

An Analysis of REIT Security Issuance Decisions*

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Current Version: 29 November 2007

Abstract

This paper tests the ability of traditional capital structure theories to explain the issuance decisions of real estate investment trusts (REITs). For issuances made between 1997 and 2006, we find strong support for the market timing theory of capital structure. Controlling for past returns and growth, a REIT is more likely to issue equity when its price to NAV ratio is high. This suggests that REITs issue equity in public markets when the cost of equity capital is lower in the public market than the private market. Consistent with traditional market timing, REITs are more likely to issue equity after experiencing large price increases. We also find support for REITs following the tradeoff theory of capital structure. REITs are less likely to issue any kind of debt, when proxies for expected bankruptcy costs are high. In contrast to Feng, Ghosh, and Sirmans (2007) we find little support for static pecking order theories of capital structure. Finally, we find evidence that suggests REITs view preferred equity as a substitute for debt.

*We are grateful to Stephen Brown for helpful comments. Jared Chung and Eric Su provided excellent research assistance. Boudry gratefully acknowledges financial support from The Charles C. McKinney Faculty Development Fund. All errors are our own.

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1 Introduction

Numerous theories explaining a firm's capital structure choices have been posited since the seminal work of Modiglian and Miller (1958). Testing these theories has received extensive attention in the finance literature, with mixed results.

The current literature has essentially evolved from three competing hypotheses of capital structure: 1) Tradeoff theory; 2) Pecking Order theory; and 3) Market Timing. Tradeoff theory predicts that a firm's capital structure choice will be the outcome of the interaction between the tax benefits of debt and the bankruptcy costs associated with that debt. That is, an optimal capital structure exists where the marginal costs and benefits of additional debt are equal. Whenever the firm's capital structure is away from this level it should converge towards it.

Pecking order theory in its simplest form predicts that due to information asymmetry between managers and the capital market, markets will penalize firms for issuing securities that are most sensitive to this information. As such, firms will choose to issue securities in order of their informational sensitivity. That is, internal capital first, then debt and finally equity.¹ More dynamic versions of the theory suggest that firms may choose to stockpile debt capacity, especially when growth prospects are high.

Finally, market timing posits that managers try and time the market based on their belief of the true firm value.² That is, they will issue equity when they believe that the market overvalues their company. In this sense, a firm's capital structure is purely an outcome of its manager's past attempts to time the market.

REITs provide an interesting setting in which to examine capital structure, because they have many structural features that rule out certain motivations for capital structure choices. As such, it is not obvious how empirical results pertaining to regular corporations can be

¹See Myers (1984) and Myers and Majluf (1984) for a discussion of pecking order theory.

²See Baker and Wurgler (2002) for a discussion.

extended to REITs. First, and most obviously, REITs are effectively tax exempt.³ This excludes taxed based motivations for issuing securities.⁴ Second, since REITs are required to pay out at least 90% of their taxable income in dividends, they are always issuing securities to fill the ‘financing gap’ that arises from a lack of internal sources of capital. It also means that Jensen (1986)’s free cash flow motivation for debt is unlikely to be overly important.

Third, REITs are a fairly transparent investment vehicle. That is, it is not apparent where the asymmetric information required for pecking order theories to work is generated. For the most part REITs are in the cash yield business. They seek assets that provide a high yield from operations rather than assets that generate capital gains through capital appreciation. The stable nature of this cash flow stream limits the applicability of asymmetric information based theories.

Fourth, REITs are one of the few industries where the firm’s underlying assets trade in a secondary market. As such, analysts are effectively able to mark to market the firm’s assets to calculate a net asset value (NAV) independent of the equity market. This means that REITs face two costs of equity capital: one in the private market and one in the public market. Standard market timing would suggest the firm is more likely to issue equity after large price increases. The logic being that this is when the firm’s equity is most likely to be overvalued. Controlling for the price run up, a price to NAV ratio greater than one suggests that the public market values the underlying property portfolio’s cash flows more highly than the private market. A rational manager would be inclined to issue equity in the public market. Notice, however, that the manager is not trying to time the public equity market so

³REITs are required to pay out 90% of their taxable net income as dividends in order to maintain their REIT status. Furthermore, they are able to claim dividends paid as a deduction. The combination of these two facts means that a REIT, will in general, have no tax payable. REITs with taxable REIT subsidiaries (TRS) do pay taxes through the TRS, since the TRS is taxable. The REIT cannot, however, shield the TRS’s income at the REIT level. Only the TRS can shield its income using debt or interest deductions.

⁴Howe and Shilling (1988) argue that because REITs are not taxed at the corporate level, they would show a marked preference for not issuing debt due to competition in the debt market. Jaffe (1991) shows this not to be true, and that a general irrelevance still holds.

to speak. The firm's equity need not be overvalued, it is just cheaper to issue in the public equity market.

Finally, REITs are one of the few industries that issues preferred equity in any quantity.⁵ Preferred equity tends to be ignored as a source of financing in typical studies. From a theoretical perspective little guidance exists on the role it plays in the capital structure. In one of the few studies that address this issue, Heinkel and Zechner (1990) show that tax exempt firms may well be indifferent to issuing preferred equity.

Recently Feng, Ghosh, and Sirmans (2007) examine REIT capital structure decisions using the framework developed by Baker and Wurgler (2002). Their findings are quite different from Baker and Wurgler (2002), who find strong support for market timing. Feng, Ghosh, and Sirmans (2007) find very little support for market timing and report results that are consistent with pecking order theory. Like Feng, Ghosh, and Sirmans (2007), this paper addresses capital structure in REITs. The focus of our paper is quite different, however. Feng, Ghosh, and Sirmans (2007) are interested in explaining aggregate leverage or changes in aggregate leverage as a function of past market to book ratios. Our focus is on explaining marginal security choices. That is, we are interested in how firm's choose to change their capital structure, not simply that they changed it.

We examine the issuance decisions of 103 REITs between 1997 and 2006 to determine what role, if any, traditional capital structure theories play in REIT capital structure choice. During this period, our sample firms make 1,083 issuances of common equity, private debt, public debt and preferred equity. We find four main results. First, we find strong support for market timing. Consistent with conventional market timing, firms are more likely to issue equity after they have had high past equity returns. Controlling for past returns and growth opportunities, REITs also tend to issue equity when their price to NAV ratio is high.

⁵An examination of SDC Platinum's New Issues database reveals that REITs and Utilities are the two industries that dominate preferred equity issuances.

This suggests that REITs also try to time the public and private equity markets. They issue public equity when it is cheap to do so relative to the private market. This result differs from Feng, Ghosh, and Sirmans (2007), who find little evidence for conventional market timing in REITs.

Second, tradeoff theory appears to play a role in REIT security choice. The greater the difference between the weighted average interest rate the firm is paying on its debt and the rate on BBB debt, the more likely the firm is to issue all forms of equity and the less likely they are to issue all forms of debt. Interpreting this difference as the marginal cost of issuing more debt, our results are consistent with REITs issuing less debt or more equity when expected bankruptcy costs are higher. Our results for the fixed charge coverage ratio are also consistent with this notion. Firms with high fixed charge coverage ratios are more likely to issue debt. Since a high fixed charge coverage ratio proxies for lower default risk and hence expected bankruptcy costs, this relationship supports the tradeoff theory.

While our results generally support the tradeoff theory, they do not explain why REITs issue debt. Our results only suggest that REITs will issue less debt when expected bankruptcy costs are high. In a standard tradeoff framework, a balance is struck between the tax benefits of debt and the expected costs of bankruptcy. Since REITs are effectively tax exempt, the tradeoff is essentially one sided. REITs receive no tax benefits from debt, but incur expected bankruptcy costs by issuing debt. If expected bankruptcy costs are small, one potential explanation for REITs issuing debt is that they are able to obtain a cost of debt that cannot be replicated by investors. If this is the case, then investors would prefer that the REIT obtain leverage at the corporate level, rather than remain all equity financed and let the investor lever the returns at the personal level.

Third, we find that counter to the static pecking order theory, asymmetric information appears to play a minimal role in security choice. This result differs from that of Feng, Ghosh, and Sirmans (2007). While our failure to find support for pecking order theory may

be a result of poor proxies for asymmetric information, the measures adopted are the same as those used in other studies that find support for the pecking order.⁶ Furthermore, there is growing evidence to suggest that the pecking order does not hold in regular firms where asymmetric information levels are likely to be low.⁷

Fourth, REITs appear to issue preferred equity as a substitute for debt. Preferred equity issuances do not appear to be driven by the standard equity motivations. High price to NAV and past market returns do not increase the probability of issuing preferred equity. However, when the costs of issuing debt are high, REITs are more likely to issue preferred equity. The difference between the firm's weighted average interest rate and the BBB rate is a strong predictor of the firm's choice to issue preferred equity as is the default spread. Firms are however, less likely to issue preferred equity when their overall leverage is high. But the type of debt the firm has also matters. Firms with high secured debt to gross properties are more likely to issue preferred equity. The intuition being that they wish to issue an unsecured debt claim, but have no assets to act as collateral in default and as such are excluded from issuing public debt.

Overall, our findings suggest that the security issuances of REITs are heavily influenced by market timing behavior. REITs will issue securities when the relative cost of doing so is low and they will avoid issuing securities when these costs appear high. In terms of traditional capital structure theories, REITs could best be described as supporting the tradeoff theory with a market timing twist.

The remainder of the paper is as follows. Section 2 reviews the capital structure literature, Section 3 describes the empirical methodology and Section 4 outlines our sample and reports descriptive statistics. Estimation results are reported in Section 5 and Section 6 concludes.

⁶See, for example, Gomes and Phillips (2005).

⁷See, for example, Bharath, Pasquariello, and Wu (2006).

2 Literature Review

Broadly speaking, the finance literature has simplified the capital structure literature into a horse race between three competing theories: 1) Tradeoff theory; 2) Pecking order theory; and 3) Market timing. Each of these theories has received considerable empirical attention with mixed results.

Tradeoff theory posits that an optimal internal capital structure exists for a firm that weighs the tax benefits of debt against the bankruptcy costs of debt. For REITs the tradeoff is not obvious because of the effectively tax exempt status of REITs at the corporate level. Howe and Shilling (1988) argue that this lack of tax deductibility would force REITs to have a 100% equity capital structure. The logic being that if REITs have to compete for debt funds against regular firms that receive the tax benefit of debt, they will be at a competitive disadvantage and will find it too expensive to issue debt. Jaffe (1991) however shows this is not the case, and using a proof similar to the original Modiglian and Miller (1958) irrelevance proposition, shows that capital structure irrelevance does indeed hold, at least theoretically, for REITs.

Myers (1984) and Myers and Majluf (1984) argue that a pecking order of securities exists for a firm and that firms will issue securities in order of their information sensitivity. Critical to pecking order models is the presence of asymmetric information between managers and the market. Han (2004) argues that these information asymmetries are likely to be severe for REITs, since monitoring a REIT involves local knowledge of the real estate market. Downs and Gunner (1999) examine microstructure data for the last quarter of 1995 and provide evidence that asymmetric information plays a role in REIT pricing. Given the considerable change in market structure since then, especially in terms of institutional ownership, it is uncertain how this result pertains to our sample. Garmaise and Moskowitz (2004) also show that asymmetric information plays a critical role in commercial property transaction, their

sample however relates to small commercial properties. In fact, of the 10,351 transactions in their sample, only 42 were made by REITs.

More recently market timing has been highlighted as a potential explanation of security issuances. Graham and Harvey (2001) report that in a survey of CFOs, two thirds said the value of their stock was an important determinant of their choice to issue equity. Baker and Wurgler (2002) test the market timing hypothesis for a large cross-section of firms and find strong support for it. They show that there is a strong negative relationship between the external finance weighted market to book ratio and current leverage. In the REIT literature, Feng, Ghosh, and Sirmans (2007) replicate the Baker and Wurgler (2002) study using REIT data and find little support for market timing. Their results are in fact the exact opposite to Baker and Wurgler (2002). High past levels of the market to book ratio predict higher current leverage. They also find results similar to this when they use a smaller sub-sample of firms for which they can obtain NAV estimates from Green Street. Overall, they find greatest support for the pecking order in their REIT sample.⁸

3 Methodology

The approach we adopt to examine the competing capital structure theories is to examine the issuance decisions of firms. This differs from the standard methodology which typically examines leverage ratios through time.⁹ One notable example of this issuance by issuance approach is Gomes and Phillips (2005), who examine the security issuance decisions of a broad cross section of firms with a particular emphasis on why firms chose public or private securities.

To examine the factors affecting a firm's choice of security issuance we estimate a multi-

⁸For regular firms, Shyam-Sunder and Myers (1999), Lemmon and Zender (2004) and Gomes and Phillips (2005) find the pecking order is a reasonable approximation of firm capital structure choices, while Fama and French (2002) and Frank and Goyal (2003) find the opposite.

⁹See, for example, Lemmon and Zender (2004), Frank and Goyal (2003).

nomial logit model with four choice: 1) Common equity; 2) Preferred equity; 3) Public debt; and 4) Private debt. The multinomial logit does not rank the outcomes, but we have implicitly assumed that each outcome is not a close substitute for another.¹⁰

Theoretically it is possible to break down the outcomes (common equity, preferred equity, public debt and private debt) into even finer outcomes, such as convertible preferred equity. The reason we adopt our categorization is three fold. First, within outcomes the securities tend to be fairly homogenous. For example, the preferred equity group is virtually all redeemable but not convertible, while the public debt is predominantly senior unsecured debt. Second, from an economic perspective, keeping the partitioning at this coarser level hopefully results in the menu of securities being securities an average firm would consider issuing. Finally, the finer the menu of securities, the more likely it becomes that the securities are close substitutes for one another. By keeping the categorization at the current level, we have a security menu where each security has characteristics that are significantly different from the other securities.

The multinomial logit allows us to compare the competing capital structure hypotheses because it allows us to estimate marginal effects for each given outcome. That is, we can estimate the effect of say market timing, on the probability of issuing common equity or public debt. A comparison of effects across different classes can then be used to examine if a given capital structure theory appears to hold in the data.

Tradeoff theory suggests that there should be a negative relationship between the probability of issuing debt and any proxy for expected bankruptcy costs. On the other hand, this relationship should be positive for equity issuances. Such a combination would be supportive of tradeoff theory.

Pecking order theory suggests that higher asymmetric information should lead to a greater

¹⁰The multinomial logit model assumes the Irrelevance of Independent Alternatives holds. This assumption tends to be violated when alternatives are close substitutes for each other, commonly referred to as the ‘Red Bus / Blue Bus’ problem. See Greene (2000), for a discussion.

probability of issuing debt. It should also lead to a lower probability of issuing equity. Firms with higher payout ratios should also be less likely to issue debt. Once again marginal effects conforming to this combination would be evidence of the pecking order holding in the data.

Finally, market timing predicts that firms will issue equity when manager's believe their equity is overvalued. As such we would expect a positive relationship between any proxy for overvaluation and the probability of issuing common equity.

4 Data and Sample

4.1 Issuing Firms and Issue Characteristics

The firms considered in the estimation are 103 equity REITs issuing private and public debt and seasoned common and preferred equity between 1997 and 2006. While not the complete universe of equity REITs for the sample period, the sample firms do constitute the majority of the REIT industry.

For our 103 sample firms, we are able to obtain security issuance data from three sources: 1) SDC Platinum's New Issues database; 2) SNL Securities; and 3) Loan Pricing Corporations Deal Scan database. SDC Platinum's New Issues database provides information on private and public debt and common and preferred equity issuances. It does not, however, provide very good coverage of issues made at the umbrella partnership level for UPREITs. SNL securities provides data similar to SDC except its coverage of partnership securities is superior. Unfortunately it dates back only to 2000. We are able to fill this gap using data from NAREIT. Finally, the Deal Scan database provides a fairly comprehensive coverage of syndicated loans.¹¹ In combination, these three databases give a broad coverage of the major security issuances for our sample firms.

¹¹We exclude revolving credit lines from our analysis because an examination of filing prospectuses indicates that, in general, credit lines are used for short term financing with these loans being replaced with long term financing later on.

Since this study examines the choice between different security types, it is interesting to examine how many firms issued multiple types of securities during the sample. Panel A of Table 1 reports the number of firms issuing a given security during the sample period. Panel B reports the number of firms who issued multiple types of securities during the sample period. Of the 103 firms in the sample, 84 issued common equity, 66 issued preferred equity, 41 issued public debt and 64 issued private debt. In terms of the number of different types of securities issued by a given firm, 18 firms issued only one class of security, 37 issued two classes, 29 issued three classes and 19 firms issued four classes of securities.

Table 2 reports issuance characteristics by issue type and year. Two characteristics are noticeable in the data. First, there does appear to be significant variation through time in the number of issues coming to market. This is particularly apparent for common equity issuances. Especially noticeable is the marked decline in equity issuances in the late 1990s. This period corresponds to the last REIT bear market.

The second characteristic noticeable in the data is that the size of issuances varies across issue type. The average issue size is approximately \$125 million for common equity; preferred equity is smaller at \$83 million; public debt averages \$134 million; and private debt has the largest average issue size at \$294 million.¹² An examination of differences in means tests reveals that private debt is significantly larger than all other issue types and preferred equity being smaller than all other issue types. The null hypothesis of equal size could not be rejected for common equity and public debt.

¹²When issuing debt, in particular, some REITs tranche their issuance. That is, they issue multiple securities at approximately the same time all of the same type. In our data set, we have not combined these issuance into one larger single issuance. The only change this has in all of our results is to make the proceeds from debt issuances larger. All estimation results remain unchanged.

4.2 Market Timing Measures

The main constraint on the sample is the availability of analyst data. Unlike FFO or similar measures, NAV data are not readily available in standard analyst databases such as IBES. We obtain NAV data from SNL Securities and from Investext. SNL contains a fairly comprehensive set of analyst NAVs for a broad cross section of both REITs and brokerages. This data set however, only dates back to the start of 2001. We use hand collected analyst reports from Investext to obtain NAV estimates prior to this, and to fill any gaps in SNL's coverage.¹³ While the coverage universe for both SNL and Investext is not complete, both contain reports for the major brokerages. Furthermore, since we are considering consensus numbers rather than an individual analyst's opinion, the incomplete nature of the data source is unlikely to bias the results of the study.¹⁴

One motivation for issuing a given security type over another could be a manager trying to time the market. In fact, when asked, this is a oft cited reason given by CFOs for their security choice.¹⁵ Baker and Wurgler (2002) show that this market timing strategy appears to drive capital structure decisions for regular firms.

The fact that real estate trades in both the private market and the public market adds a wrinkle to the market timing story. Considering a REIT, its stock price summarizes how the public equity market values its cash flows, while its NAV measures summarizes how the private market values these same cash flows. Controlling for past returns and growth expectations, the price to NAV can be interpreted as a relative cost of equity capital. Since it is not trivial to arbitrage public and private markets, persistent premiums or discounts to NAV can rationally occur. One would naturally expect managers to issue equity in the

¹³Investext has been used as a source of data in other studies. See, for example, Mikhail, Asquith, and Au (2005).

¹⁴Green Street Advisors is another potential source of NAV data, but an examination of the coverage provided by Green Street suggests we have a more comprehensive coverage. Gentry and Mayer (2002) for example have a sample of 70 firms when using Green Street data, while Feng, Ghosh, and Sirmans (2007) have 60 in any given year.

¹⁵See Graham and Harvey (2001) for a survey.

public market when the cost of equity in that market is low. That is, issue equity when price to NAV is high. The mechanism driving this however, need not be the same as the standard market timing argument. In our case the manager is not strictly trying to take advantage of overpricing in the equity market, she is merely issuing equity into a market that places a higher value on those cash flows.

To capture both forms of market timing, we include the price to NAV ratio, the market to book ratio and the firm's average monthly return over the previous year. Standard market timing would suggest a positive relationship between market to book and average returns and equity issuances. Controlling for the average return, issuing equity when the price to NAV ratio is high, suggests the REIT is trying to time the public versus private real estate market.

Price to NAV ratios are constructed as follows. For every available analyst, we calculate the price to NAV ratio in the 180-day window prior to the issuance. We then take the mean across all analysts. Market to book ratios are constructed as in Baker and Wurgler (2002) and are calculated at the quarter preceding the security issuance. For all quarterly data, if no data is available in COMPUSTAT or SNL for the previous quarter, we look back as far as four quarters prior to find data.

Table 3 reports consensus price to NAV and market to book ratios and mean returns for issuing firms during each year of the sample. There is a good deal of time series and cross sectional variation in price to NAV ratios. On average, the sample firms trade at a 6% premium to NAV, but for individual firms this could have been as low as a 61% discount or as high as a 64% premium. A potential wedge between a firm's price and NAV is managerial skill. That is, the market values the manager's ability to grow cash flows over the static real estate portfolio. Since we control for expected growth, a myopic NAV should be captured in our growth proxies. Nonetheless, while managerial skill may explain some of the average premium to NAV, it does not explain why premiums and discounts are correlated across

firms. Firms tend to trade at premiums and discounts together. Under the managerial story, this implies that management skill is not only time varying, but that the skill of most managers varies in the same way.

Consistent with our private equity versus public equity argument, price to NAV ratios trend through time, with firms trading on average at discounts in the late 1990's and early 2000's and at premiums during other periods. These periods of discounts coincide with periods when anecdotally REITs were out of favor with the public equity market.

Market to book ratios show similar time series and cross sectional variation. Although they tend to be on average higher than price to NAV ratios, which is to be expected given the potential for the book value of equity to understate its net asset value. While they appear to be similar in nature, the correlation between the price to NAV ratio and the market to book ratio is only 47%, suggesting that they are potentially capturing different information.

Mean returns also varying quite considerably through time, with the average return being 1.8%. REITs experienced low average returns during the 1998 to 2000 period, which is consistent with both the market to book and price to NAV ratios. The correlation between both the market to book and price to NAV ratios and the mean return is 40%. Once again suggesting they are capturing similar, but not identical, effects.

Table 4 reports price to NAV ratios by issue type. A simple market timing argument suggests that price to NAV ratios should be highest for those firms issuing equity. A comparison of the total averages between Panels A and B shows this to be the case. Price to NAV ratios for common equity issuances average 1.1, for preferred equity they average 1.07, for public debt issuances they average 1.06 and for private debt they average 1.01. Formal t tests of differences in means shows that common equity has on average a price to NAV ratio significantly higher than all other security types. Private debt has on average a significantly lower price to NAV ratio than all other security types and on average preferred equity and public debt are not significantly different from each other. So, at a first glance, there appears

to be some merit to the market timing argument, at least in terms of price to NAV ratios.

The market timing argument appears to be similar when we examine market to book ratios. Table 5 shows that the average market to book ratio for common and preferred equity issues is 1.32; public debt is lower at 1.3; and private debt tends to have the lowest market to book of 1.27. One would expect the market to book ratio to be higher for equity issues under a standard market timing argument. Formal t tests of the difference in means shows that both common equity and preferred equity have market to book ratios that are larger than private debt. All other pairwise comparisons are not significant. This once again suggest that market timing may be playing a role in security choice.

Finally, Table 6 reports the mean return by issue type and issue year. On average, the mean return for common equity issues is 2.33%; the return for preferred equity is 2.01%; public debt issues have an average return of 1.41%; and private debt issues have an average return of 1.64%. This ordering is consistent with conventional market timing and returns are statistically different from each other apart from private and public debt.

4.3 Pecking Order

The accounting literature has long viewed analyst based measures of accuracy and dispersion as measures of asymmetric information. Lang and Lundholm (1996) show that accuracy increases and dispersion decreases when firms disclose more information about future earnings. Following Gomes and Phillips (2005) we employ two measures to capture asymmetric information. The first is *analyst forecast surprise*, which is the absolute difference between the mean quarterly analyst FFO forecast and the actual quarterly FFO value, all divided by the current stock price.¹⁶ The larger this value, the greater the forecast surprise, suggesting greater asymmetric information.

¹⁶FFO, funds from operations, is the standard ‘earnings’ measure reported in the REIT industry. It essentially adds back non-cash items such as depreciation and amortization to earnings.

The second measure is *analyst forecast dispersion*, calculated as the standard deviation of analyst quarterly FFO forecasts divided by the current stock price. Obviously, this measure is only defined for the cases where more than two analysts are providing coverage in a given quarter.¹⁷ For both measures of asymmetric information, analyst FFO forecasts were obtained from IBES and prices were obtained from CRSP.

Table 7 reports descriptive statistics for analyst forecast surprise and analyst forecast dispersion measures by year. There is some variation in the level of forecast surprise and dispersion through time, with the greater variation appearing in the analyst surprise measure. The correlation between the two variables is approximately 55%, suggesting they are capturing a similar effect. Comparing the magnitude of each measure to those reported in Gomes and Phillips (2005) for a sample of regular firms, we find that both measures are markedly smaller in magnitude. While the forecast surprise averages 0.13% and the forecast dispersion averages 0.06% in our sample, for regular firms they average 4.2% and 1.9% respectively. This suggests that, in general, REITs appear to have lower asymmetric information than regular firms.

Although REITs appear to have lower asymmetric information than regular firms on average, it may well be that a pecking order still holds across securities. Table 8 reports analyst forecast dispersion by issue type. The average forecast dispersion across groups is 0.0551% for common equity, 0.0646% for preferred equity, 0.0545% for public debt and 0.0666% for private debt. A *t* test of difference in means cannot reject the hypothesis that any two pairs are significantly different from one another.

Table 9 reports the analyst surprise variable for each security type across years. The analyst surprise variable displays more variation across issue types than the analyst dispersion variable. The average surprise is 0.096% for common equity, 0.1126% for preferred equity,

¹⁷For both measures we also tried other potential scalings, like actual FFO. The results were similar for different scalings although the scaling by price tended to be somewhat more statistically significant.

0.1476% for public debt and 0.1363% for private debt. t tests of differences in means shows that analyst surprise for common equity is significantly lower than for public debt. This conforms with traditional theories of the pecking order.

Recent papers have developed models of a dynamic pecking order.¹⁸ These theories suggest that firms will stockpile their debt capacity when growth prospects are good. To capture this we include *Growth*, the consensus analyst long term growth rate of the firm. Growth rates were obtained from IBES and were supplemented by hand collected reports from Investext.¹⁹ We would expect to see long term growth having a positive marginal effect on equity and a negative marginal effect on debt.

Aside from measuring growth opportunities for the dynamic pecking order theory, including long term growth rates also controls for the possibility that the price to NAV ratio simply reflects a difference in growth expectations. In theory, an efficient market impounds all publicly available information into the stock price. Investors forecast out expected future cash flows and discount them back at the opportunity cost of capital to estimate value. In this sense, the stock price should contain all available information about cash flow growth. Standard practice in calculating NAVs is to “cap out” the existing portfolio’s one year ahead expected NOI and then add development in progress. Although growth only enters the NAV calculation through the cash flows for one period, the cap rate used has a growth rate implicitly built into it. So differences in price and NAV shouldn’t be driven by a lack of growth being impounded into the NAV for the existing portfolio.

Since NAV is based off of the existing portfolio and development in progress, it is possible that expectations of future development could drive a wedge between price and NAV. That is, the NAV only includes cash flows from current properties and those in development, whereas the price includes cash flows from these properties plus all expected future development. In

¹⁸See, for example, Fisher, Heinkel, and Zender (1989) and Ju, Parino, Poteshman, and Weisbach (2002).

¹⁹Compared to FFO forecasts, IBES’s coverage of long term growth rates is less comprehensive. This is why we supplemented it with the hand collected data.

making long term growth forecast, the analyst is able to include expected future development in their expected growth rate. Controlling for long term growth in the estimation, mitigates the potential for the price to NAV ratio to simply be capturing expected future growth caused by development not impounded in the NAV.

One of the obvious conclusions of the pecking order is that firms should not pay dividends and issue equity.²⁰ If equity is costly to issue, then the firm would have been better off retaining the cash than paying it in dividends and then having to issue more equity. Since REITs are required to pay out 90% of their taxable net income in dividends, the retention of dividends is not an option. If the pecking order still holds, however, we would expect REITs to retain capital where possible. As such, we include, *FFO Pay Out*, the firm's dividend divided by its funds from operations in the previous quarter.²¹ The larger is this variable, the less likely a firm should be to issue equity.

4.4 Tradeoff Theory

Tradeoff theory predicts that any variable measuring the expected costs of bankruptcy, should have a negative relationship with debt, and a positive relationship with equity. We include, *Leverage*, the firm's market leverage in the previous quarter. This is calculated as the book value of debt and preferred stock divided by the market value of the firm (book value of debt and preferred equity plus the market value of equity.) All else equal, firms with higher leverage should be less likely to issue debt.

Second, we include the *Fixed Charge Coverage* ratio. This is essentially the REIT equivalent of the interest coverage ratio for regular firms. It is calculated as the ratio of EBITDA to interest expense plus preferred dividends. This ratio is commonly used by credit rating agencies when rating the debt of REITs.²² The higher this ratio is, the less likely the firm

²⁰See, Fama and French (2002) for a discussion.

²¹Result are not sensitive to using an annual measure.

²²See Issac-Lowe (2000) for a discussion of financial ratios used to analyze REITs.

is default on its debt. As such, we expect a negative relationship with equity and a positive relationship with debt.

Third, *Default Spread* is the spread between the yield on long term BBB debt and the 10-year treasury. When this spread is high, default risk in the economy is greater, suggesting expected bankruptcy costs are higher. Thus, firms would be less likely to issue debt when this spread is high.

Fourth, we complement the default spread with a firm specific spread *Interest Difference*. *Interest Difference* is the spread between the firm's weighted average interest rate and the rate on 10-year BBB debt. While the default spread measures default risk at the economy level, interest difference measures this at a firm specific level. Once again, under the tradeoff theory we would expect a higher interest difference to be related to a higher probability of issuing equity and a lower probability of issuing debt.

Finally, the productivity of a firm's assets may also play a role in financing choice. Assets that yield high levels of cash flow are likely to be able to sustain higher levels of debt than assets that have low cash yields. We measure the cash yield of the REIT as *NOI to Gross Properties*, its net operating income divided by its gross property. The higher this ratio, the higher the cash yield from the firm's assets and the more likely they are to finance with debt.

4.5 Other Factors

We also include *rated*, a dummy variable equalling one if the firm has public debt outstanding that has been rated by S&P. Having rated debt outstanding could be a sign of lower asymmetric information. It could, however, just simply measure a relatively lower transaction cost of going back to the public market since the firm's debt is already a known entity.

Although we control for the overall effect of leverage using *Leverage* it may be the case that the type of leverage, secured or unsecured matters. Since the vast majority of publicly issued REIT debt is senior unsecured notes, it is logical to expect that the covenants imposed

on this type of issuance would effect a firm's choice to issue. Given that unsecured notes are subordinate to secured debt, their access to collateral in default is limited to the firm's unencumbered assets. To capture this, we include *Secured Debt to Gross Properties*, which is the ratio of the firm's secured debt to its gross properties.²³

We also control for firm size. *Size* is the natural log of the firm's market capitalization taken at the quarter prior to issuance. Given that size could proxy for any number of factors, we do not have a priori expectations for its coefficient.

5 Multinomial Logit Estimation

This section reports estimation results for the multinomial logit. One of the major limitations of the multinomial logit is that the estimated coefficients do not have a direct economic interpretation. In fact, it is possible that while the coefficient is positive, its marginal effect is negative. To aid interpretation, we report only the marginal effects from the multinomial logit estimation. For each model the estimation reports four separate sets of marginal effects, one for each outcome.

Table 10 (11) report multinomial logit estimates when analyst surprise (dispersion) is used as the measure of asymmetric information. Panel A reports marginal effects for common equity, and preferred equity, while Panel B reports marginal effects for public debt, and private debt. The most noticeable result is the strong marginal effect of the price to NAV ratio on common equity and private debt. A one standard deviation increase in price to NAV ratio makes a firm nearly 6% more likely to issue common equity.

Gentry and Mayer (2003) find a similar relationship between the price to NAV ratio and equity issuances. They, however, conclude that the relationship is the result of price to NAV being a measure of Tobin's Q. We, on the other hand, find the relationship holds after

²³An examination of REIT public debt prospectuses shows that it is also common to place restrictions on the fixed charge coverage ratio and total level of leverage.

controlling for the firm's growth prospects and past equity returns. Our interpretation is that once you control for the firm's growth prospects and past returns, the price to NAV ratio essentially measures the relative equity cost of capital between public and private markets. Issuing equity when the price to NAV is high, indicates that REITs are timing the public and private equity markets by issuing public equity when its cost of capital is lower than in the private equity market.

Consistent with standard market timing, we find that firms are more likely to issue equity after experiencing high past equity returns. Since it is after these high returns that the market is most likely to overvalue the firm's equity, issuing equity at these times suggests that managers are trying to time the public capital market. The strong support for market timing, while consistent with Baker and Wurgler (2002) for regular firms, is counter to the result of Feng, Ghosh, and Sirmans (2007) who also examine REITs.

The second main result from Tables 10 and 11 is the support for the tradeoff theory. When expected bankruptcy costs are high, firms are more likely to issue equity and less likely to issue debt. The Interest Difference coefficient is significantly positive for equity issues and significantly negative for debt issues. Firms with high fixed charge coverage ratios are more likely to issue debt and less likely to issue preferred equity. Finally, when the default spread is high, firms are more likely to issue preferred equity and less likely to issue private debt. The one variable that weakly violates tradeoff theory is leverage. While firms with higher leverage are more likely to issue equity, they are less likely to issue preferred equity. Overall, however, the support for the tradeoff theory is quite strong.

The third result from Tables 10 and 11 is the lack of support for the static pecking order theory. If pecking order holds, we would expect to see a negative marginal effect for equity issuances and a positive marginal effect for debt issuances on the analyst surprise and analyst dispersion variables. Examining the point estimates we see no consistent pattern in the data. The only point estimate that is significantly different from zero is for the analyst

dispersion variable for preferred equity. The sign of the point estimate is, however, counter to the pecking order. One would expect a negative sign for any kind of equity issuance. There are two potential explanations for these results. First, our analyst based variables may not be capturing asymmetric information.²⁴ As reported in Table 7, REITs appear to have lower levels of both Analyst Forecast Surprise and Dispersion compared to similar statistics reported by Gomes and Phillips (2005). Perhaps the underlying nature of the REIT business makes analyst based measures a poor proxy of asymmetric information.

A second potential explanation of our result is that the analyst based measures of asymmetric information are being swamped by some other variables in the estimation. One could interpret the size variable as a measure of asymmetric information. It is intuitive to think that holding industry constant, larger firms should have less asymmetric information than smaller firms.²⁵ If this is the case, we would expect large firms (those that have low asymmetric information), to issue more equity, since the pecking order should play less of a role for these firms. We would also expect small firms to issue debt. The point estimates on the size variable run counter to this interpretation in all cases.

Some very weak evidence for the pecking order is found in the FFO Pay Out and Growth variables. Firms with high payout ratios are more likely to issue public debt and less likely to issue preferred equity. This is consistent with the idea that a firm should payout dividends and then issue equity. Unfortunately, the marginally significant positive point estimate for common equity runs counter to the pecking order. Under dynamic pecking order theories, firms may choose to stockpile debt when growth prospects are high. While there is a positive coefficient on growth for public debt, there is a negative coefficient for private debt.

The point coefficient on the secured debt to gross property ratio leads to an interesting observation. When thinking about capital structure, typically little thought is given to the

²⁴Best and Best (1995) also use analyst based measures of asymmetric information and find little evidence for the pecking order.

²⁵It is well known that larger firms have higher analyst coverage and higher institutional ownership.

type of debt the firms has. When issuing public debt, it isn't the overall level of debt that is important, but rather it is the level of secured debt. Controlling for overall leverage, firms with few unencumbered assets are less likely to issue public debt. This result, while not initially obvious, is a result of market structure. The public debt market for REITs is dominated by senior unsecured debt. To issue such debt, the market requires that the firm have large quantities of unencumbered assets. These unencumbered assets effectively secure the senior unsecured debt in default. It is interesting to note the strong positive coefficient on preferred equity. Since preferred equity is subordinate to senior unsecured debt, it doesn't face the same requirement as the public debt. In fact, the sign suggests that firms may issue preferred equity when they are locked out of the public debt market.

Overall our results are supportive of the market timing hypothesis and the tradeoff theory. Our weakest results are those relating to the pecking order. We find no evidence for a static pecking order and very weak evidence of a dynamic pecking order.

6 Conclusion

We examine the role that traditional capital structure theories play in the security issuance decisions of real estate investment trusts. Although these theories have received a great deal of attention in the finance literature, the degree to which these results relate to REITs is unclear due to their structural features. Most obviously, REITs are effectively tax exempt at the corporate level, which rules out taxed based motivations for issuing securities. REITs are also required to pay out at least 90% of their taxable income in dividends in order to maintain their tax exempt status. This high payout ratio means that free cash flow motivations are also unlikely to play a significant role in security issuances.

REITs also represent a fairly transparent investment vehicle. This is not to say that managers do not have inside information, but compared to pharmaceutical companies for

example, it is difficult to argue that REIT investors face a high level of asymmetric information. It has been argued that real estate trades in an illiquid secondary market,²⁶ which is true to some degree, but this needs to be compared to regular firms whose assets do not trade in any secondary market. The simple fact that analysts can estimate the net asset value of a REIT, or even bother to do so, suggests a degree of transparency surrounding the firm's assets that does not occur in regular firms. We would argue that this transparency mitigates to a large degree the applicability of pecking order motivations to issue securities.²⁷

As opposed to regular firms, REITs also issue a significant amount of preferred equity. From a theoretical perspective there is little guidance as to what drives preferred equity issuances for tax exempt firms.

Examining a sample of 103 equity REITs making security issuances between 1997 and 2006, we find the following results. First, REITs appear to try and time the market. They do this in two ways. First, REITs are more likely to issue equity after high past returns. This is consistent with conventional market timing theories and suggests that REITs try to time the public equity market. Second, REITs also try and time the public and private equity markets. Controlling for growth and past returns, a high price to NAV ratio suggests that the firm faces a lower cost of capital in the public market compare to the private market. Issuing equity in the public market in such a situation is the rational decision for management. Notice, however, there is no behavioral motivation underlying this result. Managers are not issuing public equity because they believe it is overvalued. It is just relatively cheaper compared to private equity.

Second, we find support for the tradeoff theory. REITs consistently appear to shy away from debt and towards equity when expected bankruptcy costs are high. Although we don't have a formal explanation of why REITs issue debt in a tradeoff framework, we do show

²⁶See Feng, Ghosh, and Sirmans (2007).

²⁷See Myers (1984) and Myers and Majluf (1984).

that, at least as far as the costs of the tradeoff are concerned, they appear to take these costs into account when making their choice of debt and equity.

Third, we find little support for static pecking order theory. Our analyst based measures of asymmetric information do not drive security issuances in the direction predicted by the pecking order. Furthermore, other variables related to the pecking order provide little corroboration evidence. Firms with high pay out ratios are more likely to issue equity and firms with high growth options do not appear to consistently stock pile debt capacity.

Finally, REITs appear to issue preferred equity as a substitute for debt. The decision to issue equity and preferred equity appear to be quite different. High price to NAV and past market returns do not increase the probability of issuing preferred equity. However, when the costs of issuing debt are high, REITs are more likely to issue preferred equity. This suggests, at least indirectly that, preferred equity is a substitute for debt rather than equity.

Overall our results suggest that REIT issuance decisions are largely driven by market timing and trade off motivations. REITs try to time the public and private equity markets and stay away from the debt market when the expected costs of bankruptcy are high.

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Table 1: Firm and Issue Characteristics

Table reports descriptive statistics for issuances by 103 equity REITs between 1997 to 2006. Panel A reports the number of firms issuing a given type of security. Panel B reports the number of firms that issued multiple security types during the sample.

Panel A: Issues		
Type	No. Issues	No. Issuing Firms
Equity	247	84
Preferred Equity	237	66
Public Debt	387	41
Private Debt	212	64
Total	1083	
Panel B: Multiple Type Issues		
Security Types	No. Firms	
1	18	
2	37	
3	29	
4	19	
Total	103	

Table 2: Issue Characteristics

Table reports descriptive statistics for issuances by 103 equity REITs from 1997 to 2006. Panel A reports common equity and preferred equity issuances. Panel B reports public debt and private debt issuances. All values are in millions except number of issues.

Panel A: Equity Issues										
Year	Issues	Common				Preferred				
		Mean	Std Dev	Min	Max	Issues	Mean	Std Dev	Min	Max
1997	10	146.03	166.56	17.6	517.6	4	125	54.01	50	175
1998	21	34.46	22.74	9.5	90.4	8	134.38	75	50	250
1999	2	93.85	66.96	46.5	141.2	5	65.5	32.81	27.5	100
2000	3	269.91	345.12	64.88	668.36	15	51.54	68.51	1	250
2001	19	100.91	103.46	2.69	396.67	20	71.55	113.58	9.5	510
2002	23	70.4	81.04	8.7	323.46	26	63.62	56.27	4.5	212.5
2003	46	85.25	88.66	12	605.51	50	78.81	50.9	2.52	205
2004	42	131.78	155.18	3.14	915.33	53	84.87	65.02	0.13	316.25
2005	34	142.09	157.82	8.3	780.75	35	76.52	63.55	6	250
2006	47	211.52	192.47	12.4	1012.5	21	135.42	124.79	10	517.5
Total	247	125.29	149.04	2.69	1012.5	237	83.21	75.78	0.13	517.5

Panel B: Debt Issues										
Year	Issues	Public				Private				
		Mean	Std Dev	Min	Max	Issues	Mean	Std Dev	Min	Max
1997	4	48.95	66.73	6.2	148.5	6	158.2	34.25	124.6	200
1998	16	68.87	84.23	5.5	318	11	175.3	103.12	35.94	328
1999	28	158.27	122.85	5	497.8	14	114.6	102.06	10	420
2000	27	130.04	160.58	10	600	20	176.83	126.85	10	475
2001	22	211.36	257.65	10	1100	16	159.32	128.75	14.5	494
2002	42	116.19	123.09	5	500	27	170.44	186.71	9	750
2003	36	123.64	115.73	6	500	20	191	124.32	5.1	450
2004	78	109.48	137.55	0.21	800	36	342.67	654.29	34.5	3650
2005	87	73.73	118.87	0.04	500	32	589.18	812.08	29	3650
2006	47	298.82	198.95	25	1000	30	405.42	552.78	0.5	2850
Total	387	134.93	161.57	0.04	1100	212	294.07	493.76	0.5	3650

Table 3: Measures of Market Timing

Table reports descriptive statistics for price to NAV, market to book ratio and mean return for 103 equity REITs making security issuances from 1997 to 2006. Price to NAV Ratios are consensus ratios taken during a 180-day window before the issuance. Market to book ratios are calculated as in Baker and Wurgler (2002) and are calculated at the quarter before issuance. Mean return is the average monthly return for the year prior to issuance.

Year	Price to NAV			Market to Book			Mean Return		
	Mean	Std Dev	Min Max	Mean	Std Dev	Min Max	Mean	Std Dev	Min Max
1997	1.14	0.1	0.97 1.43	1.32	0.15	1.04 1.6	2.61	0.97	1.26 4.90
1998	1.15	0.16	0.92 1.44	1.26	0.14	0.98 1.45	0.92	1.41	-2.73 5.13
1999	0.93	0.11	0.71 1.25	1.12	0.16	0.85 1.78	-0.32	1.19	-2.52 2.68
2000	0.9	0.12	0.62 1.16	1.13	0.16	0.77 1.75	1.16	1.48	-4.77 4.06
2001	0.92	0.11	0.39 1.16	1.19	0.17	0.8 1.91	2.21	1.02	-0.66 4.41
2002	1	0.11	0.66 1.39	1.25	0.15	0.87 1.65	1.59	1.80	-9.36 4.37
2003	1.1	0.14	0.57 1.64	1.29	0.2	0.75 1.97	1.72	1.20	-5.90 4.65
2004	1.13	0.12	0.7 1.63	1.32	0.2	0.91 2.09	2.34	1.15	-0.01 5.43
2005	1.09	0.1	0.84 1.38	1.32	0.22	0.97 2.14	1.85	1.00	-0.70 5.41
2006	1.08	0.09	0.83 1.33	1.52	0.29	1 2.31	2.19	1.22	-0.68 5.33
Total	1.06	0.14	0.39 1.64	1.3	0.23	0.75 2.31	1.80	1.39	-9.36 5.43

Table 4: Price to NAV Ratios by Issue Type

Table reports price to NAV ratios for 103 equity REITs making security issuances between 1997 and 2006. Panel A reports price to NAV ratios by year for common equity and preferred equity issuances. Panel B reports price to NAV ratios by year for public debt and private debt issuances.

Panel A: Equity Issues										
Year	Issues	Common				Preferred				
		Mean	Std Dev	Min	Max	Issues	Mean	Std Dev	Min	Max
1997	10	1.16	0.14	0.97	1.43	4	1.12	0.09	1.01	1.22
1998	21	1.18	0.14	1.03	1.44	8	1.15	0.18	0.92	1.38
1999	2	0.9	0.23	0.74	1.06	5	1.01	0.17	0.8	1.25
2000	3	1	0.13	0.92	1.16	15	0.91	0.06	0.77	0.99
2001	19	0.99	0.1	0.83	1.16	20	0.92	0.1	0.64	1.08
2002	23	1.01	0.06	0.94	1.13	26	0.97	0.08	0.8	1.11
2003	46	1.11	0.11	0.91	1.28	50	1.12	0.13	0.8	1.59
2004	42	1.15	0.1	0.94	1.36	53	1.14	0.16	0.7	1.63
2005	34	1.11	0.13	0.84	1.38	35	1.1	0.12	0.88	1.29
2006	47	1.1	0.09	0.92	1.33	21	1.06	0.1	0.86	1.18
Total	247	1.1	0.12	0.74	1.44	237	1.07	0.15	0.64	1.63

Panel B: Debt Issues										
Year	Issues	Public				Private				
		Mean	Std Dev	Min	Max	Issues	Mean	Std Dev	Min	Max
1997	4	1.09	0.03	1.07	1.12	6	1.13	0.05	1.07	1.21
1998	16	1.17	0.21	0.92	1.4	11	1.04	0.08	0.95	1.18
1999	28	0.94	0.1	0.79	1.17	14	0.87	0.08	0.71	0.99
2000	27	0.94	0.13	0.7	1.16	20	0.83	0.12	0.62	1.01
2001	22	0.91	0.05	0.79	0.99	16	0.86	0.14	0.39	0.99
2002	42	1.05	0.11	0.88	1.39	27	0.92	0.12	0.66	1.11
2003	36	1.1	0.17	0.57	1.64	20	1.04	0.14	0.8	1.24
2004	78	1.12	0.11	0.94	1.6	36	1.12	0.12	0.93	1.42
2005	87	1.08	0.07	0.93	1.32	32	1.1	0.08	0.87	1.27
2006	47	1.06	0.07	0.89	1.18	30	1.08	0.08	0.83	1.23
Total	387	1.06	0.13	0.57	1.64	212	1.01	0.15	0.39	1.42

Table 5: Market to Book Ratios by Issue Type

Table reports market to book ratios for 103 equity REITs issuing securities between 1997 and 2006. Panel A reports market to book ratios by year for common equity and preferred equity issuances. Panel B reports market to book ratios by year for public debt and private debt issuances.

Panel A: Equity Issues										
Year	Issues	Common				Preferred				
		Mean	Std Dev	Min	Max	Issues	Mean	Std Dev	Min	Max
1997	9	1.35	0.2	1.04	1.6	4	1.24	0.01	1.22	1.25
1998	21	1.31	0.11	1.08	1.45	8	1.23	0.17	0.98	1.43
1999	2	1.03	0.26	0.85	1.22	5	1.12	0.17	0.89	1.27
2000	3	1.35	0.07	1.29	1.43	14	1.1	0.08	0.99	1.34
2001	19	1.3	0.21	0.96	1.91	20	1.18	0.15	0.82	1.4
2002	23	1.24	0.18	0.98	1.53	26	1.24	0.15	0.94	1.48
2003	46	1.25	0.21	0.84	1.97	50	1.28	0.15	1	1.62
2004	42	1.31	0.18	0.97	1.77	53	1.4	0.21	0.91	2.09
2005	34	1.29	0.16	1.07	1.7	35	1.43	0.3	1.01	2.14
2006	47	1.48	0.3	1.07	2.31	21	1.51	0.24	1	1.86
Total	246	1.32	0.22	0.84	2.31	236	1.32	0.23	0.82	2.14

Panel B: Debt Issues										
Year	Issues	Public				Private				
		Mean	Std Dev	Min	Max	Issues	Mean	Std Dev	Min	Max
1997	4	1.28	0.06	1.23	1.36	6	1.36	0.12	1.23	1.58
1998	16	1.26	0.18	1.02	1.42	11	1.18	0.08	1.07	1.29
1999	28	1.1	0.13	0.92	1.41	14	1.16	0.2	0.95	1.78
2000	27	1.17	0.2	0.77	1.75	20	1.08	0.1	0.8	1.26
2001	22	1.13	0.11	0.88	1.41	16	1.14	0.15	0.8	1.34
2002	42	1.3	0.12	1.08	1.65	27	1.21	0.15	0.87	1.53
2003	36	1.35	0.24	0.75	1.97	20	1.3	0.16	1.14	1.62
2004	78	1.27	0.21	0.98	1.93	36	1.32	0.18	0.98	1.62
2005	87	1.27	0.21	1.08	2.12	32	1.34	0.16	0.97	1.66
2006	47	1.63	0.34	1	2.31	30	1.43	0.16	1.17	1.84
Total	387	1.3	0.25	0.75	2.31	212	1.27	0.19	0.8	1.84

Table 6: Mean Return by Issue Type

Table reports mean return for 103 equity REITs issuing securities between 1997 and 2006. Panel A reports mean returns by year for common equity and preferred equity issuances. Panel B reports mean return by year for public debt and private debt issuances.

Panel A: Equity Issues										
Year	Issues	Common				Preferred				
		Mean	Std Dev	Min	Max	Issues	Mean	Std Dev	Min	Max
1997	10	0.0313	0.0113	0.0189	0.0490	4	0.0211	0.0068	0.0126	0.0272
1998	21	0.0147	0.0060	0.0043	0.0272	8	0.0189	0.0224	-0.0158	0.0513
1999	2	-0.0047	0.0289	-0.0252	0.0157	5	-0.0012	0.0079	-0.0072	0.011
2000	3	0.0268	0.0108	0.0146	0.0348	15	0.013	0.0113	-0.0025	0.0406
2001	19	0.0239	0.0128	-0.0066	0.0441	20	0.0194	0.0089	0.002	0.0337
2002	23	0.0273	0.0070	0.0200	0.0437	26	0.0169	0.0125	-0.007	0.0358
2003	46	0.0183	0.0079	-0.0104	0.0354	50	0.0189	0.0127	-0.0124	0.0465
2004	42	0.0282	0.0097	0.0026	0.0543	53	0.0271	0.0118	-0.0001	0.0542
2005	34	0.0225	0.0105	0.0040	0.0541	35	0.0195	0.0126	-0.007	0.0541
2006	47	0.0254	0.0139	0.0039	0.0533	21	0.0216	0.0131	-0.0013	0.0462
Total	247	0.0233	0.0115	-0.0252	0.0543	237	0.0201	0.0132	-0.0158	0.0542
Panel B: Debt Issues										
Year	Issues	Public				Private				
		Mean	Std Dev	Min	Max	Issues	Mean	Std Dev	Min	Max
1997	4	0.0258	0.0026	0.0231	0.0286	6	0.0208	0.0076	0.0165	0.0354
1998	16	0.0027	0.0117	-0.0156	0.0275	11	0.001	0.0135	-0.0273	0.0288
1999	28	-0.0071	0.0103	-0.0229	0.016	14	0.0043	0.0109	-0.0151	0.0268
2000	27	0.0133	0.0172	-0.0477	0.0405	20	0.0061	0.0124	-0.0107	0.0347
2001	22	0.0233	0.0091	0.0073	0.0398	16	0.0217	0.0097	0.0013	0.0387
2002	42	0.0136	0.0102	-0.0092	0.0322	27	0.0086	0.0305	-0.0936	0.0288
2003	36	0.0132	0.0155	-0.059	0.0357	20	0.0172	0.01	-0.0017	0.0321
2004	78	0.0165	0.0098	0.0044	0.0418	36	0.0274	0.0089	0.0026	0.0494
2005	87	0.0163	0.0081	-0.0032	0.0331	32	0.0193	0.0102	0.0001	0.0398
2006	47	0.019	0.011	-0.0068	0.0445	30	0.0209	0.0091	0.0026	0.0462
Total	387	0.0141	0.013	-0.059	0.0445	212	0.0164	0.0164	-0.0936	0.0494

Table 7: Asymmetric Information

Table reports descriptive statistics for the analyst forecast dispersion and the analyst forecast surprise. The analyst forecast dispersion is calculated as the standard deviation of analyst forecast FFO divided by the current share price. Analyst forecast surprise is the absolute difference between quarterly FFO and analyst consensus FFO divided by the current share price. All values reported are percentages.

Year	Analyst Forecast Dispersion				Analyst Forecast Surprise			
	Mean	Std Dev	Min	Max	Mean	Std Dev	Min	Max
1997	0.05	0.02	0.01	0.08	0.04	0.05	0	0.21
1998	0.04	0.03	0	0.15	0.07	0.07	0	0.31
1999	0.04	0.03	0	0.17	0.04	0.03	0	0.15
2000	0.06	0.06	0	0.24	0.05	0.06	0	0.22
2001	0.05	0.12	0	1.08	0.09	0.47	0	4.12
2002	0.05	0.06	0	0.38	0.07	0.14	0	1.23
2003	0.06	0.08	0	0.57	0.1	0.17	0	1.33
2004	0.08	0.09	0	0.37	0.19	0.39	0	4.28
2005	0.07	0.05	0	0.45	0.24	0.38	0	1.68
2006	0.05	0.04	0	0.26	0.08	0.08	0	0.47
Total	0.06	0.07	0	1.08	0.13	0.29	0	4.28

Table 8: Analyst Forecast Dispersion by Issue Type

Table reports descriptive statistics by issue type for the analyst forecast dispersion. The analyst forecast dispersion is calculated as the standard deviation of analyst forecast FFO divided by the current share price. Panel A reports results for common equity issuances and preferred equity issuances, while Panel B reports results for public debt issuances and private debt issuances. All values reported are percentages

Panel A: Equity Issues										
Year	Issues	Common				Preferred				
		Mean	Std Dev	Min	Max	Issues	Mean	Std Dev	Min	Max
1997	9	0.0434	0.0245	0.0147	0.0846	4	0.048	0.0154	0.0343	0.0701
1998	21	0.047	0.0263	0.024	0.1144	8	0.0488	0.0277	0.026	0.1073
1999	2	0.0254	0.0071	0.0204	0.0304	5	0.0541	0.0453	0.0148	0.1325
2000	3	0.0144	0.0164	0	0.0322	14	0.0467	0.0464	0	0.189
2001	19	0.0201	0.0295	0	0.1104	20	0.0446	0.0387	0	0.1357
2002	23	0.0419	0.0316	0	0.0953	26	0.0633	0.0791	0	0.383
2003	46	0.06	0.0837	0	0.4716	50	0.0579	0.0505	0.0055	0.2829
2004	42	0.0714	0.0596	0.0121	0.2729	53	0.0742	0.0781	0.0203	0.3674
2005	34	0.0724	0.0559	0.0094	0.2528	35	0.0804	0.0505	0.0233	0.227
2006	47	0.0535	0.0445	0	0.2627	21	0.0737	0.0494	0.0153	0.1831
Total	246	0.0551	0.0561	0	0.4716	236	0.0646	0.0598	0	0.383
Panel B: Debt Issues										
Year	Issues	Public				Private				
		Mean	Std Dev	Min	Max	Issues	Mean	Std Dev	Min	Max
1997	4	0.0275	0.0053	0.023	0.0328	6	0.064	0.0202	0.023	0.0758
1998	16	0.0298	0.0373	0	0.1143	11	0.0491	0.0361	0.0268	0.1499
1999	28	0.0371	0.0296	0	0.0998	14	0.0576	0.0397	0.0282	0.1749
2000	27	0.0402	0.043	0	0.1613	20	0.0883	0.0807	0	0.2396
2001	22	0.0384	0.0252	0	0.1164	16	0.1109	0.2605	0	1.0801
2002	42	0.0308	0.0256	0	0.1198	27	0.0801	0.079	0.0135	0.3485
2003	36	0.0488	0.0925	0	0.5693	20	0.064	0.118	0	0.5522
2004	78	0.0907	0.1148	0	0.3469	36	0.066	0.068	0.0167	0.3165
2005	87	0.064	0.0493	0	0.4502	32	0.049	0.026	0.019	0.11
2006	47	0.0388	0.0298	0.0074	0.129	30	0.0448	0.0289	0	0.1106
Total	387	0.0545	0.0697	0	0.5693	212	0.066	0.0945	0	1.0801

Table 9: Analyst Forecast Surprise by Issue Type

Table reports descriptive statistics by issue type for the analyst forecast surprise. The analyst forecast surprise is the absolute difference between quarterly FFO and analyst consensus FFO divided by the current share price. Panel A reports results for common equity issuances and preferred equity issuances, while Panel B reports results for public debt issuances and private debt issuances. All values reported are percentages

Panel A: Equity Issues										
Year	Issues	Common				Preferred				
		Mean	Std Dev	Min	Max	Issues	Mean	Std Dev	Min	Max
1997	10	0.0555	0.0783	0	0.2077	4	0.0449	0.0365	0	0.0816
1998	21	0.0746	0.0676	0	0.3064	8	0.1121	0.1041	0	0.2509
1999	2	0.0483	0.0177	0.0358	0.0609	5	0.0264	0.028	0	0.0656
2000	3	0.0351	0.0442	0.008	0.0861	15	0.0475	0.0529	0.0122	0.2245
2001	19	0.0236	0.024	0	0.0741	20	0.0597	0.0533	0	0.1357
2002	23	0.0392	0.0307	0	0.0947	26	0.0678	0.1154	0	0.4605
2003	46	0.1118	0.1338	0	0.5306	50	0.1112	0.1768	0	0.9921
2004	42	0.1591	0.1489	0	0.6685	53	0.1385	0.1769	0	1.0112
2005	34	0.118	0.0949	0	0.4191	35	0.194	0.1771	0.0126	0.6368
2006	47	0.0896	0.1022	0	0.4723	21	0.1013	0.0921	0	0.3662
Total	247	0.096	0.112	0	0.6685	237	0.1126	0.1513	0	1.0112

Panel B: Debt Issues										
Year	Issues	Public				Private				
		Mean	Std Dev	Min	Max	Issues	Mean	Std Dev	Min	Max
1997	4	0.0107	0.0149	0	0.0315	6	0.0438	0.023	0.0117	0.0586
1998	16	0.0408	0.023	0	0.1112	11	0.0793	0.0802	0	0.2509
1999	28	0.0385	0.0366	0	0.1466	14	0.0353	0.03	0	0.0939
2000	27	0.0491	0.0517	0	0.1882	20	0.0641	0.0751	0	0.2091
2001	22	0.0301	0.0364	0	0.1184	16	0.3015	1.02	0	4.1233
2002	42	0.0418	0.0372	0	0.1359	27	0.1226	0.2503	0	1.2311
2003	36	0.0605	0.0867	0	0.4718	20	0.1226	0.2865	0	1.325
2004	78	0.2046	0.34	0	1.2881	36	0.2551	0.7501	0	4.2838
2005	87	0.3516	0.5129	0	1.6766	32	0.1374	0.1226	0	0.4689
2006	47	0.0609	0.0552	0	0.2365	30	0.0604	0.0552	0	0.2054
Total	387	0.1476	0.3148	0	1.6766	212	0.1363	0.4391	0	4.2838

Table 10: Multinomial Logit Estimation: Analyst Forecast Surprise

Table reports marginal effects from a multinomial logit estimation. The four possible outcomes in the estimation are common equity, preferred equity, public debt and private debt. Panel A reports marginal effects for common equity and preferred equity while Panel B reports marginal effects for public debt and private debt. Forecast Surprise is the analyst forecast surprise, Price to NAV is the consensus price to NAV ratio. Growth is the firm's consensus long term growth estimate and Market to Book is the firm's market to book ratio. Fixed Charge Cov. is the fixed charge coverage ratio and Default Spread is the spread between 10-year BBB and 10-year Treasury rates. Sec Debt to Gross Prop is the ratio of the secured debt to gross property value and Rated is a dummy variable taking the value one if the firm has rated debt outstanding. FFO Pay Out is dividends paid divided by funds from operation and Size is the natural log of the firm's market capitalization. Mean Return is the average monthly return on the firm's equity in the previous year and Leverage is the total debt plus preferred equity divided by total capital. NOI to Gross Property is the ratio of net operating income to the firm's gross property and Interest Difference is the firm's weighted average interest rate minus the yield on 10-year BBB debt.

Panel A: Equity Issues						
Variable	Common Equity			Preferred Equity		
	Marginal Effect	Std Error	Z	Marginal Effect	Std Error	Z
Forecast Surprise	-10.1201	7.5394	-1.34	3.8096	5.0258	0.76
Price to NAV	0.5022	0.1134	4.43	0.0481	0.1409	0.34
Growth	0.0026	0.4549	0.01	-0.3323	0.5729	-0.58
Market to Book	-0.0033	0.0117	-0.29	-0.0048	0.0133	-0.36
Fixed Charge Cov.	0.0210	0.0130	1.62	-0.1126	0.0371	-3.03
Default Spread	-2.1686	3.1897	-0.68	17.2025	3.8509	4.47
Sec Debt to Gross Prop	0.0724	0.1056	0.69	0.6214	0.1258	4.94
Rated	-0.0741	0.0427	-1.74	0.1246	0.0451	2.76
FFO Pay Out	0.1665	0.0821	2.03	-0.4233	0.1282	-3.3
Size	-0.1324	0.0180	-7.38	-0.0997	0.0208	-4.79
Mean Return	6.5916	1.3141	5.02	0.8314	1.4025	0.59
Leverage	0.4177	0.2016	2.07	-1.0928	0.2884	-3.79
NOI to Gross Prop	3.0145	1.0946	2.75	-1.1289	1.2096	-0.93
Interest Difference	4.1848	1.8744	2.23	9.8641	2.5965	3.8
Panel B: Debt Issues						
Variable	Public			Private		
	Marginal Effect	Std Error	Z	Marginal Effect	Std Error	Z
Forecast Surprise	3.3235	4.8979	0.68	2.9869	5.0104	0.6
Price to NAV	-0.0478	0.1471	-0.33	-0.5025	0.1361	-3.69
Growth	-1.4537	0.6156	-2.36	1.7835	0.5460	3.27
Market to Book	0.0114	0.0208	0.55	-0.0032	0.0102	-0.31
Fixed Charge Cov.	0.0590	0.0170	3.47	0.0327	0.0136	2.4
Default Spread	-0.8914	3.9972	-0.22	-14.1425	3.5586	-3.97
Sec Debt to Gross Prop	-0.9121	0.1636	-5.57	0.2183	0.1107	1.97
Rated	0.1613	0.0523	3.08	-0.2118	0.0493	-4.3
FFO Pay Out	0.3211	0.1028	3.12	-0.0642	0.0837	-0.77
Size	0.1489	0.0216	6.9	0.0833	0.0217	3.83
Mean Return	-6.6685	1.3456	-4.96	-0.7545	1.0790	-0.7
Leverage	0.3383	0.2643	1.28	0.3368	0.2204	1.53
NOI to Gross Prop	-2.2515	1.3975	-1.61	0.3659	1.1736	0.31
Interest Difference	-6.9965	2.3995	-2.92	-7.0524	2.0503	-3.44
No. of Obs	1083					
Wald $\chi^2(42)$	433.12					
Pseudo- R^2	0.22					

Table 11: Multinomial Logit Estimation: Analyst Forecast Dispersion

Table reports marginal effects from a multinomial logit estimation. The four possible outcomes in the estimation are common equity, preferred equity, public debt and private debt. Panel A reports marginal effects for common equity and preferred equity while Panel B reports marginal effects for public debt and private debt. Forecast Surprise is the analyst forecast surprise, Price to NAV is the consensus price to NAV ratio. Growth is the firm's consensus long term growth estimate and Market to Book is the firm's market to book ratio. Fixed Charge Cov. is the fixed charge coverage ratio and Default Spread is the spread between 10-year BBB and 10-year Treasury rates. Sec Debt to Gross Prop is the ratio of the secured debt to gross property value and Rated is a dummy variable taking the value one if the firm has rated debt outstanding. FFO Pay Out is dividends paid divided by funds from operation and Size is the natural log of the firm's market capitalization. Mean Return is the average monthly return on the firm's equity in the previous year and Leverage is the total debt plus preferred equity divided by total capital. NOI to Gross Property is the ratio of net operating income to the firm's gross property and Interest Difference is the firm's weighted average interest rate minus the yield on 10-year BBB debt.

Panel A: Equity Issues						
Variable	Common			Preferred		
	Marginal Effect	Std Error	Z	Marginal Effect	Std Error	Z
Forecast Dispersion	-17.0381	25.6050	-0.67	59.6945	21.9510	2.72
Price to NAV	0.5032	0.1162	4.33	0.0743	0.1389	0.53
Growth	0.0436	0.4617	0.09	-0.3130	0.5670	-0.55
Market to Book	-0.0024	0.0118	-0.2	-0.0008	0.0135	-0.06
Fixed Charge Cov.	0.0196	0.0128	1.53	-0.1103	0.0357	-3.09
Default Spread	-1.8836	3.2031	-0.59	17.6221	3.8891	4.53
Sec Debt to Gross Prop	0.0670	0.1070	0.63	0.6073	0.1258	4.83
Rated	-0.0722	0.0431	-1.68	0.1290	0.0453	2.85
FFO Pay Out	0.1639	0.0826	1.98	-0.4157	0.1264	-3.29
Size	-0.1368	0.0180	-7.61	-0.1027	0.0210	-4.89
Mean Return	6.5581	1.3211	4.96	0.9219	1.3870	0.66
Leverage	0.4147	0.2092	1.98	-1.1683	0.2888	-4.05
NOI to Gross Prop	3.1762	1.1140	2.85	-1.3053	1.2097	-1.08
Interest Difference	4.3003	1.9041	2.26	9.2126	2.5590	3.6
Panel B: Debt Issues						
Variable	Public Debt			Private Debt		
	Marginal Effect	Std Error	Z	Marginal Effect	Std Error	Z
Forecast Dispersion	-54.6889	33.7220	-1.62	12.0325	22.507	0.53
Price to NAV	-0.0598	0.1472	-0.41	-0.5177	0.13715	-3.77
Growth	-1.5295	0.6072	-2.52	1.7990	0.54335	3.31
Market to Book	0.0062	0.0215	0.29	-0.0031	0.01033	-0.3
Fixed Charge Cov.	0.0586	0.0166	3.53	0.0320	0.01331	2.41
Default Spread	-1.5374	3.9919	-0.39	-14.2011	3.58072	-3.97
Sec Debt to Gross Prop	-0.8916	0.1656	-5.38	0.2173	0.11184	1.94
Rated	0.1531	0.0524	2.92	-0.2099	0.04939	-4.25
FFO Pay Out	0.3128	0.1076	2.91	-0.0609	0.0846	-0.72
Size	0.1556	0.0215	7.22	0.0839	0.02165	3.88
Mean Return	-6.7821	1.3777	-4.92	-0.6979	1.07653	-0.65
Leverage	0.4188	0.2726	1.54	0.3349	0.22459	1.49
NOI to Gross Prop	-2.2928	1.4127	-1.62	0.4219	1.18599	0.36
Interest Difference	-6.4606	2.4206	-2.67	-7.0522	2.07251	-3.4

No. of Obs

1081

Wald $\chi^2(42)$

431.02

Pseudo- R^2

0.22