their accounting performance. The dependent variables are return on assets (ROA) and return on equity (ROE). Firm size, leverage and growth opportunity are represented by the natural logarithm of total market capitalization, debt-equity ratio, and market-to-book ratio, respectively. Period fixed effects are included in the regression (but not shown above). Total number of observations in each regression is 43. *, ** and *** denote coefficients are significant at 10%, 5% and 1% level, respectively.

<i>Dependent Variable</i>	<u>Model 5</u>		<u>Model 6</u>	
	<i>Return on Asset (ROA)</i>		<i>Return On Equity (ROE)</i>	
	<u>Coefficient</u>	<u>t-ratio</u>	<u>Coefficient</u>	<u>t-ratio</u>
<u>Explanatory Variables</u>				
Intercept	0.1722**	2.36	-3.3069	-0.16
R-Index Score	-0.0007	-0.37	0.3542	0.70
Market-to-book ratio	0.0244	0.91	-6.2065	-0.82
Firm size	-0.0200	-1.57	1.2601	0.35
Debt-to-equity ratio	-0.0001	-0.30	0.0910	1.24
	R ²	0.243	0.410	
	Adjusted R ²	0.036	0.249	

Table 13. Bid-ask spread of SREITs (partitioned by R-Index scores)

This table reports the absolute difference in the bid-ask spread for an equally-weighted portfolio of firms with scores above the median R-Index score and an equally-weighted portfolio of firms with R-Index scores below the median level. ANOVA tests indicate that all spread differences are significant (the null hypotheses that the two portfolios have the same spread are rejected even at 10% level), except for the difference marked with *.

	No of REITs	Median R-Index	Bid-ask spread (> Median R-Index)	Bid-ask spread (< Median R-Index)	Spread Differences
2004	3	22.5	0.009	0.041	-0.032
2005	5	22.5	0.008	0.025	-0.017
2006	7	22	0.014	0.018	-0.004
2007	15	23	0.016	0.024	-0.008
2008	20	24.25	0.016	0.028	-0.012
All	54	22.5	0.015	0.028	-0.013*

Table 14. Determinants of Bid-Ask Spread

This table reports the OLS and 2SLS regression results on the relationship between corporate governance scores of Singapore REITs and their bid-ask spread. Firm size, leverage and growth opportunity are represented by the natural logarithm of total market capitalization, debt-equity ratio, and market-to-book ratio, respectively. Period fixed effects are included in the regression (but not shown above). Total number of observations for the OLS and 2SLS regressions is 63 and 43, respectively. *, ** and *** denote coefficients are significant at 10%, 5% and 1% level, respectively.

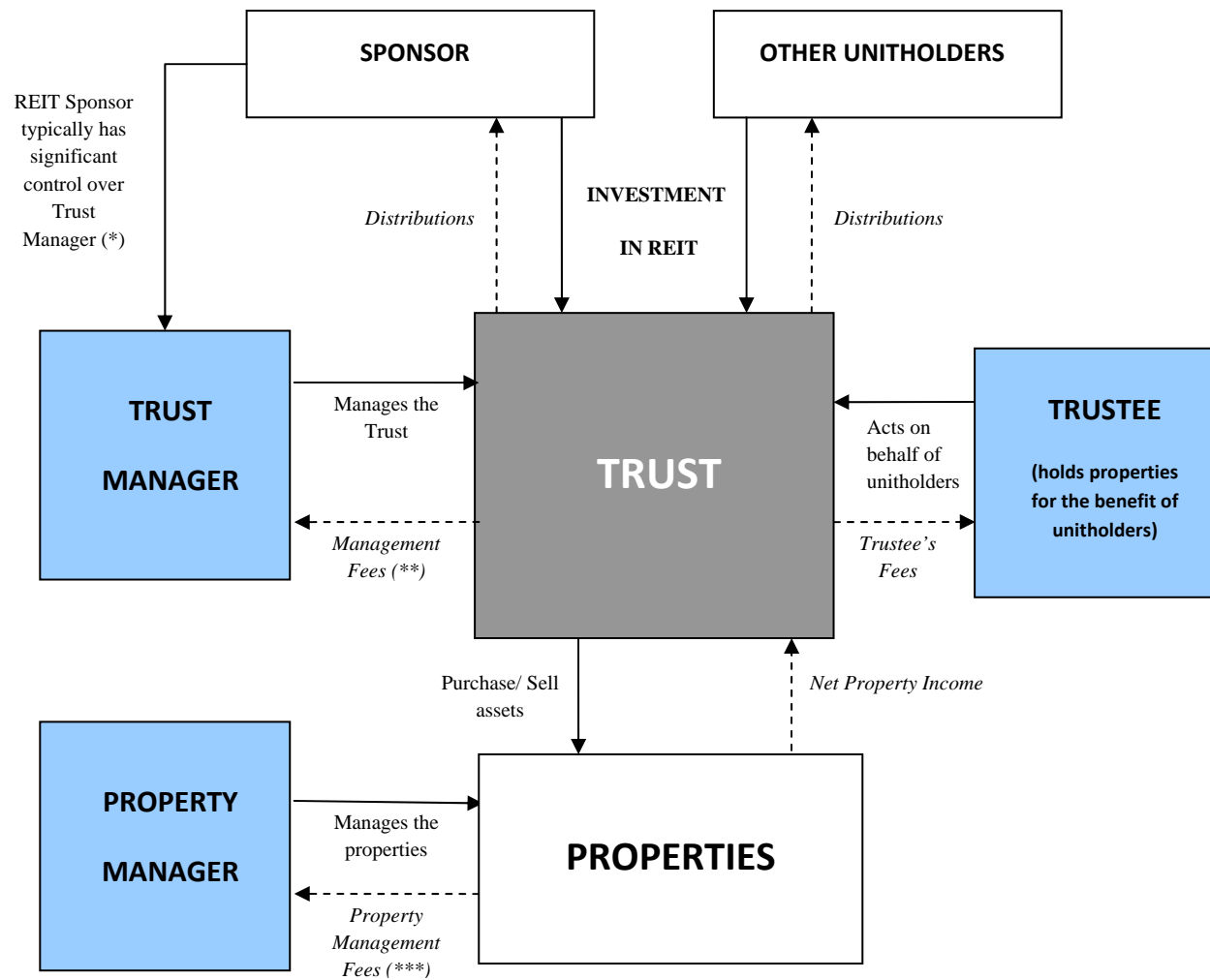
<u>Explanatory Variables</u>	<u>Model 7</u>		<u>Model 8</u>	
	<u>OLS</u>		<u>2SLS</u>	
	<u>Coefficient</u>	<u>t-ratio</u>	<u>Coefficient</u>	<u>t-ratio</u>
Intercept	0.0756***	3.32	0.0916**	2.43
R-Index Score	-0.0022***	-3.70	-0.0029***	-3.17
Market-to-book	-0.0095	-0.90	-0.0124	-0.90
Firm size	0.0006	0.16	0.0022	0.34
Debt-to-equity ratio	-0.0001	-1.21	-0.0002	-1.17
	R ²	0.335		0.318
	Adjusted R ²	0.208		0.132

Table 15. Relationship between R-Index Sub-Scores and Stock Performance

	<i>Audit</i>		<i>Board Matters</i>		<i>Fees</i>		<i>Gearing</i>		<i>Ownership</i>		<i>REIT Organization</i>		<i>Related Party</i>		<i>Remuneration</i>	
	<i>Coef.</i>	<i>t-ratio</i>	<i>Coef.</i>	<i>t-ratio</i>	<i>Coef.</i>	<i>t-ratio</i>	<i>Coef.</i>	<i>t-ratio</i>	<i>Coef.</i>	<i>t-ratio</i>	<i>Coef.</i>	<i>t-ratio</i>	<i>Coef.</i>	<i>t-ratio</i>	<i>Coef.</i>	<i>t-ratio</i>
<u>Explanatory Variables</u>																
Intercept	-0.0569	-0.48	-0.1261***	-6.95	-0.1058***	-6.09	-0.1004***	-5.23	-0.1082***	-6.16	-0.1082***	-5.87	-0.0981***	-4.96	-0.0926***	-5.42
Market-to-book	-0.0134	-0.47	0.0001	0.02	-0.0021	-0.32	-0.0021	-0.32	-0.0009	-0.13	-0.0014	-0.22	0.0029	0.34	0.0015	0.25
Firm size	0.0145***	3.44	0.0132***	5.15	0.0139***	4.91	0.0128***	3.86	0.0138***	4.85	0.0131***	4.09	0.0103**	2.16	0.0112***	3.87
Debt-to-equity ratio	0.0000	0.23	0.0000	0.70	0.0001	1.16	0.0001	0.81	0.0001	0.87	0.0001	1.21	0.0001	1.35	0.0001	1.08
Audit	-0.0177	-0.42														
Board Matters			0.0033**	2.17												
Fees					0.0002	0.14										
Gearing							0.0019	0.65								
Ownership									0.0045	1.08						
REIT organization											0.0022	0.57				
Related Party													0.0036	0.99		
Remuneration															0.0033**	2.11
R ²	0.219		0.683		0.607		0.596		0.599		0.580		0.556		0.663	
Adjusted R ²	0.006		0.597		0.500		0.485		0.490		0.465		0.435		0.571	

This table reports the 2SLS regression results on the relationship between corporate governance sub-scores of Singapore REITs and their risk-adjusted stock performance, as represented by the one-year Jensen alpha. Firm size, leverage and growth opportunity are represented by the natural logarithm of total market capitalization, debt-equity ratio, and market-to-book ratio, respectively. Period fixed effects are included in the regression (but not shown above). Total number of observations in each regression is 43. *, ** and *** denote coefficients are significant at 10%, 5% and 1% level, respectively.

Appendix 1. Externally Managed Asian REITs Generic Structure (with a Sponsor)



Source : The authors and JP Morgan (2009)

(*) The Sponsor has a significant holding in the REIT.

(**) Management fees include base fee, performance fees and acquisition / divestment fees.

(***) Property management fees might include leasing commissions.

Appendix 2: The R-Index Scorecard

This index is relevant for externally managed REITs. Data collection is based on Annual Reports.

Criteria #	Description	SCORE
BOARD MATTERS		
1	<i>Board Composition</i>	
1.1	If the board comprises of at least 5 members but not more than 10	1
2	<i>Board Independence</i>	
2.1	If the proportion of independent directors on board is more than 50%	1
	between 1/3 and 50%	0.5
	less than 1/3	0
3	<i>Nominating and Remuneration Committee</i>	
3.1	If all members are independent	1
	If the majority is independent (including Chairman)	0.5
4	<i>Board Diversity</i>	
4.1	If the Board comprises of individuals with diverse qualifications and backgrounds	1
4.2	If the Board comprises of at least one individual with no real estate background	1
4.3	If the Board comprises of at least one individual with foreign qualification and background	1
4.4	If the Board comprises of at least one independent director with experience in the listed real estate industry (non Asian)	1
5	<i>CEO/ Chairman Separation</i>	
5.1	If the Chairman is an independent director	1
	If the Chairman is a non-executive director	0.5
	If the Chairman is the CEO, is related to the CEO, is a controlling shareholder or is an executive director	0
6	<i>Board Meetings</i>	
6.1	If the Board meets at least 6 times during the year	1
	If the Board meets at least once every quarter	0.5
	If the Board meets less than once every quarter	0
6.2	If attendance at Board meetings is reported	1
7	<i>Disclosure of past/ present directorships</i>	
7.1	If all present and past directorships of directors and senior management are disclosed	1
	If only present directorships are disclosed	0
7.2	If the nature of the directors' relationships with the company is fully disclosed (including affirmative disclosure of relationship or of absence of relationship)	1
8	<i>Nominating Committee and Board Performance</i>	
8.1	If the Board is assisted by a Nominating and Remuneration Committee (NRC)	1
8.2	If the Board Performance is formally assessed	1
8.3	If individual director appraisal is formally carried out	1

8.4	If the process of Board/ individual director performance appraisal is disclosed in detail	1
	<i>BONUSES (+)</i>	
	If at least one Board member is related to the Trustee	1
	If the concept of independent director is properly defined in AR	1
	<i>PENALTIES (-)</i>	
	<i>If the proportion of Board members linked to Sponsor/ Manager is</i>	
	more than 50%	-1
	between 1/3 and 50%	-0.5
	less than 1/3	0
TOTAL SUB SCORE BOARD MATTERS		
AUDIT		
9	<i>Audit Committee Meetings</i>	
9.1	If the Audit Committee meets at least once every quarter	1
9.2	If attendance at Audit Committee meetings is reported	1
10	<i>Audit Committee Composition</i>	
10.1	If all members are independent directors	1
	If all are non executive directors with an independent chairman	0.5
	If one or more of the members are executive directors	0
10.2	If the chairman is a financial expert	1
	<i>BONUSES (+)</i>	
	If at least one Committee member is related to Trustee/ trustee related companies	1
	<i>PENALTIES (-)</i>	
	If at least one member is related to Sponsor	-1
	If at least one member is related to Manager	-1
TOTAL SUB SCORE AUDIT		
REMUNERATION MATTERS		
11	<i>Director and Executive remuneration</i>	
11.1	If adequate disclosure of executive directors' remuneration is provided to unit holders	1
11.2	If fees paid to non executive directors are disclosed in detail	1
11.3	If executive remuneration is, at least in part, performance-related (equity-linked compensation plans)	1
11.4	If remuneration bands and names of top five key executives are disclosed (smaller than S\$100,000 bands)	1
	If remuneration bands and names of top five key executives are disclosed (S\$100,000-S\$250,000 bands)	0.5
	If remuneration bands and names of top five key executives are disclosed (larger than S\$250,000 bands)	0
11.5	If the vesting period of stock options is over a period of 3 years	1

	<i>BONUSES (+)</i>	
	If exact remuneration of executive directors is disclosed (in currency units)	1
	If all board members linked to sponsor (except Chairman) do not receive directors' fees	1
	<i>PENALTIES (-)</i>	
	If a majority of members of the Nominating and Remuneration Committee are linked to sponsor/ manager	-1
	TOTAL SUB SCORE REMUNERATION MATTERS	
	REIT ORGANIZATION	
12	<i>AGM</i>	
12.1	If the REIT has held 1 AGM over FY	1
13	<i>Manager</i>	
13.1	If the manager is fully independent and not related to the sponsor	1
13.2	If rules pertaining to choice of manager are fully disclosed	1
13.3	If provisions for removal of manager are fully disclosed	1
13.4	If consequences of termination of management agreements (e.g. "poison pills") are fully disclosed	1
14	<i>Trustee</i>	
14.1	If Trust Deed is readily available to unitholders	1
14.2	If main provisions of Trust Deed are described in annual reports	1
14.3	If all transactions/links with trustee and trustee related companies are fully disclosed	1
14.4	If the Trustee made direct proposals to the Board over FY	1
15	<i>Governance guidelines</i>	
15.1	If corporate governance guidelines are fully disclosed	1
15.2	If corporate governance practices are properly referenced to Code of Corporate Governance 2005	1
	<i>BONUSES (+)</i>	
	If the REIT has a whistleblowing policy in place	1
	If key risks and methodology to cover them are disclosed in the annual report	1
	If there are rules limiting manager's ability to vote on management changes	1
	<i>PENALTIES (-)</i>	
	If Manager is related to Sponsor	-1
	TOTAL SUB SCORE REIT ORGANIZATION	
	FEES	
16	<i>Structure of Manager's Management Fees</i>	
16.1	If the basis for manager's performance fees is determined net of borrowing costs	1
16.2	If the basis for manager's performance fees is conditional on a benchmark	1

16.3	If manager's management fees include a component based on a Total Shareholder Return- type metric	1
17	<i>Acquisition / Divestment Fees</i>	
17.1	If acquisitions do not trigger fees paid to the Manager of the REIT	1
17.2	If divestments do not trigger fees paid to the Manager of the REIT	1
17.3	If in case of acquisition/disposals of properties, disclosure of fees is made in actual dollar quantum	1
17.4	If in case of acquisition, a profit forecast is made including expected incremental income to the REIT	1
17.5	If in case of disposal fees, value creation for unit holders is fully disclosed	1
18	<i>Disclosure of Fees</i>	
18.1	If fees paid to the Manager, the Property Manager and the Trustee are fully disclosed (including detailed amounts and underlying related party transactions)	1
19	<i>Property Manager's Fees</i>	
19.1	If property manager's fees are based on Net Property Income (and not gross revenue)	1
19.2	If property manager's fees include a performance related component (such as anchors, tenant mix, occupancy rates)	1
19.3	If property manager's fees are conditional on a benchmark	1
19.4	If property manager's fees are based on an incremental scale	1
20	<i>Payment of Fees in Units</i>	
20.1	If conditions for payment of manager's management fees in units are fully disclosed	1
20.2	If in case of acquisition fees, transaction date used for issuance and relevant unit price are reported for each acquisition	1
20.3	If dilution impact of payment of fees in units is fully disclosed	1
21	<i>Manager's Management Fees- Level (*)</i>	
21.1	<i>Manager's management fees as a % of Deposited Property</i>	
	If Manager's management fees are less than 0.6% of Assets under Management (Deposited Property)	1
	If Manager's management fees are equal to 0.6% of Assets under Management (Deposited Property)	0.5
	If Manager's management fees are greater than 0.6% of Assets under Management (Deposited Property)	0
21.2	<i>Total Manager's fees (including acquisition/ divestment fees) as a % of Net Property Income</i>	
	If Total Manager's fees are less than 10% of Net Property Income	1
	If Total Manager's fees are equal to 10% of Net Property Income	0.5
	If Total Manager's fees are greater than 10% of Net Property Income	0
	<i>BONUSES (+)</i>	
	If fees paid to the Manager, Property Manager and Trustee are fully disclosed in a Tabular form	1
	If in case of acquisition fees, holding period for units received in payment is greater than 1 year	1

If payment of management fees in form of units is submitted to the Board or discussed in EGM	1
<i>PENALTIES (-)</i>	
If the Manager has applied for a waiver from local stock exchange's rules with respect to disclosure of fees (related party transactions)	-1
If total fees paid to Manager and Property Manager increased on a year/year basis, while Earnings per Unit decreased or remained equal	-1
If fees paid to property manager include leasing commissions	-1
TOTAL SUB SCORE FEES	
(*) <i>Thresholds defined after Ooi (2010) and industry consultations</i>	
RELATED PARTY TRANSACTIONS	
22 <i>Disclosure</i>	
22.1 If rules pertaining to related party transactions are fully disclosed	1
22.2 If all related party transactions are fully disclosed, including the provision of financial services (e.g. loans)	1
22.3 If adequate disclosures in AR include:	
i) identity of interested parties and their relationships with the REIT	1
ii) details of the assets to be acquired or sold, including a description of these assets and their location	1
iii) the prices at which these assets are to be acquired or sold	1
iv) the details of the valuations performed (including names of the valuers, methods used to value these assets and the dates of the valuations) and their assessed values	1
v) current/ expected rental yield	1
22.4 If transactions greater than 5% of the NAV are immediately announced and subject to unitholders' votes	1
22.5 If transactions greater than 5% of the NAV are reviewed by an independent expert whose opinion was made public to unitholders	1
23 <i>Role of Trustee</i>	
23.1 If one of the two valuers is commissioned independently by the Trustee	1
23.2 If the Trustee provides written confirmation for each related party transaction	1
If the Trustee only reviews the transaction but provides no written confirmation available to unitholders	0.5
24 <i>Independent Experts</i>	
24.1 If relationships of Independent Expert with the Manager or related parties are fully disclosed	1
24.2 If Independent Experts are explicitly selected according to legal standards	1
<i>BONUSES (+)</i>	
If the Trustee or Trustee related companies are defined as related parties	1
If transactions with parties related to Independent Non-Executive Directors are submitted to rules on related party transactions	1
<i>PENALTIES (-)</i>	

If the Audit Committee replaces unitholders in assessing related party transactions	-1
TOTAL SUBSCORE RELATED PARTY TRANSACTIONS	
GEARING	
25 <i>Disclosure</i>	
25.1 If gearing related information is fully disclosed (e.g. debt maturity profile, hedging interest rate risk, loan covenants)	1
25.2 If the REIT has voluntarily applied for a rating	1
25.3 If adequate information is provided about the optimal sources/ uses of funds	1
25.3 If unit holders are consulted about gearing decisions (e.g. EGM)	1
25.4 If "look through" gearing is reported	
<i>PENALTIES (-)</i>	
If Borrowing Costs are greater than 50% of Net Property Income	-1
TOTAL SUBSCORE GEARING	
OWNERSHIP	
26 <i>Disclosure</i>	
26.1 If the top 20 unitholders are disclosed in the annual report	1
27 <i>Concentration</i>	
27.1 If total concentration of share-ownership in the top 20 unitholders is less than 50%	1
27.2 if total concentration of share-ownership in the top 5 unitholders is less than 40%	1
<i>PENALTIES (-)</i>	
If the manager has a strategic shareholding in the REIT (entrenchment)	-1
If shareholders related to the Sponsor/ Manager have a blocking stake in the event of takeover	-1
TOTAL SUBSCORE OWNERSHIP	
TOTAL SCORE	