

Corporate Governance and Performance: The REIT Effect

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Abstract

REITs offer a natural experiment in corporate governance due to the fact that they leave hardly any free cash flow for management, thereby reducing agency problems to a minimum. In their seminal study, Gompers, Ishii and Metrick (2003) find that corporate governance matters for performance. In the spirit of that paper, we exploit a unique and leading corporate governance database to test whether their results hold for U.S. REITs. We document for a sample including ratings of more than 220 REITs that operating performance and firm value are not significantly related to firm-level governance. Furthermore, a trading strategy buying companies with high governance ratings and selling companies with low governance ratings does not lead to significant outperformance. Repeating the analysis with the complete database that includes REITs and non-REITs, and a control sample of firms with high corporate real estate ratios, we find a significantly positive relationship between our governance index and several performance variables, indicating that the lack of a relationship between governance and performance in the real estate sector might be explained by a REIT effect.

I. Introduction

The legal setting and organizational structure under which U.S. Real Estate Investment Trusts (REITs) operate, changes the traditional principal-agent setting. Dividend payout maximization – in effect the reduction of the free cash flow problem as described by Jensen (1986) – is less of a concern for REITs, as US law requires a 90% mandatory payout of net earnings. This legal obligation limits the opportunities for managerial expropriation and is often introduced in countries with a weak legal system, for example Brazil, Chile and Ecuador, as a legal substitute for the weakness of other mechanisms that protect shareholders (La Porta, Lopez-De-Silanes, Shleifer and Vishny 1998). In the case of U.S. REITs, which are embedded in one of the world's strongest legal environments, the mandatory payout of net earnings was never implemented for reasons of shareholder protection. Therefore, the reduction of the agency problem is merely a favorable side-effect. Under the substitution hypothesis (La Porta, Lopez-De-Silanes, Shleifer and Vishny 2000), the legal restrictions regarding REITs might mitigate the need for strong internal corporate governance mechanisms.

On the other hand, it has been argued that the legal restrictions on REITs actually increase the agency problem. First, REIT managers face an obligatory 90% payout distribution over net earnings, which is after a substantial depreciation expense. The difference between net earnings and free cash flow therefore creates discretionary cash. REIT managers can freely decide on the actual payout ratio of these free cash flows.¹ Second, legal restrictions regarding ownership structure, the so-called 5-50 rule, deters the formation of large stockholders, and might protect REIT managers from the scrutiny of the market for corporate control. Third, at least 75% of REIT investments must be in real estate. This restriction on operations might prevent out-of-industry experience for CEOs and lead to managerial short-terminism. Following these arguments, we hypothesize that the legal setting in which REITs operate should be complemented by firm-level corporate governance mechanisms to prevent managerial entrenchment and to reduce agency problems.

Under our 'complement' hypothesis, we would expect that the relation between firm-level corporate governance and firm performance, which has been consistently documented in the literature, holds for U.S. REITs as well. Most notable, Gompers, Ishii and Metrick (2003) find that a portfolio of well-governed firms outperforms a portfolio of poorly governed companies by 8.5%. However, Klapper and Love (2004) and Durnev and Kim (2005) find that a strong institutional setting weakens the relationship between corporate governance and performance. Under the substitution hypothesis, the strong legal setting in which REITs operate would mitigate the need for strong firm-level corporate governance mechanisms and one would therefore expect that the relation between corporate governance and performance is relatively weak.

Studying the structure and effectiveness of corporate governance in REITs is relevant, as the global growth in invested capital in property markets is allocated through indirect property vehicles such as Real Estate Investment Trusts (REITs) and unlisted property funds rather than directly-owned property investments. Meanwhile, an increasing number of countries introduce or have recently introduced a REIT-like structure to facilitate capital inflows in the real estate sector.² The combination of both trends yields

¹ Several papers have shown that the actual payout ratio of REITs is often more than 150% of net earnings. See for example Wang, Erickson and Gau (1993), Downs, Guener and Patterson (2000) and Ghosh and Sirmans (2006).

² See Op 't Veld (2005) for a detailed overview of recent international trends in global listed property markets.

the need for in-depth research on the structure and effectiveness of corporate governance mechanisms in REITs.

This paper contributes to the existing real estate corporate governance literature in three ways. First, instead of relying on self-constructed governance measures, we use the Corporate Governance Quotient index (CGQ), a database that is produced by one of the leading governance data providers, Institutional Shareholder Services (ISS). This index is widely used in practice and includes most of the governance mechanisms that are relevant for investors. Recent examples of investor recognition of ISS in the real estate sector are for example NAREIT reports using ISS data (NAREIT 2003) and the advisory role of ISS in the merger between SL Green Realty and Reckson Associates Realty. The often-used G-Index, which is constructed by Gompers et al. (2003) and based on the Investor Responsibility Research Center (IRRC) surveys, covers two categories of corporate governance: investor rights and takeover protection. Our index includes governance measures on eight different categories and thus represents a much more complete proxy of corporate governance. The use of a governance index has the advantage of capturing the effects of all individual governance mechanisms in one single number (Black, Jang and Kim 2006, Boehren and Odegaard 2003). To our knowledge, this is the first real estate study that exploits a comprehensive corporate governance index.

Second, we not only investigate the governance-performance relationship for the real estate sector, but we also provide results for the complete CGQ dataset, and two control samples. We use the complete CGQ dataset, which includes more than 5000 US stocks, to test whether our specific governance index yields results similar to the existing literature. The first control sample is constructed by selecting all REITs in the G-Index sample, to test whether our results are specific for the CGQ database. The second control sample is constructed to test whether our results are REIT-specific, as it has been documented that firms with a relatively high share of fixed assets ('hard capital') generally have fewer possibilities to engage in value-destructing behavior (Gertler and Hubbard 1988). To this end, we match the REIT sample with a control sample of firms that have a high corporate real estate ratio (CRER), based on the methodology used by Brounen and Eichholtz (2005).

Finally, we use a distinct set of performance measures and methodologies to estimate the impact of corporate governance on firm performance. First, we measure the effect of corporate governance on firm value using a median regression approach with Tobin's Q as the dependent variable. Second, we estimate the effect of corporate governance on operating efficiency by using return on assets (ROA), return on equity (ROE), the net profit margin (NPM), sales growth (SALES) and funds from operations growth (FFO) as proxies. Third, we compare long-term equity performance between well-governed and poorly governed REIT portfolios using the Carhart (1997) four-factor model. Finally, we study how our governance index is related to dividend payout policies.

In line with the substitution hypothesis, we find that corporate governance does not matter for the firm value of U.S. REITs. Second, we document an insignificant relationship between our corporate governance index and various measures of operating performance. Third, the construction of a hedge portfolio, which buys well-governed REITs and sells poorly governed REITs, does not lead to significant outperformance. Our findings for the REIT sample are contrasting results for the full sample and the CRER control sample, where we document a significantly positive relationship between governance, operating performance and firm value. Moreover, the control sample of REITs selected from the G-Index sample does not show a relation between corporate governance, firm value and operating performance either. We explain our findings by the mandatory payout rule and operational restrictions that apply to REITs, which might decrease the need for strong firm-level governance and therefore weaken the relationship between governance and performance. However, we do find that firms with higher governance ratings pay more dividends.

The rest of this paper is structured as follows. In the next section we will shortly review the literature on the relation between firm-level corporate governance and performance. In Section III, we describe our dataset, which comprises the ISS corporate governance index and financial information. In Section IV, we will address the impact of governance on firm value and operating performance, using Tobin's Q and five measures of operating performance. We study the complete database, followed by the analysis of the REIT-sample and the control samples. Section V compares the stock performance of a portfolio of well-governed REITs with a portfolio of poorly governed REITs. Section VI

concerns dividend payout. Finally, Section VII provides discussion and conclusions to the paper.

II. Literature Review: Corporate Governance and Performance

A large body of literature, in real estate as well as in corporate finance, investigates the relationship between corporate governance and performance. Most studies thereby focus on one specific aspect of governance, such as the ownership structure, board composition, or executive compensation, and relate this to performance. In their widely-cited paper, Gompers, Ishii and Metrick (2003, GIM) construct a so-called 'G-Index', in which takeover provisions are used as a proxy for the level of shareholder rights. The creation of an index allows for alternative methodologies, but it should be noted that the GIM index is based on this one aspect of corporate governance only. Creating 'democracy' and 'dictatorship' portfolios, they find evidence that a trading strategy buying firms with the highest shareholder rights and selling companies with the lowest shareholder rights, earns average annualized abnormal returns of 8.5% from 1990 to 1999. Moreover, firm value (Tobin's Q) is inversely related to the number of takeover provisions. Following their paper, a new stream of literature has emerged, using different samples and methodologies, all exploiting governance indices rather than individual governance measures.

First, several studies focus on a specific country. Drobetz, Schillhofer and Zimmermann (2004) investigate the impact of governance on firm performance using a self-constructed corporate governance rating for the German market. Their results are in line with GIM, as governance ratings are positively related to firm valuation and a zero-cost trading strategy that shorts firms with low ratings and buys firms with high ratings leads to an annualized abnormal return of 12% over the sample period. Black et al. (2006) are the first to test for endogeneity issues in the relationship between an overall governance index and firm value, for a sample of Korean firms. The results indicate that the relationship between their corporate governance index and firm value is causal, thereby eliminating some of the often-voiced concerns on the endogeneity of the relationship between governance indices and firm performance.

Second, several studies strongly criticize GIM, based on further empirical tests that use the G-Index. Cremers and Nair (2005) investigate the impact of a corporate governance

index on performance, but also include two measures of internal governance. They find that firms with a low number of takeover provisions outperform firms with a high number of takeover provisions, but this effect is conditional on stock ownership by public pension funds, which indicates the importance of the interaction between the internal and external mechanisms of control. Contrary to GIM, Core, Guay and Rusticus (2006) find that the difference between stock returns of good and bad governance portfolios reverses after 1999, although their findings strengthen the relationship between the G-Index and operating performance.

Finally, the effect of regulatory environments on the relationship between corporate governance and firm valuation – as discussed by LaPorta, Lopez-De-Silanes, Shleifer and Vishny (2002) – has been studied using aggregate corporate governance measures. Klapper and Love (2004) find that firm-level corporate governance is most important in countries with poor investor protection, using a sample of 500 firms across 25 emerging countries. They note that a strong institutional setting might act as a substitute for firm-level corporate governance. Similarly, Durnev and Kim (2005) investigate the effect of legal environments on corporate governance practices in a multi-country setting. Using the CLSA database, they find for a sample of 859 firms in 27 countries that investment opportunities, the need for external financing, and ownership structure all affect the quality of corporate governance. Furthermore, firms with better governance enjoy a higher valuation, measured by Tobin's Q. Most importantly, all these relationships are stronger in less investor-friendly countries.

Real estate research on the relation between corporate governance and firm performance mainly focuses on the functioning of individual monitoring mechanisms. The results of these analyses can subsequently be compared to general corporate governance research, to judge whether the distinct legal setting of REITs indeed affects transparency. Monitoring mechanisms that have been the subject of performance-related real estate research include board structure and/or ownership structure (Friday and Sirmans 1998, Friday, Sirmans and Conover 1999, Ghosh and Sirmans 2003, Hartzell et al. 2006), management structure (Ambrose and Linneman 2001, Cannon and Vogt 1995, Howe and Shilling 1990, Wei, Hsieh and Sirmans 1995), inside ownership (Capozza and Seguin

2003, Han 2006) and involvement of institutional investors (Chan, Leung and Wang 1998, Ling and Ryngaert 1997).³

III. Data

To study the aggregate impact of corporate governance on REIT performance, we exploit the Corporate Governance Quotient (CGQ) index, provided by Institutional Shareholder Services. The CGQ index is based on public disclosure documents, which are used to gather data on 61 different issues in the following eight categories: 1) board of directors, 2) audit, 3) charter and bylaw provisions, 4) anti-takeover provisions, 5) executive and director compensation, 6) progressive practices, 7) ownership, and 8) director education (see Appendix A for a detailed overview of all rating criteria). Based on this information and an internal scoring system, ratings are calculated for each company.⁴

Two ratings are assigned to each company: one score relative to peers that are included in the stock index to which the company belongs, and one score relative to peers in the industry group. Furthermore, four different sub scores are calculated to provide a measure of a company's governance in a particular governance area. These four governance areas include: board of directors, takeover defences, executive and director compensation and ownership, and audit review. Besides the objectivity of the ratings and the broad range of governance variables included, the distinguishing feature of the CGQ index lies in its relative character, which ensures cross-sectional variability in corporate governance scores. The relative ranking opposes the absolute ratings that are used in for example the G-Index.

The CGQ database starts in 2002, but we restrict our analysis to the 2003 – 2005 ratings, as data on sub indices are not or only partially reported before 2003. The initial number of companies in our sample is 4950 in 2003 and increases to 5260 in 2005. For our analysis, we require that the firms in the sample have financial data available, which is obtained from Compustat. This reduces our dataset to 11589 observations (firm-years). After our initial analysis on the complete dataset, we select all equity and mortgage

³ This short list of real estate studies on the relationship between corporate governance and performance is by no means meant to be complete, but merely provides an overview of the monitoring mechanisms that have been studied hitherto.

⁴ Please refer to www.issproxy.com for the exact methodology.

REITs, leading to an initial REIT sample size of 216 property companies in 2003, increasing to 228 property companies in 2005. The information criterion leads to a final REIT dataset of 509 observations (firm-years).

To get a first insight in the CGQ index, Panel A of Table I provides the average corporate governance scores of industries ranking in the top-5 and bottom-5 in 2005. For purpose of comparison, we use the company scores relative to the index to which the company belongs. The real estate sector scores remarkably well, together with the capital-intensive industry 'utilities'. Among the low-ranked industries, we find 'telecommunication services', 'media', and 'personal products'. According to Brounen and Eichholtz (2005), these three industries are characterized by relatively low corporate real estate ratios. The descriptives are surprising, given the evidence that firms with a concentration of 'hard' capital already have fewer possibilities to engage in value-destructing behavior (Gertler and Hubbard 1988). This would make strong firm-level corporate governance less important.

In Panel B of Table I, the correlation statistics between the CGQ index and the four different sub indices are reported. Board, Compensation, Takeover and Audit are all positively correlated with the CGQ index, but the coefficient of Takeover is close to zero. Moreover, Takeover is negatively related with the other subindices. This makes sense intuitively, as firms have to comply with regulations, a variety of committees and public scrutiny regarding compensation schemes, board structure and audit practices, whereas they can decide more freely on the adoption of takeover provisions.

Panel C of Table I provides the summary statistics for the CGQ score of REITs relative to their index peers.⁵ The increasing governance scores show that corporate governance in REITs has improved over the sample period. We also study how governance scores differ between sectors in the REIT sample and find that diversified REITs score lowest (score: 41.1), whereas industrial and office REITs score highest (scores: 66.1 and 63.1 respectively). This indicates that there is more managerial freedom in diversified REITs and investors might therefore face higher agency costs. This is in line with evidence that property companies with sectoral and geographical focus outperform diversified property companies (Boer, Brounen and Op't Veld 2005, Eichholtz, Koedijk and Schweitzer 2001).

⁵ The index governance scores of REITs are relative to four different indices: CGQ Universe, Russell 3000, S&P400 and S&P500.

- Insert Table I here -

IV. Empirical Analysis: Firm Value and Operating Performance

A. Full sample: Governance, Firm Value and Operating Performance

It has been well-established in the literature that governance indices can explain part of the cross-sectional variation in firm valuation. Among others, Brown and Caylor (2006), Core et al. (2006), Durnev and Kim (2005), GIM, and LaPorta et al. (2002) find that companies with high governance rating exhibit higher valuation as compared to their counterparts with a weak governance structure, indicating that investors incorporate ex-ante expectations on corporate governance in the stock price. A positive relation between corporate governance and operating measures of performance, such as return on equity, the net profit margin and sales growth, is less consistently documented.

We test the influence of corporate governance on firm value by regressing Tobin's Q (measured at time t), on the CGQ index (measured at time $t-1$). Tobin's Q is defined as the market value of assets divided by the replacement costs of the assets. The market value of the assets is the sum of the book value of the assets and the market value of equity minus the book value of equity and deferred taxes. We assume that the replacement costs of the assets are the same as the book value of the assets. For the analysis, we use the CGQ score that ranks firms relative to their industry group. Although estimating the effect of changes in the CGQ index on changes in firm value would establish a stronger causal link, the data forces us to use a levels approach, as the time series over which the CGQ index is available covers a rather short time period and the CGQ index does not frequently change over time. A potential caveat is thus that our estimation possibly suffers from endogeneity. Firms with a higher market valuation could well be likely to establish a stronger governance structure, as they have a regular need for outside financing and thus want to signal good governance practices to obtain a lower cost of capital (Klapper and Love 2004). Again, the limited time period over which data is available does not allow for solving the problem of endogeneity in the appropriate way. Instead, we will mitigate the endogeneity issue by including appropriate control variables in our estimation, an approach that is commonly used in the literature.⁶ First, following

⁶ See for example Bauer, Guenster and Otten (2005), Black et al. (2006), Drobetz et al. (2004) and Klapper and Love (2004).

Shin and Stulz (2000), we include the natural logarithm of the firm's book value of assets and the firm's age. Second, we include a control variable for the debt-to-equity ratio, measured by the ratio of debt to total capital, to capture the effect of past financing decisions (Black et al. 2006). Third, we include the current and lagged value of return on equity to account for the influence of performance on firm valuation.

Following the analysis of corporate governance and firm value, we investigate whether a high corporate governance rating also enhances operational performance, following more efficient operations. Therefore, we study the impact of the CGQ index on four different measures of operating efficiency. Following GIM, we select return on equity (ROE), the net profit margin (NPM), and 5-year sales growth (SALES). Additionally, we use return on assets (ROA), as this measure might be preferable to ROE due to its more desirable distributional properties and because it is not affected by leverage and other items (Core et al. 2006). For the analysis on the REIT sample, we substitute SALES by the average 3-year growth in funds from operations per share (FFO). FFO is a widely recognized performance measure in the real estate industry, calculated by adding depreciation and amortization expenses back to earnings. In all estimations, we follow Core et al. (2006) and GIM and include the book-to-market (BM) value as a control variable. In the estimation with FFO as the dependent variable, we also include firm size (SIZE) in the model, proxied by the log of the book value of assets. We industry-adjust all dependent variables by subtracting the industry median for the respective measure, using the industry classifications of ISS.⁷

Table II presents the summary statistics of a selection of financial and accounting variables for year 2005 and their correlations with the CGQ index. The average firm value in our sample is comparable to GIM, but the average operating performance is slightly lower as compared to for example Core et al. (2006), which might be due to the inclusion of a substantial number of small caps in our sample. The correlation statistics show that firms with a high governance score tend to be well-performing large firms with low leverage. The correlation coefficient between Tobin's Q (MTB) and the CGQ score is negative (positive), which is contrary to expectations. However, the preliminary figures in the table omit important determinants from the analysis.

⁷ Industry classifications of ISS are similar to the more commonly used Fama and French (1997) industry classifications.

- Insert Table II here -

We estimate median (least-absolute-deviation) regressions to reduce the influence of outliers, following Core et al. (2006), GIM and Klapper and Love (2004). Besides that, we estimate the models with curtailed regressions (1% at both sides) and obtain results similar to the median regressions. Comparable studies estimate yearly regressions and consequently calculate a Fama-MacBeth (1973) mean and t-statistic. This approach partially avoids the problems of serial correlation and cross-sectional dependence. However, our short time-series does not allow for the same methodology, so we exploit our dataset in a pooled setup. Ideally, we would estimate the panel in a firm fixed-effects setting with time-varying coefficients, but the CGQ index does not change frequently over time, so the estimation will not lead to proper results due to identification of the governance coefficient based on minor changes. Moreover, we expect that cross-sectional variation in corporate governance will be the driver of our results, rather than the small changes in governance over time (Zhou 2001). Therefore, we use a time fixed-effects approach.

The regression results are presented in Table III. Panel A shows the results for firm value, whereas Panel B shows the results for operating performance. We first estimate the model with the overall CGQ index and subsequently use the four governance subscores, Audit, Compensation, Takeover and Board, respectively. In Panel A, the coefficients on the CGQ index and its subscores are significantly positive, except for the 'takeover' subscore. These findings indicate that firms with high rated corporate governance standards are valued higher by the market. Although we exploit a database that has not been widely used in corporate governance studies hitherto, our results confirm previous findings by for example Brown and Caylor (2006), Durnev and Kim (2005), GIM and Klapper and Love (2004). This contrasts criticism on empirical governance-performance studies that findings are often index-specific (Sonnenfeld 2004).

The insignificant effect of the 'takeover' subscore on firm value indicates that investors either not care about or do not pay attention to the adoption of anti-takeover provisions, contrasting investor scrutiny regarding executive compensation or board structure. Finally, the signs on the control variables are in line with expectations: firm value is higher for young and small companies, with low leverage and strong past performance.

Panel B shows several interesting findings. First, we document that the CGQ index is positively related to the performance measures ROE, ROA, and NPM. The results for ROE and NPM are in line with GIM, who find evidence that firms with weaker shareholder rights have weaker operating performance, but where the results of GIM lack statistical significance, our results are statistically strong. With respect to ROA, the results are similar to Core et al. (2006) and Klapper and Love (2004), who find a significantly positive relationship between ROA, the G-Index and the CLSA index respectively. The signs on the control variable are again in line with expectations: operating performance is negatively related to the book-to-market value. For both panels, the pseudo R-squared is low, which is often observed in panels with a large cross-section. Moreover, Brown and Caylor (2006) also use the CGQ index and find similar explanatory power for their models.

- Insert Table III here -

B. REITs: Governance, Firm Value and Operating Performance

The results for the complete dataset confirm existing evidence that well-structured corporate governance leads to better operating performance, even though the results are based on an index that has not been widely used in corporate governance research before. Moreover, the market seems to incorporate this information ex-ante, leading to higher valuations for well-governed firms. For REITs, the distinct legal environment leads to two competing hypotheses: under the substitution hypothesis, we argue that the naturally strong institutional setting in which REIT managers operate mitigates the need for strong firm-level corporate governance. Investors value strong corporate governance mechanisms especially in weak institutional settings (Durnev and Kim 2005, Klapper and Love 2004), and therefore, one could expect a weak relationship between the CGQ index and REIT value. With respect to operating performance, good governance cannot enforce REIT managers to enhance operating performance to the same extent as compared to firms operating in a non-restricted legal environment.

On the other hand, the restrictions of the REIT structure might reduce the pressure of the market for corporate control, and the restrictions on REIT management might lead to increased entrenchment and short-terminism. Under this hypothesis, one would

expect the relation between corporate governance and firm value to be similar to other sectors. With respect to operating performance, stronger firm-level corporate governance would lead to less managerial entrenchment and thus more efficient operations.

Table IV reports the results of the analysis on the REIT sample, with Panel A showing the results for firm value and Panel B showing the results for operating performance. We first estimate all models with the overall CGQ index and subsequently use the four subscores. Contrasting the full sample results, we find no evidence that REITs with higher corporate governance ratings have a higher firm value, except for the significantly positive coefficient on the 'compensation' subscore. The results support the substitution hypothesis: the strong institutional setting in which REITs operate reduces the influence of corporate governance on firm value, which is in line with Durnev and Kim (2006) and Klapper and Love (2004).

Related to the real estate literature, our results are not only in line with, but also add to the findings of Hartzell et al. (2006), as we find similar results while using an aggregate governance index rather than a combination of individual governance measures. However, our results are contrasting several previous studies that have documented a significantly positive relationship between firm value and managerial ownership (Capozza and Seguin 2003, Han 2006) and between firm value and identity of management (Capozza and Seguin 2000). This inconsistency might be due to our governance index, which comprises a wide variety of individual governance measures and therefore represents an overall proxy for the corporate governance structure of a firm. As the different corporate governance mechanisms of a firm are not independent (Black et al. 2006), the effect of an individual governance mechanism might not be reflected in the overall results.

One distinct result is the significantly positive coefficient on the 'compensation' subscore, which implies that REITs with well-structured executive compensation contracts, aligning pay with performance, are valued by investors. We explain this finding in two ways. First, empirical evidence shows that well-designed compensation packages, optimizing the alignment of interest between managers and shareholders, in general lead to higher firm value (Mehran 1995). Second, for REIT managers there are only a few opportunities to extract benefits from gross earnings, and executive compensation offers

such an opportunity. Therefore, REIT shareholders might especially monitor executive compensation practices and value REITs that have proper compensation schemes in place.

In Panel B of Table IV, we document no significant evidence on the relationship between corporate governance and operating performance. In line with evidence on firm value, this is contrasting the full sample results, where we documented that weak corporate governance leads to lower operating performance. We can explain the lack of a significant relationship between corporate governance and operating performance in REITs by the restricted environment in which REIT managers operate. The obligation to obtain at least 75% of income from real estate investments limits operational freedom, so managers can influence operating performance to a lesser extent, independent of the structure of corporate governance. Evidence regarding the relation between governance and operating performance is virtually non-existent in the real estate literature. Only Capozza and Seguin (2000) document that REITs with external management have less cash flow available for distribution as compared to REITs with internal management. Although the identity of management is not specifically addressed in the CGQ index, we expect the influence of external management on operating performance to be marginal in our sample, as the number of REITs with this structure has decreased dramatically over the past few years.

Summarizing, the strength of firm-level corporate governance does not seem to influence firm value and operating performance of REITs. We argue that this result might be due to a 'REIT effect', which supports the substitution hypothesis: the naturally strong institutional setting in which REIT managers operate partially substitutes the need for monitoring mechanisms. Therefore, investors have no fundamental reason to pay a premium for well-governed REITs and operating performance does not improve with strong governance mechanisms in place.

- Insert Table IV here -

C. Control Samples

We find for the sample representing the complete ISS universe that good corporate governance practices have a positive effect on operating performance and are valued

higher by the market. For REITs, there is no evidence that good governance leads to better operating performance and higher firm value, which might be explained by a 'REIT effect': the distinct legal setting in which REITs operate limits managerial freedom through the obligation to pay out at least 90% of net earnings and through operational restrictions. Therefore, firm-level corporate governance has less impact on operating performance and is less valued by investors.

However, there are alternative explanations to the REIT effect. First, the lack of a relation between corporate governance and performance in our sample of REITs might be inherent to the nature of the product –real estate. Property companies are transparent by nature as the individual properties in the portfolio are relatively easy to value. Second, the lack of findings might be due to the structure of the product we investigate – Real Estate Investment Trusts. The REIT industry is very capital-intensive as the asset base of these companies mainly consists of fixed assets, and expenses on intangible assets such as for example marketing and R&D are limited. Therefore, there might be less scope for agency problems.

To empirically investigate the alternative explanations to the REIT effect, we construct a sample that is based on a selection of capital-intensive companies. To this end, we match the REIT sample with companies that have a comparable corporate real estate ratio. Furthermore, to test whether our results are driven by the specifics of the CGQ index, we repeat our analysis with the G-Index, which was first constructed and exploited by GIM and later used by for example Core et al. (2006).

C.I. Control Sample: Firms with High Corporate Real Estate Ratio

REITs are typically companies with a relatively large percentage of fixed assets. Gertler and Hubbard (1988) show that companies with a concentration of 'hard' capital have fewer possibilities to engage in value-destructing behavior, which might be an alternative explanation to our findings. So, as a second robustness check, we construct a control sample that consists of companies with high corporate real estate ratios (CRERs). Following the methodology of Brounen and Eichholtz (2005), this ratio quantifies relative real estate ownership in the following way:

$$(1) \quad CRER = \frac{PPE}{Total\ Assets}$$

Where PPE represents Worldscope item 'Property, Plant and Equipment' and Total Assets is the book value of a firm's total assets. We exclude REITs from the total sample, sort the remainder on their CRERs and match the CGQ REIT sample on a yearly basis. After collecting the necessary accounting data, this leads to a control sample of 542 observations (firm-years). The average CGQ score for the control sample ranges from 49.4 in 2003 to 54.1 in 2005; the latter is slightly above the full-sample average but lower than the average governance score for the REIT sample. To test whether our results for REITs can be explained by the relatively high share of fixed assets, we estimate regressions similar to the analysis in sections IV.A. Again, we industry-adjust the performance measures and estimate median regressions to correct for outliers.

Table V presents the results. Similar to the results for the complete sample, we find that the CGQ index is significantly and positively related to firm value and operating performance, except for the performance measure 'sales growth'. This makes it unlikely that our findings regarding the governance-performance relation in the real estate sector are the result of the high percentage of real estate assets in REITs and may well be associated with the legal setting in which REITs operate. This suggests the existence of a 'REIT effect' in explaining the relation between firm-level corporate governance and performance.

— Insert Table V here —

C.II. Control Sample: REITs in G-Index Sample

In Sections IV.A and IV.B, we frequently compare our results to those of Core et al. (2006) and GIM. These authors derive their governance index, which is the so-called G-Index, from publications of the Investor Responsibility Research Center. However, the G-Index includes takeover provisions only. One could argue that our findings cannot be compared with GIM directly, as the CGQ index incorporates a much broader range of corporate governance mechanisms. As a robustness check, we therefore repeat our analysis with the G-Index. The index contains bi-annual ratings on approximately 2000

U.S. companies.⁸ We select all REITs in 2004 and 2006 and collect financial information from Compustat. This leads to a total sample of 113 observations (firm-years). Panel A of Table VI shows the average number of takeover provisions in place for the REIT sample and the total G-Index sample, respectively. We note that the G-Index has a range from 1 to 24, where each point represents a takeover provision. So, a lower score implies less restricted shareholder rights. The descriptives show that REITs have less takeover provisions in place as compared to the full sample, which means that shareholder rights are relatively strong in REITs. In Panel B, we present the results of the regression analysis, in which we use Tobin's Q, ROE, ROA and FFO as dependent variables respectively. Contrasting Core et al. (2006) and GIM, we do not find a significant relation between the G-Index, firm value and operating performance. These findings confirm the results we documented in the previous sections and support the existence of a 'REIT effect.'

V. Corporate Governance and Equity Returns

The analysis in Section IV shows that corporate governance is not incorporated in the valuation of REITs. In theory, if governance would matter and investors do not immediately recognize this, stock returns will differ between REITs with different governance ratings. In line with this hypothesis, GIM show that a portfolio of well-governed firms outperforms a portfolio of poorly governed firms by an annualized rate of 9% per year. Although the lack of a relationship between operating performance and governance in the REIT sector does not lead to the a priori expectation that equity performance differs between well- and poorly governed REITs, ex-post investor recognition of corporate governance in REITs could lead to differences in stock performance. Therefore, we match the REITs in our CGQ database with CRSP stock data and consequently analyze the impact of corporate governance on REIT equity returns by constructing two mutually exclusive stock portfolios: the 'High-Rated Portfolio', which includes the companies that represent the 30% of market capitalization rated highest by ISS, and the 'Low-Rated Portfolio', which includes the companies that represent the 30% of total capitalization rated lowest by ISS. Next, a difference portfolio is constructed by subtracting the monthly return of the low-rated portfolio from the high-rated portfolio, which resembles a trading strategy buying stocks with a high governance rating and shorting stocks with a low governance rating. We rerank the

⁸ Data from Andrew Metrick's website.

portfolios annually at the beginning of June; companies that no longer appear in the database are excluded. The low variability of the ratings allows us to extend the 2003 ratings backward to 2000, in order to obtain meaningful results in the further time-series analyses.⁹ Using our extended governance ratings, we obtain end-of-month value-weighted portfolio returns for 72 months, from June 2000 through June 2006.

As differences in equity returns between the two distinctive governance portfolios might well be driven by differences in style or riskiness of the portfolios, we employ the four-factor Carhart (1997) model to account for these style differences. These common risk factors can as well be used to explain returns on REIT-stocks (Peterson and Hsieh 1997).

$$(2) \quad R_t = \alpha + \beta_0(R_m - R_f)_t + \beta_1(SMB)_t + \beta_2(HML)_t + \beta_3(MOM)_t + \varepsilon_t$$

where

SMB = the monthly return on a small minus big factor portfolio in month t

HML = the monthly return on a high minus low book-to-price portfolio in month t

MOM = the monthly return on a past months' winners minus past months' losers portfolio in month t

Although there is an ongoing discussion whether these factors are risk-proxies, we avoid discussion on this issue and view the four-factor approach as a method of performance attribution. Thus, alpha can be interpreted as the return in excess of what could have been achieved by means of passive investment in the factors. The SMB, HML and MOM factors are obtained from the Kenneth French Data Library.¹⁰

Table VII summarizes the results of the OLS regression on equation (2), where Panel A shows the results for value-weighted portfolios. Overall, the fit of the regressions is high, with adjusted R^2 s of 0.90 and 0.93 for the high-rated and low-rated portfolio, respectively. The high-rated governance portfolio has an insignificant alpha, so well-governed firms have no risk-adjusted outperformance over the sample period. Portfolio returns seem to be driven by value stocks and past months' losers. Surprisingly, the portfolio with low-

⁹ Although this procedure might introduce a backward-looking bias, we still perceive backward extension of ratings as a reasonable solution, because analysis shows that the governance ratings tend to be rather stable over time (time series correlation coefficient corresponds to 0.8). Procedure is based on Bauer et al. (2005) and Derwall et al. (2005).

¹⁰ See http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html for more information.

rated firms shows significant outperformance over the sample period; the alpha is corresponding to an annualized return of 3%. Consequently, the alpha on the difference portfolio is negative, though statistically insignificant, which indicates that equity performance of high- versus low rated companies does not differ significantly over our sample period, after correcting for size, book-to-market value and momentum factors.

We perform several robustness checks of our results. First, we use different cut-off points (range: 10% - 50%) to check to what extent our results are influenced by the formation of the portfolios. We find that the results do not change significantly. Second, we repeat our analysis for two subsamples, split between the first and the second half of the sample period. The results are presented in panels B and C of Table VII. Although the alpha of the difference portfolio for the second half of the sample is still insignificantly different from zero, the first half of the sample shows significant underperformance of high-rated, well-governed REITs compared to low-rated, poorly governed REITs. Our results on corporate governance and REIT equity performance contrast findings by Cremers and Nair (2005), Drobetz et al. (2004) and GIM, who document significant outperformance of well-governed companies over poorly governed companies. However, there are several explanations for the absence of this relation.

First, and most important, the lack of a relation between corporate governance and equity performance in REITs is in line with our findings in Section IV, where we document no relation between corporate governance and operating performance. If corporate governance does not influence fundamental performance of REITs, investors cannot be surprised by higher (lower) expected operating performance for well- (poorly) governed REITs and stock prices will not differ ex-post.

Second, Core et al. (2006) document similar results in their study, using the G-Index. They find that stock returns of a 'hedge' portfolio (similar to our difference portfolio) reverse after 1999 and even become negative. An explanation for their finding is that the outperformance of well-governed firms might be time-specific. Moreover, poor governance does not cause weak stock returns as long as investors are not surprised by the operating underperformance of weakly governed companies (and vice versa for well-governed companies). Investor recognition of corporate governance practices has increased tremendously in the last decade and we test the relationship between corporate

governance and equity performance in a very recent time frame, so all of the information on corporate governance may as well be directly incorporated in the stock price.

Third, Cremers and Nair (2005) find that the relationship between corporate governance and equity performance is influenced by the presence of internal as well as external governance mechanisms. In case of absence of a strong market for corporate control, they document a weak relationship between internal governance and equity performance. Campbell, Ghosh and Sirmans (2001) and Eichholtz and Kok (2007) show that the market for corporate control works differently for the property sector, as hostile takeovers hardly take place. This might be a partial explanation for the absence of a governance-equity performance relationship for REITs.

Fourth, our analysis is performed in an upgoing market during which the listed real estate sector has attracted a large inflow of capital from both retail and institutional investors. In the current real estate frenzy, investors might invest in REITs regardless of their governance practices. This is illustrated by the Equity Office Properties Trust, a REIT that was recently acquired by Blackstone. Equity Office consistently ranked among the best-governed companies in the CGQ index over our sample period and fundamental performance was strong. Nonetheless, Equity Office consistently underperformed the Wilshire REIT Index. It remains to be seen how corporate governance will affect both fundamental performance and stock performance in a market downturn, when well-governed REITs could have an edge over their less transparent counterparts.

- Insert Table VII here -

VI. Corporate Governance and REIT Dividend Policy

Firm-level corporate governance does not seem to influence operating performance in U.S. REITs, which might be due to limitations on operations and the obligatory payout of net earnings. However, we argued earlier that REIT managers can decide on the actual payout ratio of the free cash flow, as they face an obligatory 90% payout distribution over net earnings, which includes the depreciation expense. The gap between net earnings and the free cash flow available to managers therefore creates discretionary cash. So, although corporate governance has no impact on REIT operating performance, it might be the case that strong firm-level corporate governance could force REIT

managers to increase dividend payout. Wang, Erickson and Gau (1993) indeed find that agency costs are an important determinant of dividend payout, whereas Ghosh and Sirmans (2006) and Feng, Ghosh and Sirmans (2007) document a positive relationship between dividend payout and managerial entrenchment. This counterintuitive result might be due to adequate monitoring mechanisms, which force entrenched managers to pay out free cash flows.

To test whether corporate governance affects dividend policy, we add a dividend payout variable to our dataset. We measure actual dividend payout as dividends per share divided by earnings per share. As shareholders might feel less need to urge well-performing managers to pay high dividends, we control for managerial performance by adding FFO growth and ROA as control variables. Moreover, firms with more debt should be able to payout more dividends, so we add the leverage ratio to the equation. We also include control dummies for time and for mortgage REITs (Wang et al. 1993).

Table VIII shows that REITs with higher corporate governance ratings distribute significantly more dividends. Although the legal restrictions on REIT managers impose obligatory distribution of 90% of net earnings, substantial discretionary free cash flows follow from the depreciation expense. REIT managers can decide on the purpose of these free cash flows, but the results show that in a strong corporate governance setting, a higher payout is preferred. This implies that REITs have to go to the capital market more frequently, which scrutinizes management investment decisions. The results for the subindices show that a strong board and well-structured compensation packages in particular increase dividend payout, whereas takeover provisions and audit quality do not seem to matter. If compensation is well-structured and in line with performance, REIT managers might be eager to distribute more dividends, as these increase the value of indirect compensation, such as share incentive plans (SIPs). Furthermore, the board can directly influence dividend policies, as opposed to the indirect pressure by the market of corporate control.

- Insert Table VIII here -

VII. Concluding Remarks

Although the relation between corporate governance and performance has been studied extensively in the corporate finance literature, this relation has been studied only partially for listed property companies, as the majority of real estate studies investigate the effect of a combination of individual corporate governance elements on performance. This study fills the empirical gap by investigating the aggregate effect of corporate governance on performance, using a corporate governance index (CGQ) that is provided by a leading governance-rating agency, Institutional Shareholder Services, and that covers a far greater number of REITs than other corporate governance indices.

REIT managers operate in a restricted setting. On the one hand this reduces the agency conflict by curbing managerial freedom, which might substitute the need for alternative corporate governance mechanisms and raise industry-wide governance standards. On the other hand, the legal restrictions might increase managerial entrenchment, thereby increasing the need for strong firm-level monitoring mechanisms.

In line with the substitution hypothesis, we document that the CGQ index is neither related to REIT value, as measured by Tobin's Q, nor to operating measures of performance, proxied by ROA, ROE, sales growth and FFO growth. Moreover, we show that no significant outperformance can be obtained by exploiting a zero-cost portfolio that buys REITs with high governance ratings and sells REITs with low governance ratings. These results contrast the existing literature and empirical evidence on the complete CGQ sample. Moreover, our findings are supported by evidence on two control samples: the first control sample is constructed by selecting all REITs in the G-Index sample and the second control sample exists of companies with relatively high corporate real estate ratios. Our results corroborate with expectations that corporate governance has less impact on firm performance in strongly regulated business environments, as documented by Durnev and Kim (2005) and Klapper and Love (2004). We explain the lack of a relationship between corporate governance and performance in REITs as a 'REIT effect'.

To conclude, we note that our paper has three caveats. First, we argue that corporate governance is static and that cross-sectional differences rather than time-series changes explain the effect of corporate governance on performance, but the short time span does not allow us to test how severe the endogeneity issue actually is. Second, the relatively small sample of REITs might be too small to provide enough power to the empirics.

However, this is inherent to real estate research and cannot be solved appropriately at the moment. Countries all over the world converge towards standards for listed property companies comparable to U.S. REITs. This will likely broaden the scope of future corporate governance research in the real estate sector. Third, our index allows us to focus on all measures of corporate governance, but not ownership concentration. As institutional ownership is increasing in REITs and the role of shareholders is becoming more prominent, future research might incorporate this external governance mechanism in the analysis.

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Table I. Summary Statistics ISS Corporate Governance Index

<i>Panel A. CGQ Index Scores</i>				
	2005			
	<i>CGQ</i>	<i>SD</i>		
<i>Top-5</i>				
Real Estate	64.5	28.6		
Utilities	63.1	28.2		
Banks	60.2	26.7		
Pharmaceuticals & Biotechnology	56.7	26.0		
Insurance	54.5	28.2		
<i>Bottom-5</i>				
Hotels, Restaurants and Leisure	46.4	27.5		
Telecommunication Services	42.4	27.1		
Household & Personal Products	41.0	26.2		
Food Beverage & Tobacco	38.0	30.1		
Media	35.6	29.8		
<i>Panel B. Correlations Between Subindices</i>				
	<i>CGQ</i>	<i>Board</i>	<i>Compensation</i>	<i>Takeover</i>
<i>Board</i>	0.78***			
<i>Compensation</i>	0.52***	0.24***		
<i>Takeover</i>	0.04***	-0.11***	-0.08***	
<i>Audit</i>	0.44***	0.36***	0.10***	-0.05***
<i>Panel B. CGQ Index Scores - Real Estate</i>				
	2003	2004	2005	
<i>Governance index</i>	<i>CGQ</i>	<i>CGQ</i>	<i>CGQ</i>	
Mean	50.5	54.6	64.5	
Standard deviation	26.8	29.3	28.6	
<i>Subindex means</i>				
<i>Board</i>	3.1	3.5	3.4	
<i>Compensation</i>	3.4	3.5	3.4	
<i>Takeover Defenses</i>	2.7	3.4	3.5	
<i>Audit</i>	3.5	3.8	3.3	
<i>Number of firms</i>	216	210	228	

Notes: Panel A of Table I shows the average ISS Corporate Governance Quotient scores for firms ranking in the top-5 and in the bottom-5 of the CGQ universe in 2005. Scores are based on the Index CGQ, which represents a score relative to the scores of peers in the index to which the company belongs. The ratings criteria on which the ratings are based are provided in Appendix A. Range of scores is 1 – 100. Panel B provides the pairwise correlations between the CGQ index and the four subindices. Panel C shows the CGQ Index scores for the sample of U.S. REITs, from 2003 to 2005. Scores on subindices are provided in the lower part of the table, range of subscores is 1 – 5.

*** indicates significance at the 1% level.

Table II. Summary Statistics of Complete Sample

	Mean	Median	SD	Corr with CGQ
Q	2.16	1.52	1.89	-0.06***
ROE	2.94	9.37	53.46	0.01***
ROA	1.84	3.83	25.30	0.12***
log(Size)	2.56	2.59	1.02	0.37***
Leverage	0.69	0.02	3.24	-0.18***
BM	0.43	0.43	0.56	0.01***

Notes: Table II provides full sample summary statistics for a selection of financial and accounting measures in 2005. The last column provides the pairwise correlation for each of the variables with the CGQ index.

*** indicates significance at the 1% level.

Table III. Corporate Governance, Firm Value and Operating Performance: Full Sample

<i>Panel A : Industry-Adjusted Tobin's Q</i>					
Intercept	0.008 (0.84)	0.012 (1.02)	0.014 (1.40)	0.013 (0.75)	0.010 (0.94)
Gov Index	0.001 (8.37)***				
Audit Index		0.005 (2.59)**			
Compensation Index			0.005 (3.13)***		
Takeover Index				0.003 (1.12)	
Board Index					0.013 (6.83)***
Size	-0.015 (-6.23)***	-0.013 (-4.87)***	-0.013 (-5.38)***	-0.011 (-4.09)***	-0.018 (-6.77)***
Leverage	-0.019 (-68.76)***	-0.019 (-59.14)***	-0.019 (-63.76)***	-0.019 (-58.96)***	-0.019 (-60.59)***
ROE	0.000 (70.44)***	0.000 (37.67)***	0.000 (44.86)***	0.000 (38.99)***	0.000 (48.71)***
ROE _{t-1}	0.001 (107.83)***	0.001 (176.68)***	0.001 (197.40)***	0.001 (176.69)***	0.001 (179.83)***
Age	-0.015 (-2.18)**	-0.008 (-1.06)	-0.011 (-1.46)	-0.010 (-1.21)	-0.013 (-1.67)*
Year Fixed Effects	Y	Y	Y	Y	Y
Industry Controlled	Y	Y	Y	Y	Y
Median Adjusted	Y	Y	Y	Y	Y
n	11589	11589	11589	11589	11589
Pseudo-R ²	0.57%	0.65%	0.65%	0.64%	0.71%
<i>Panel B: Industry-Adjusted Operating Performance</i>					
	ROE	ROA	NPM	Salesgrowth	
Intercept	-5.165 (-24.42)***	-1.376 (-15.19)***	-0.024 (-14.68)***	-1.743 (-5.55)***	
Gov Index	0.027 (9.76)***	0.006 (4.84)***	0.000 (11.23)***	-0.004 (-1.00)	
BM	-15.411 (-68.75)***	-4.304 (-46.06)***	-0.051 (-30.08)***	-7.206 (-21.94)***	
Year Fixed Effects	Y	Y	Y	Y	
Industry Controlled	Y	Y	Y	Y	
Median Adjusted	Y	Y	Y	Y	
n	11589	11589	11589	11589	
Pseudo-R ²	1.79%	1.18%	0.06%	1.01%	

Notes: Panel A of Table III presents the results of the median regression of industry-adjusted Tobin's Q on the CGQ index and control variables. In the second column, the CGQ index is the main explanatory variable, whereas the results in the third through sixth columns are estimated using the subscores Audit, Compensation, Takeover, and Board, respectively. Tobin's Q is defined as the book value of assets plus the market value of equity minus the book value of equity and deferred taxes, the control variables include current and lagged return on equity (ROE), the natural logarithm of the book value of assets (Size), the natural logarithm of age and the debt ratio (Leverage). Panel B provides the estimation results of the median regressions for return on equity (ROE), return on assets (ROA), the net profit margin (NPM) and sales growth on the CGQ index and the natural logarithm of the book-to-market ratio (BM). Each dependent variable is net of the industry median, which is calculated following the ISS industry classifications.

* indicates significance at the 10% level.

** indicates significance at the 5% level.

*** indicates significance at the 1% level.

Table IV. Corporate Governance, Firm Value and Operating Performance: REITs

<i>Panel A: Tobin's Q - REITs</i>					
Intercept	1.143 (10.59)***	1.213 (12.11)***	1.122 (11.34)***	1.141 (8.31)***	1.169 (11.54)***
Gov Index	0.000 (0.59)				
Audit Index		-0.010 (-0.89)			
Compensation Index			0.025 (2.02)***		
Takeover Index				0.005 (0.31)	
Board Index					-0.004 (-0.32)
Size	-0.006 (-0.25)	0.001 (0.07)	-0.015 (-0.64)	0.001 (0.06)	0.003 (0.11)
Leverage	-0.041 (-4.34)***	-0.046 (-5.74)***	-0.034 (-3.92)***	-0.043 (-4.86)***	-0.043 (-4.94)***
ROE	0.001 (8.44)***	0.001 (9.89)***	0.001 (9.44)***	0.001 (8.70)***	0.001 (9.07)***
ROE _{t-1}	0.000 (20.00)***	0.000 (24.85)***	0.000 (23.21)***	0.000 (22.41)***	0.000 (20.81)***
Age	0.098 (1.61)	0.086 (1.64)	0.070 (1.24)	0.083 (1.40)	0.089 (1.57)
Year Fixed Effects	Y	Y	Y	Y	Y
Median Adjusted	Y	Y	Y	Y	Y
n	509	509	509	509	509
Pseudo-R ²	5.38%	5.40%	5.78%	5.32%	5.31%
<i>Panel B: Operating Performance - REITs</i>					
	ROE	ROA	FFO growth	NPM	
Intercept	5.163 (5.34)***	4.646 (14.46)***	-0.341 (-1.85)*	0.150 (4.72)***	
Gov Index	-0.019 (-1.24)	-0.002 (-0.48)	-0.002 (-0.87)	0.000 (-0.44)	
BM	-11.833 (-7.81)***	-2.720 (-5.86)***	-0.211 (-1.38)	-0.040 (-1.06)	
Size			0.130 (2.14)**		
Year Fixed Effects	Y	Y	Y	Y	
Median Adjusted	Y	Y	Y	Y	
n	509	509	509	509	
Pseudo-R ²	0.59%	1.94%	0.65%	0.22%	

Notes: Panel A of Table IV presents the median regression results for the REIT sample of Tobin's Q on the CGQ index and control variables. In the second column, the CGQ index is the main explanatory variable, whereas the third through sixth column are estimated with subscores Audit, Compensation, Takeover and Board respectively. Tobin's Q is defined as the book value of assets plus the market value of equity minus the book value of equity and deferred taxes, the control variables include current and lagged return on equity (ROE), the log of the book value of assets (Size), the log of age and the debt ratio (Leverage). Panel B provides the estimation results with return on equity (ROE), return on assets (ROA), funds from operations per share (FFO/Share), and the net profit margin (NPM) on the CGQ index, as dependent variables respectively. We include the natural logarithm of the book-to-market ratio (BM) and size as control variables.

* indicates significance at the 10% level.

** indicates significance at the 5% level.

*** indicates significance at the 1% level.

Table V. Control Sample: Firms with High Corporate Real Estate Ratio

<i>Tobin's Q and Operating Performance - Control Sample</i>					
	Tobin's Q	ROE	ROA	NPM	Salesgrowth
Intercept	1.854 (11.72)***	-5.142 (-5.49)***	-1.426 (-3.20)***	-0.023 (-2.79)***	-1.610 (-0.99)
Gov Index	0.003 (2.93)***	0.038 (3.06)***	0.013 (2.25)**	0.000 (4.03)***	0.008 (0.38)
BM		-17.250 (-14.21)***	-5.487 (-9.55)***	-0.084 (-7.83)***	-9.098 (-4.35)***
Size	-0.207 (-4.43)***				
Leverage	-0.066 (-2.43)**				
ROE	0.000 (-0.39)				
ROE _{t-1}	0.000 (0.32)				
Age	0.034 (0.38)				
Year Fixed Effects	Y	Y	Y	Y	Y
Industry Controlled	Y	Y	Y	Y	Y
Median Adjusted	Y	Y	Y	Y	Y
n	542	542	542	542	542
Pseudo-R ²	6.78%	6.45%	4.10%	0.24%	0.84%

Notes: Table V presents the control sample results of the median regression of Tobin's Q and operating performance on the CGQ index and control variables. The control sample is constructed by matching the REIT sample with firms that have a high corporate real estate ratio (CRER). In the second column, Tobin's Q is regressed on the CGQ index, where Tobin's Q is defined as the book value of assets plus the market value of equity minus the book value of equity and deferred taxes, the control variables include current and lagged return on equity (ROE), the natural logarithm of the book value of assets (Size), the natural logarithm of age and the debt ratio (Leverage). Columns three through seven provide the estimation results of the median regressions for return on equity (ROE), return on assets (ROA), the net profit margin (NPM) and sales growth on the CGQ index and the natural logarithm of the book-to-market ratio (BM). Each dependent variable is net of the industry median, which is calculated following the ISS industry classifications.

* indicates significance at the 10% level.

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Table VI. Control Sample: REITs in G-Index

<i>Panel A. Descriptives G-Index</i>				
	2004		2006	
	Mean	Stdev.	Mean	Stdev.
GIM sample	9.05	2.56	9.02	2.52
REIT sample	7.67	2.11	8.34	2.21
<i>Panel B. Tobin's Q and Operating Performance</i>				
	Tobin's Q	ROE	ROA	FFO Growth
Intercept	2.659 (8.04) ^{***}	20.860 (3.24) ^{***}	6.755 (3.05) ^{***}	0.431 (1.74) [*]
Gov Index	0.009 (0.61)	-0.460 (-0.98)	-0.234 (-1.33)	-0.038 (-1.01)
BM		-14.415 (-1.51)	-3.707 (-2.61) ^{**}	-0.316 (-2.19) ^{**}
Size	-0.194 (-2.78) ^{**}			-0.005 (-0.06)
Leverage	-0.010 (-4.72) ^{***}			
ROE	0.005 (2.77) ^{**}			
ROE _{t-1}	0.007 (8.56) ^{***}			
Age	0.134 (0.88)			
Year Fixed Effects	Y	Y	Y	Y
Median Adjusted	Y	Y	Y	Y
n	113	113	113	113
R ² adj	27.83%	7.04%	6.64%	8.96%

Notes: Panel A of Table VI presents descriptives of the G-Index for the full sample and the REIT sample. The G-Index is derived from the IRRC data and downloaded from Andrew Metrick's website. The significance of difference between the two means is tested using an independent sample t-test. We only show significance of the t-value. Panel B presents the OLS regression results with Tobin's Q, ROE, ROA and FFO Growth as measures of firm value and operating performance, respectively. White's (1980) heteroskedasticity-robust *t*-statistics are in parentheses.

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Table VII. Governance and Equity Performance: Carhart (1997) Four Factor Model

Panel A. 30% value weighted portfolio - Full period						
	α	$Rm-Rft$	SMB	HML	MOM	Adj. R ²
Good governance	-0.479 (-0.25)	0.842 *** (21.39)	-0.021 (-0.39)	0.113 ** (2.25)	-0.081 *** (-2.89)	89.65%
Bad governance	3.206 * (1.89)	0.893 *** (25.69)	0.144 *** (2.95)	-0.007 (-0.16)	0.003 (0.11)	92.99%
Difference portfolio	-3.685 (-1.43)	-0.051 (-0.96)	-0.166 ** (-2.23)	0.120 * (1.78)	-0.084 ** (-2.23)	14.74%
Panel B. 30% value weighted portfolio - Period 2000 - 2003						
Good governance	1.809 (0.67)	0.854 *** (11.68)	-0.047 (-0.65)	0.086 (1.43)	-0.079 ** (-2.36)	87.87%
Bad governance	7.767 *** (3.47)	0.820 *** (13.59)	0.116 * (1.93)	-0.009 (-0.18)	-0.016 (-0.58)	90.91%
Difference portfolio	-5.958 * (-1.67)	0.034 (0.36)	-0.163 * (-1.70)	0.095 (1.20)	-0.063 (-1.43)	8.23%
Panel C. 30% value weighted portfolio - Period 2003-2006						
Good governance	-3.563 (-1.14)	0.850 *** (16.46)	0.006 (0.05)	0.214 (1.42)	-0.081 (-0.76)	90.31%
Bad governance	-2.979 (-1.18)	0.943 *** (22.73)	0.213 ** (2.23)	0.122 (1.01)	-0.012 (-0.14)	95.33%
Difference portfolio	-0.584 (-0.14)	-0.093 (-1.32)	-0.207 (-1.28)	0.092 (0.45)	-0.069 (-0.47)	15.44%

Notes: Table VII presents the results of the OLS regression as in model (1). Sample alphas are annualized percentages. The difference portfolio is constructed by subtracting returns of the low-ranked portfolio from the returns of the high-ranked portfolio, where alpha is the outperformance of one of the portfolios. White's (1980) heteroskedasticity-robust *t*-statistics are in parentheses.

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Table VIII. Corporate Governance and REIT Dividend Payout

	<i>Dividend payout/EPS</i>				
Intercept	-0.259 (-1.43)	-0.313 (-1.36)	-0.493 (-2.84) ^{***}	0.125 (0.44)	-0.340 (-1.89) [*]
Gov Index	0.332 (1.99) [*]				
Audit Index		3.783 (1.06)			
Compensation Index			9.407 (3.22) ^{***}		
Takeover Index				-5.817 (-1.52)	
Board Index					6.062 (1.90) [*]
Size	0.3428 (6.04) ^{***}	0.3737 (5.99) ^{***}	0.3567 (6.85) ^{***}	0.3587 (6.43) ^{***}	0.3602 (6.74) ^{***}
ROA	0.014 (2.40) ^{**}	0.016 (2.32) ^{**}	0.017 (3.10) ^{***}	0.016 (2.49) ^{**}	0.015 (2.66) ^{**}
Leverage	0.000 (-1.08)	0.000 (-0.80)	0.000 (-0.55)	0.000 (-0.86)	0.000 (-0.91)
FFO growth	0.086 (1.82) [*]	0.075 (1.35)	0.063 (1.43)	0.059 (1.18)	0.079 (1.71)
Year Fixed Effects	Y	Y	Y	Y	Y
Mortgage Dummy	Y	Y	Y	Y	Y
Median Adjusted	Y	Y	Y	Y	Y
n	487	486	486	486	486
Pseudo-R ²	6.91%	6.66%	7.63%	6.80%	6.99%

Notes: Table VIII shows the relation between the CGQ Index and dividend payout for the REIT sample. Dividend payout is measured by dividends per share over earnings per share. The estimation includes logAssets (Size), return on assets (ROA), the debt to equity ratio (Leverage), and FFO growth as control variables. Furthermore, a mortgage dummy is included for mortgage REITs.

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