

# CORPORATE GOVERNANCE AND THE LEVERAGE OF REITS: THE IMPACT OF THE ADVISOR STRUCTURE

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## Abstract

The paper examines the impact of the advisor structure on the leverage of 265 US real estate investment trusts (REITs). The study employs panel data for the period 1994 to 2010.

Externally advised REITs tend to choose lower leverage, a result which differs from that of Capozza and Seguin (2000) for the old REIT era (1985-1992). We find no evidence for an agency problem related to the choice of leverage for more recent data. The lower leverage makes economic sense since externally advised REITs bear higher costs of debt than their internally advised counterparts.

*Keywords:* Capital structure, REITs, advisor structure, corporate governance.

*JEL classification:* G32, G34.

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## **Abstract**

The paper examines the impact of the advisor structure on the leverage of 265 US real estate investment trusts (REITs). The study employs panel data for the period 1994 to 2010.

Externally advised REITs tend to choose lower leverage, a result which differs from that of Capozza and Seguin (2000) for the old REIT era (1985-1992). We find no evidence for an agency problem related to the choice of leverage for more recent data. The lower leverage makes economic sense since externally advised REITs bear higher costs of debt than their internally advised counterparts.

# 1 Introduction

The purpose of this paper is to investigate an important corporate governance issue: how does the advisor structure affect the leverage of real estate investment trusts (REITs). Advisors are expected to pursue personal goals, such as the maximization of their compensation and personal assets. If these personal goals of the advisors are not aligned with shareholder wealth maximization, agency conflicts may arise. Such agency conflicts can be identified by observing how the capital structure varies in conjunction with the advisor structure.

The potential for agency conflicts in the external advisor structure of REITs has been highlighted by Finnerty and Park (1991) and Capozza and Seguin (2000, hereafter C&S). C&S go one step further and suggest that there is empirical evidence for this agency conflict. They find that externally advised REITs choose higher leverage than internally advised REITs. C&S interpret this as a serious conflict between the interests of shareholders and external REIT advisors. They suggest that the excessive leverage may be attributable to a misaligned compensation scheme of external advisors that neglects interest expenses.

C&S's study period from 1985 to 1992 is characterized by a wave of externally advised REITs converting to the internally advised and internally managed form. A change in the regulation in 1986 first allowed REITs to operate and manage properties themselves. Ott et al. (2005) describe the early REIT years from 1981 to 1992 as the old REIT era, populated with "sleepy, slow-growth" companies; they characterize the "dynamic, high-growth" period from 1993 onward as the new REIT era. In the old REIT era, which includes the era of the changing governance structure analyzed by C&S, externally advised REITs attracted considerable attention for their agency issues and underperformance. To escape this

controversy, many externally advised REITs converted to an internally advised and internally managed structure starting in 1986. REITs also changed with respect to operating characteristics in the new REIT era: one finds greater transparency, stabilized financing, higher institutional ownership, more complex capital structures and greater internal growth. Along similar lines, Ambrose and Linneman (2001) identify a convergence of operating characteristics of externally and internally advised REITs in the new REIT era. The REIT modernization act of 1999 brought about further structural changes affecting the way REITs are operated and financed.<sup>1</sup> As a consequence, agency conflicts in externally advised REITs should be less evident in more recent data.

We focus our study on the impact of the advisor structure on leverage for the new REIT era, that is, for the period that follows the conversion of the majority of externally advised REITs to internally advised REITs. Our study uses data from 1994 to 2010 to test whether the charges brought upon externally advised REITs regarding agency issues during the old REIT era still exist today in the new REIT era. Our expectation is that the more sophisticated REIT environment of the new REIT era monitors the behavior of external advisors more effectively and, therefore, drives external advisors to make competitive and prudent investment decisions with less opportunistic motivation.

We find that externally advised REITs choose lower leverage levels than their internally advised counterparts for the new REIT era. This makes economic sense considering the fact that externally-advised REITs bear higher cost of debt. Hence, there is no reason to suspect an agency problem for externally advised REITs in the new REIT era.

The remainder of the paper is organized as follows. Section 2 gives an overview of the relevant theories of capital structure as they relate to corporate governance and associated empirical findings. Section 3 describes the dataset and discusses the empirical

methodology. Section 4 presents the estimation results. Section 5 concludes with a summary of the study's most important results.

## **2 Theoretical Background**

### **2.1. Corporate Governance and Leverage**

Frank and Goyal (2009) provide a review of past studies and a critical assessment of the historical development of capital structure theories: the trade-off theory, the pecking-order theory, and the market timing theory. Harrison et al. (2011) discuss applications to REITs.<sup>2</sup>

Corporate governance is associated with capital structure variation. Research on corporate governance began with Jensen and Meckling (1976). The key issue of corporate governance is to identify ways to reduce the potential for opportunistic behavior on the part of managers.

There are four basic types of agency conflicts that are relevant to the advisor structure: the desire of managers to remain in power, to maximize compensation and personal assets, to concentrate his/her control over the company, and to avoid managerial risk. First, managers may act opportunistically to retain their jobs even though a replacement of the management team may maximize shareholder value in certain circumstances. Second, the manager may be driven by the desire to maximize compensation while making corporate decisions. Third, the director may have an incentive to adjust the capital structure to increase his/her control over the company. Last but not least, while typical shareholders hold diversified portfolios, managers are likely to bear cluster risks because (i) a large part of their personal portfolios is invested in their company and (ii) their human capital is tied to their company (Fama, 1980). This higher risk exposure can let managers avoid projects that may be attractive to shareholders from a net present value perspective but are a threat

from a manager's point of view. Managerial risk aversion may also cause opportunistic behavior on capital structure decisions, as the risks associated with debt may impact compensation and control.

These agency issues become a problem when information asymmetries are pronounced. In the REIT market information asymmetries should be quite large. REITs are typically small firms with lower trading volumes relative to common stock companies (Glascok et al., 1998). Liquidity is lower in the REIT market (Below et al., 1995), institutional ownership is lower and fewer analysts cover REITs (Wang et al., 1995; Su Han et al., 1998). The appraisal of properties and its public announcement leads to a temporary information gap in which insiders know the appraisal value while outsiders do not (Damodaran et al., 1993). These particularities are associated with reduced information disclosure, and private information in this case might create adverse-selection problems.<sup>3</sup>

REITs are either internally or externally advised. A REIT is externally advised if asset management services (investment/disposition decisions) are provided by a separate company that is not a subsidiary.<sup>4</sup> The majority of today's REITs is internally advised and internally managed (Table 1). Most REITs that choose to be externally advised also hire external property managers.

<<< insert Table 1 about here >>>

The passage of the Tax Reform Act of 1986 that, for the first time, allowed REITs to operate and self-manage properties paved the way for REITs to become fully integrated (internally advised and internally managed). Prior to 1986, REITs were exclusively externally managed by law.

Externally advised REITs provide certain benefits: external advisors can manage multiple REITs at economical costs and usually have high skills and a pool of qualified employees that they can access. In particular, smaller REITs could be managed cost-efficiently by external advisors because they benefit from scale economies compared to a dedicated internal management team.

The benefits of external advising are clouded by compelling evidence about agency conflicts inherent in externally advised REITs. Decision makers of internally advised REITs face performance incentives that are determined by net income at the corporate level. Thus, they pay attention to interest expenses in their decision making. Advisors of externally advised REITs are usually compensated according to assets under management and property-level cash flows. This may provide an incentive to increase the asset base under management (Jenkins, 1980; Sagalyn, 1996). External advisors may, therefore, be tempted to raise leverage more than is consistent with shareholder wealth maximization because interest expenses are not impacting their compensation. For the same reason external advisors may have little incentive to negotiate for favorable interest rates. Additional external advisor fees apply for property acquisitions, increasing the incentive for excessive expansion even further.

The potential for such opportunistic behavior may become a threat if corporate control mechanisms are weak. The old REIT era, prior to 1993, is characterized by weak corporate control mechanisms, such as little analyst coverage and low institutional ownership. Studying the time period from 1985 to 1992, which covers the years when many REITs switched from an external to an internal advising mode, C&S find empirical evidence for opportunistic behavior: their study shows that externally advised REITs have higher leverage levels than their internally advised counterparts.

## 2.2. Control Variables and Dependent Variable

Managers of growing companies tend to prefer maximum control over their decisions. Debt can negatively affect their freedom to make decisions in case of financial distress. That is more likely a problem for growing companies as they have more volatile earnings. However, the causation may also operate in the opposite direction. Debt avoids growing firms because creditors try to avoid the problems associated with higher information asymmetry, agency cost, and risk of bankruptcy. The market to book ratio is the most commonly used and the most reliable proxy for *growth opportunities* (Frank and Goyal, 2009). We note that the market to book ratio is also a proxy for the market valuation of the firm. This means that market timing behavior is measured in tandem with the effects of growth opportunities.

The pecking order theory suggests a negative relationship between firm *size* and leverage. Information asymmetries decline as the company gets larger because more information is disclosed to shareholders. Hence, large firms enjoy lower costs for issuing equity and, therefore, choose less debt. The trade-off theory predicts larger REITs to have more debt since they tend to be more diversified and bear lower bankruptcy risk. Firm size is approximated by the natural logarithm of total assets, deflated by the US consumer price index (CPI). The logarithmic transformation allows for a possible nonlinear impact of firm size.

The prediction of the trade-off theory is a positive relationship between the degree of *asset tangibility* and leverage. A company has a better chance to recover from financial difficulty and meet debt service when its assets are highly tangible.<sup>5</sup> Our model uses real estate investments as a percentage of total assets as a proxy.<sup>6</sup>

Profitable companies generate more internal funds to finance new projects (pecking order theory). As a consequence, there is less need to resort to external financing.<sup>7</sup> A profitable firm, therefore, is expected to decrease leverage because future investments are financed internally and debt is paid back.<sup>8</sup> *Profitability* is approximated by return on assets.

Companies with volatile earnings are at greater risk of bankruptcy because earnings are more likely to drop below debt service commitments. The pecking order theory proposes that firms with volatile earnings suffer from adverse selection limiting the access to capital markets. Hence, debt may be the preferred choice. This effect is captured by the control variable *earnings volatility*.<sup>9</sup>

The *dividend payout* ratio should be negatively related to leverage (Frank and Goyal, 2009). For REITs, there is less variation in the dividend payout levels because the lower boundary for earnings payout is fixed at 90% (95% prior to 2001). We use the ratio of dividends to funds from operations as the proxy for dividend payout.

Firms do not rebalance stock market induced changes in their capital structure (Welch, 2004). Hence, stock price changes move leverage away from desired targets. Stock market conditions not only passively impact the capital structure but also drive managers to exploit market timing (Baker and Wurgler, 2002). Managers actively time markets to benefit from mispricing. We control for these effects by including the change in stock price (*stock performance*) in our models.

Ooi et al. (2010) test the influence that market-conditions have on financing decisions of REITs. The authors find that REITs time their financing behavior according to capital market conditions. We use time fixed effects to account for time-varying unobserved effects that impact all REITs.

Leverage can be measured in various ways. Even though most predictions apply directly to book values, there is still dissent on the appropriate proxy for leverage. We use both *book leverage* and *market leverage* as dependent variables. *Book leverage* reflects events from the past, whereas *market leverage* is forward-looking and is suited to capture effects from market factors (Frank and Goyal, 2009). Accounting for the criticism of Welch (2007), we calculate *book leverage* by dividing financial debt by the sum of the book value of equity and financial debt. *Market leverage* is defined as financial debt divided by the sum of the market value of equity and financial debt.<sup>10</sup>

### **3 Data and Methodology**

The data cover 265 publicly listed US Equity REITs (Table 2). We avoid a survivorship bias<sup>11</sup> by including defunct REITs that do not exist as separate entities up to the end of the sample (merger or acquisition) or that join the sample after 1994 (later IPO). Financial data are derived from the SNL Financial database and stock price data from the Center for Research in Security Prices (CRSP). Our models use quarterly observations from 1994Q1 to 2010Q4.<sup>12</sup>

<<< insert Table 2 about here >>>

Our identification strategy to measure the impact of advisor structure on leverage makes use of a property type fixed effects estimator.<sup>13</sup> Controlling for property type fixed effects is crucial in our study because externally advised REITs tend to invest in different property types than their internally advised counterparts. In particular, out of 29 externally advised REITs 8 are focused on self-storage real estate and 7 are diversified. None of the externally

advised REITs is focused on Specialty real estate (Table 2). Property type fixed effects will account for any unobserved heterogeneity among the different property types.

<<< insert Table 3 about here >>>

In our regressions we account for a number of firm-specific differences that may affect leverage outside of the type of advisor structure. In particular, we control for *growth opportunities, profitability, size, asset tangibility, earnings volatility, dividend payout* and *stock performance*. The definitions and basic statistics are given in Table 3. All independent variables are lagged by one period to avoid endogeneity issues. The reported standard errors are heteroscedasticity and autocorrelation consistent as suggested for datasets with a large number of cross-section units and a small number of time periods (Cameron and Trivedi, 2005).

Apart from firm specific influences, leverage values may also be reacting to macroeconomic changes over time, such as variations in interest rates, the ups and downs of the business cycle, or economic crises as the one that followed the subprime lending problem. We account for the impact of these changes in the economic environment by including time fixed effects in all our models.

Lastly, we include an interaction term between a time trend variable and the focus variable *externally advised*. The variable *trend* is zero until 1996Q2, counts from 1 to 2 for the quarters from 1996Q3 to 1996Q4 and is constant at 2 thereafter.<sup>14</sup> It is meant to reflect the fact that the leverage levels of both advisor structures converge especially in 1996Q3 and 1996Q4, and stay at a similar rate thereafter.

## 4 Estimation Results

External advisor arrangements are negatively related to leverage for the time period from 1994 to 2010 (Table 4).<sup>15</sup> The negative relationship between leverage and the variable *externally advised* identified in Table 4 makes perfect economic sense considering the fact that externally advised REITs bear in general a higher cost of debt than internally advised REITs (Figure 1). These higher interest costs translate into a lower optimal leverage. Hence, a compensation style based on asset size does not lead to opportunistic behavior on the part of managers, and does not result in a possible disadvantage to shareholders in the new REIT era.

<<< insert Table 4 about here >>>

We also identify a converging trend of leverage between externally and internally advised entities. The coefficient of the interaction variable *trend\*externally advised* shows that in 1996Q3 and 1996Q4 the leverage ratios of externally and internally advised REITs converge. This indicates that during this period external advisors engaged in significant efforts to adjust their leverage closer to the levels of internally advised REITs.

<<< insert Figure 1 about here >>>

The above results deviate from those of C&S, who investigate data from 1985 to 1992. External REIT advisors took advantage of their ability to increase compensation through debt increases in the old REIT era. This behavior is not found in the newer data.<sup>16</sup> The

environment of REITs has changed in the sense that greater transparency and analyst coverage, higher institutional ownership, and greater liquidity have reduced agency issues and information asymmetries (Ott et al., 2005). The change in behavior is likely fostered by the discussion of moral hazard issues of externally advised REITs that pressured externally advised REITs to fundamentally change their behavior or convert to the internal advisor structure. Some of the pressure may also have originated from the fact that externally advised REITs experienced underperformance during the old REIT era (Howe and Shilling, 1990; Cannon and Vogt, 1995).<sup>17</sup>

<<<insert Figure 2 here>>>

For the early years of our study period we find that the average leverage of externally advised REITs has its lowest point. From that time onward, the leverage of externally advised REITs starts to converge upward to the much higher level of internally advised REITs (Figure 2). The market to book values also converge during that period, indicating that investors perceived the change of externally advised REITs positively (Figure 3).

<<<insert Figure 3 here>>>

The coefficients of our control variables turn out as expected and are consistent with recent findings from Harrison et al. (2011) and Ghosh et al. (2011). *Profitability, dividend payout, size and stock performance* are inversely related to leverage. *Earnings volatility* and *asset tangibility* are positively related to leverage. *Growth opportunities* are positively

related to book leverage and negatively related to market leverage. Time fixed effects and property type fixed effects are jointly significant. The interpretation of these relationships is discussed next.

The prediction of the market timing theory is supported by our findings for *growth opportunities* and *stock performance*. In particular, managers actively time the market to take advantage of mispricings (Baker and Wurgler, 2002). This finding is also consistent with the argument of Welch (2004) that firms do not rebalance stock price induced leverage variation.

The pecking order theory is supported by the coefficient signs of *profitability*, *size*, *growth opportunities* and *earnings volatility*. This means that (i) profitable REITs become less levered over time as profits may be used to redeem debt, (ii) large REITs have less information asymmetries between insiders and investors, making access to equity markets easier, (iii) growing REITs with more investments accumulate more debt and, (iv) volatile REITs suffer from adverse selection and, therefore, access equity markets less.

The only evidence for the impact of the trade-off theory comes from the coefficient sign of the variable *asset tangibility*. Highly tangible assets are easier to value for outsiders. The tangibility of real estate assets generally leads to higher collateral values, which can usually be sold in the market at a small discount. Accordingly, lenders have more trust in a company's ability to recover from financial difficulty if many marketable real estate assets are in the company's portfolio. Contrary to the predictions of the trade-off and the pecking order theory, higher *dividend payout* is associated with lower leverage.<sup>18</sup>

In summary, the market timing theory, the pecking order theory, and property type effects are important drivers of REIT leverage. The evidence for the trade-off theory is less clear. Its assumption of tax deductibility does not hold for REITs because their distributed

income is tax-exempt.<sup>19</sup> This, in combination with a lower cost of financial distress of REITs, explains the limited applicability of the trade-off theory.

## **5 Concluding Remarks**

The purpose of this paper has been to examine whether externally advised REITs have higher leverage levels than internally advised REITs, as previously reported in the literature for the old REIT era (1985-1992). We find new results for the impact of external advisors on leverage for the new REIT era.

In particular, the compensation style of externally advised REITs does not appear to lead to opportunistic behavior on the part of managers anymore; externally advised REITs do not have a perceptively higher leverage level than internally advised REITs over the period 1994 to 2010 as opposed to the period 1985 to 1992. We find that externally advised REITs choose lower leverage levels compared to their internally advised counterparts. This appears to be consistent with optimal choice behavior insofar as externally advised REITs bear higher cost of debt.

For the old REIT era, externally advised REITs are charged with agency conflicts and associated underperformance. The potential for opportunistic behavior arose from misaligned compensation schemes. As a consequence, a wave of externally advised REITs converted to being internally advised. The majority of the conversions took place in the years following the Tax Reform Act of 1986 that allowed REITs to operate and self-manage properties. REITs that remain externally advised in the new REIT era do not take advantage of excessive leverage anymore according to our findings. The fact that some REITs decide to continue to operate with the external advisor structure is evidence that agency issues have been resolved to a large extent and some investors appreciate the

benefits that externally advised REITs can have, such as scale effects, due to advisors managing multiple REITs, and access to a large pool of qualified employees.

## Endnotes

<sup>1</sup> The REIT Modernization Act of 1999 became effective in 2001. It has reduced the payout ratio from 95% to 90% and has introduced the Taxable REIT Subsidiary. Both regulatory changes have had a significant impact on REITs, giving managers twice the amount of cash flow to work with and allowing them to expand their activities by providing services to tenants and others.

<sup>2</sup> Capital structure theories have been designed and tested primarily on non-property companies. Most studies exclude financial, insurance and real estate firms (SIC codes 6000-6900) as well as regulated industries (SIC codes 4900-4999) from the sample, e.g. Lemmon et al. (2008).

<sup>3</sup> REITs also offer some transparency advantages. The cash flow of REITs is usually steady, income statements are mostly transparent, and items like R&D expenditures tend to be low. Also, benchmark prices on the parallel real estate market are available for comparison and uncertainty has been reduced in general (Below et al., 1996). These transparency advantages ease the access to equity markets for REITs.

<sup>4</sup> REITs also choose to be internally or externally managed; they either manage day-to-day operations of properties themselves or engage external property managers. Property managers are not directly involved in financing activities and should not impact capital structure decisions. Our definitions of “advised” and “managed” follow those of Ambrose and Linneman (2001) and SNL Financial.

<sup>5</sup> The pecking order theory predicts a negative impact of asset tangibility on leverage. It rests on the idea that companies with lower asset tangibility have higher information asymmetries. A larger mispricing of equity is the result and debt is preferred.

<sup>6</sup> A REIT must invest at least 75 % of its assets in real estate, cash and cash items (including receivables) and government securities (US Internal Revenue Code § 856(c)(4)(A): “75 Percent Asset Test”).

<sup>7</sup> This point should be less relevant for REITs because the distribution requirement of 90 percent on earnings limits their ability to build up reserves.

<sup>8</sup> The trade-off theory suggests the inverse relationship, based on the assumption that the benefit from the tax-shield of debt increases with higher profitability. This view predicts that higher profitability of taxable companies coincides with higher leverage. The trade-off theory is far less valid for REITs due to their special tax status.

<sup>9</sup> The standard deviation of excess returns in lieu of earnings volatility is used as a robustness check. Our results do not materially change.

<sup>10</sup> We also estimate our models with the debt ratios that include non-financial liabilities, that is for *book leverage* [ $1 - \text{book value of equity} / \text{book value of assets}$ ] and for *market leverage* [ $1 - \text{market value of equity} / (\text{market value of equity} + \text{book value of liabilities})$ ]. This alternative specification does not materially change our results.

<sup>11</sup> Survivors tend to be larger and more profitable. They have fewer growth opportunities, higher levels of asset tangibility and higher levels of leverage (Lemmon et al., 2008).

<sup>12</sup> SNL Financial provides only scarce data on externally advised REITs for the periods prior to 1994Q1. The database extended REIT coverage starting 1994Q1 for all our model components.

<sup>13</sup> The pooled model is tested against the random effects model via the Breusch-Pagan test. The test confirms, at better than the one percent level, that the simple pooled regression is rejected relative to the random effects model. The random effects model, in turn, is tested against the fixed effects model via the Hausman test. The random effects model is rejected in favor of the fixed effects model. We note that a standard firm fixed

effects model could not identify the impact of the advisor structure as it does not vary over time for a given firm.

<sup>14</sup> The time window is identified by an iterative procedure that tests all possible time windows in which we suspect a possible trend. The time window with the highest significance is that from 1996Q3 to 1996Q4.

<sup>15</sup> As a sensitivity check we compare externally advised REITs with fully integrated REITs that are both internally advised and internally managed. We also test the sensitivity of our models to a different specification of our time window that excludes the volatile quarters during the financial crisis. Our results do not materially change for these specifications.

<sup>16</sup> Due to limited data availability, we are unable to run structural break tests prior to 1994Q1.

<sup>17</sup> Externally advised REITs are also perceived to take less advantage of economies of scale (Bers and Springer, 1997).

<sup>18</sup> This finding is consistent with those of Frank and Goyal (2009) and Harrison et al. (2011). The negative relationship between dividend payout and leverage is still a puzzle in the literature and the theoretical interpretation of this issue requires further development.

<sup>19</sup> Only the income that is distributed to investors is tax-exempt. US-REITs have to distribute at least 90 percent of their income. The income not distributed is subject to corporate income tax.

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*Acknowledgements:* We thank our colleague John Glascock as well as the participants of the 16th ERES Conference in Stockholm and the 26th ARES Conference in Naples for their comments on earlier versions of this paper. We also gratefully acknowledge the many helpful comments of the referees, without implicating them for any remaining errors.

## Tables

**Table 1: Number of REITs by Management and Advisor Structure**

	Externally Advised	Internally Advised
Externally Managed	26	42
Internally Managed	3	194

*Notes:* The data cover 265 publicly traded US-REITs from 1994Q1 to 2010Q4.

**Table 2: Property Focus of Externally and Internally Advised REITs**

Property Focus	Internally Advised			Externally Advised		
	No.	Mean Market Leverage	Mean Book Leverage	No.	Mean Market Leverage	Mean Book Leverage
Diversified	16	40%	50%	7	47%	50%
Health Care	13	40%	49%	3	23%	29%
Hotel	21	50%	51%	1	29%	31%
Industrial	19	48%	54%	1	56%	55%
Office	37	47%	54%	4	31%	30%
Residential	46	49%	60%	1	74%	60%
Retail	63	49%	61%	4	51%	71%
Self-Storage	9	23%	29%	8	1%	2%
Specialty	12	46%	55%	0		
Total	236	46%	56%	29	27%	33%

*Notes:* The data cover 265 publicly traded US-REITs from 1994Q1 to 2010Q4.

**Table 3: Variable Definitions and Basic Statistics**

Variable	Description	Obs.	Mean	St. Dev.	Min	Max
Market leverage	Financial debt / (market value of equity + financial debt)	7840	0.452	0.186	0.000	0.932
Book leverage	Financial debt / (book value of equity + financial debt)	7840	0.540	0.203	0.000	1.000
Growth opportunities	Market value of equity / book value of equity	7840	1.503	1.085	0.000	8.211
Size	Natural logarithm of total assets deflated by the US CPI.	7840	13.737	1.362	8.565	17.205
Asset tangibility	Property investment / total assets	7840	0.840	0.126	0.000	0.982
Profitability	Net income / total assets	7840	0.009	0.009	-0.051	0.052
Earnings volatility	Percentage change in net income	7840	0.006	0.297	-1.970	22.797
Dividend payout	Dividends / funds from operations	7840	0.728	0.283	0.000	1.990
Stock performance	Change in raw stock price	7840	0.018	0.161	-0.915	3.531

*Notes:* The ratios *book leverage*, *market leverage*, *growth opportunities*, *asset tangibility* and *profitability* are winsorized at the 1<sup>st</sup> and the 99<sup>th</sup> percentile. The data cover 265 publicly traded US-REITs from 1994Q1 to 2010Q4.

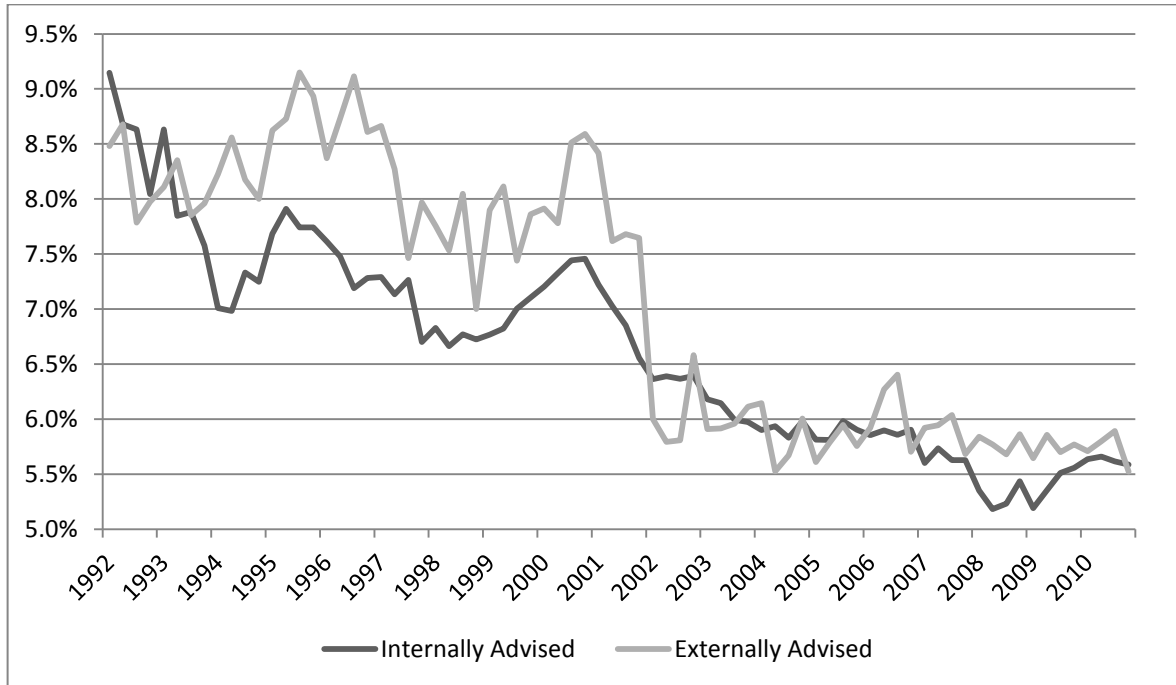
**Table 4: Impact of Advisor Structure on Leverage**

Variable	Market Leverage			Book Leverage		
	Base	With controls	With trend	Base	With controls	With trend
Externally advised	-0.125*** (0.000)	-0.106*** (0.000)	-0.171*** (0.000)	-0.133*** (0.001)	-0.127*** (0.000)	-0.183*** (0.000)
Trend*externally advised			0.041* (0.073)			0.035 (0.160)
Growth opportunities		-0.017*** (0.009)	-0.018*** (0.008)		0.048*** (0.000)	0.047*** (0.000)
Size		-0.014** (0.017)	-0.014** (0.014)		-0.004 (0.554)	-0.004 (0.519)
Asset tangibility		0.120 (0.102)	0.123* (0.093)		0.155* (0.081)	0.158* (0.076)
Profitability		-8.541*** (0.000)	-8.527*** (0.000)		-7.815*** (0.000)	-7.803*** (0.000)
Earnings volatility		0.022*** (0.000)	0.022*** (0.000)		0.019*** (0.000)	0.019*** (0.000)
Dividend payout		-0.049** (0.016)	-0.049** (0.015)		-0.021 (0.334)	-0.021 (0.328)
Stock performance		-0.080*** (0.000)	-0.079*** (0.000)		-0.034*** (0.005)	-0.034*** (0.005)
Constant	0.268*** (0.000)	0.518*** (0.000)	0.522*** (0.000)	0.424*** (0.005)	0.349** (0.035)	0.354** (0.033)
Observations	7840	7840	7840	7840	7840	7840
Akaike's Information Criterion	-7343.0	-9888.5	-9913.4	-6644.0	-8700.6	-8715.6
Adj. R <sup>2</sup>	0.327	0.514	0.516	0.379	0.523	0.524

*Notes:* The table presents panel regression coefficients and the associated p-values in parentheses using property type fixed effects and time fixed-effects. 265 REITs are included for quarterly periods from 1994Q1 to 2010Q4. *Trend* is zero until 1996Q2, counts from 1 to 2 for the periods 1996Q3 to 1996Q4 and is constant 2 thereafter. All independent variables are lagged by one period. Standard errors are heteroscedasticity and autocorrelation consistent. \* indicates significance at the 10% level, \*\* indicates significance at the 5% level, \*\*\* indicates significance at the 1% level.

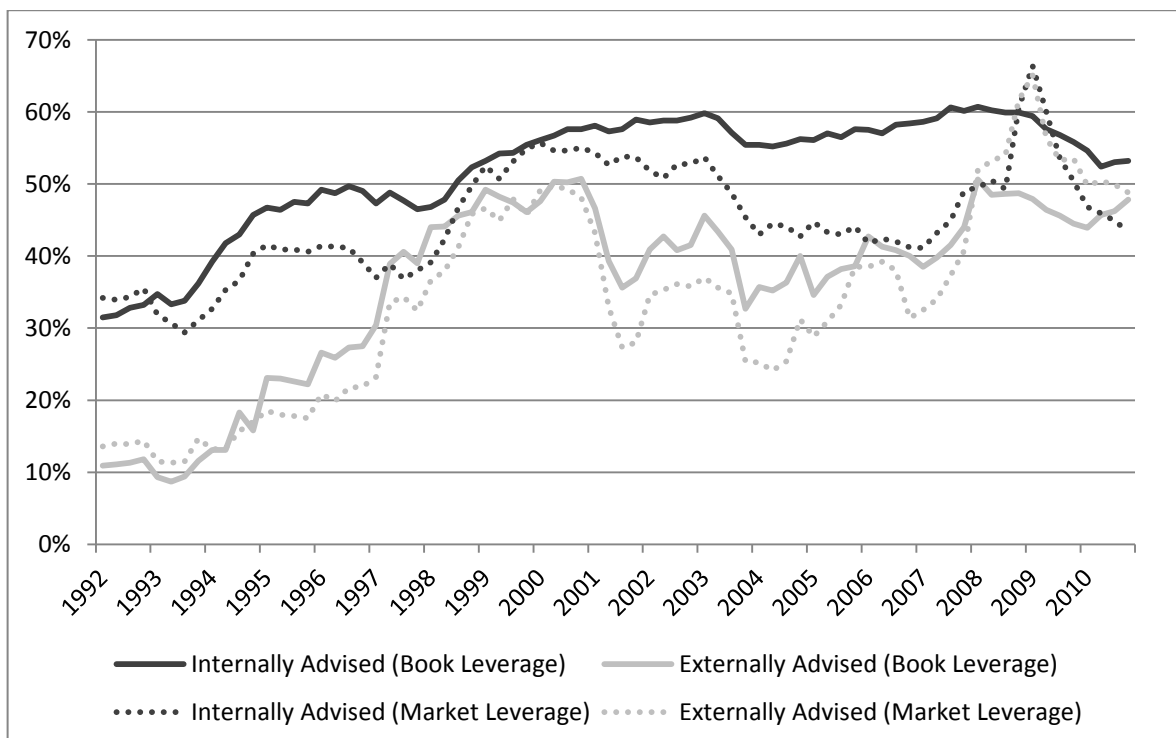
## Figures

**Figure 1: Cost of Debt of Internally Advised vs. Externally Advised REITs**



*Notes:* Cost of debt is defined as annualized quarterly interest expenses divided by financial debt.

**Figure 2: Development of Leverage of US-REITs**



**Figure 3: Market to Book Ratios of US-REITs**

