Valuation Effects of Debt and Equity Offerings

by Real Estate Investment Trusts (REITs)

Jennifer Francis
(Duke University)

Thomas Lys
(Northwestern University)

Linda Vincent
(Northwestern University)

This paper provides new evidence on capital structure decisions. We focus on real estate investment trusts (REITs) because they pay no or minimal taxes and are required to pay out 95 percent of their taxable income as dividends. As a result, REITs have no tax advantages of debt and, because of the dividend payout requirement, REITs access the capital markets more frequently than other firms. By eliminating the tax benefits of debt as an explanation for capital structure choice, we can focus attention on alternative explanations, specifically asymmetric information and agency costs. Our panel data set of REIT offerings also controls for factors that would otherwise differ across industries. In this unique setting, we expect managers' private information about their firm's growth and investment opportunities to be revealed through offering decisions. Our finding that growing REITs with positive net present value investment opportunities access more external financing than stagnant REITs with poor investment opportunities is consistent with a signaling argument, and is inconsistent with an agency cost explanation that managers seek new capital to advance their personal goals. We observe more favorable market reactions around offerings (both debt and equity) made by REITs with better investment opportunities relative to REITs with lesser investment opportunities further supporting the signaling explanation. We note, however, that although our preliminary evidence indicates that the reaction to REIT equity offerings is more favorable than the reaction to industrial equity offerings documented in prior research, investor reaction to REIT equity offering announcements remains negative. This result suggests that signaling does not dominate all other arguments in explaining REIT equity issuances. However, taken as whole, we believe the results are consistent with signaling being an important determinant of both the offering decision (whether to offer, and, if so, how much) and investors' reactions to these offerings.

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1. Introduction

Prior research documents that investors react negatively, on average, to announcements of

seasoned equity offerings (Asquith and Mullins [1986]; Masulis and Korwar [1986]; Jung, Kim and Stultz

[1996]) and react either weakly negatively or not at all to announcements of debt offerings (Mikkelson

and Partch [1986]; Eckbo [1986]). Despite extensive theoretical and empirical work, competing

explanations remain for these empirical results, as well as for related results concerning the determinants

of firms' choice of debt versus equity. Our study re-examines, over time, the determinants of capital

structure changes and investor reactions to offering announcements for a set of firms – real estate

investment trusts, or REITs – which is uniquely able to shed light on certain theories of capital structure

choice. Because the special features of REITs, which we exploit in our tests, are a function of their

institutional structure, we describe this structure before summarizing our predictions and results.

The U.S. Congress authorized REITs in 1960 to provide a means both for small investors to make

long term, passive (but still liquid) investments in real estate ownership and financing, and for the real

estate entity to access U.S. capital markets. REITs are authorized pass-through entities for tax purposes if

they meet certain requirements;[1] in particular (during the period of our sample), a tax qualified REIT must

pay out at least 95% of its taxable net income as dividends, in which case no taxes are paid at the trust

level, but taxes are paid at the shareholder level on the dividends received.[2] Although tax arbitrage is one

of the main explanations for firm's choice of capital structure (e.g., Myers 1984), REITs, as pass-through

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[1] A REIT that fails to qualify under the Internal Revenue Code as a pass-through entity must pay federal taxes on all taxable income before paying out any dividends.

[2] In addition, a tax qualified REIT must: have at least 100 shareholders with no more than 50% of the shares held by five or fewer individuals; derive at least 75% of annual gross income from passive investments in real estate or real estate financial instruments, exclusive of gains on sales; and not own more than 10% of the voting securities of a company which is not a REIT or a qualified REIT subsidiary (a company which has been wholly owned by a REIT since the subsidiary's inception).

entities, enjoy no tax advantages of debt at the firm level. By eliminating the tax explanation for capital structure choices, we can examine other explanations for capital structure without the confounding effects of tax considerations. In addition, the high dividend pay-out requirement may constrain a REIT's ability to generate sufficient internal funds to support its growth initiatives. Although the degree to which REITs are cash constrained relative to nonREIT firms is an empirical question (to be explored), we have evidence that REITs access capital markets more frequently than most industrial firms.

These REIT characteristics have several potential implications for the determinants and consequences of REIT offerings. The first is that investors should not infer uniformly adverse information from REIT offering announcements based on asymmetric information theories predicting declines in share prices to *any* unanticipated external financing do not apply (Miller and Rock [1985]). In fact, the potential shortage of internal funds suggests that debt and equity offerings may convey positive information about the REIT's growth strategies. Together these features suggest that examination of REITs' offering decisions should permit a sharper distinction (than in previous research examining industrial firms' offerings) between the abilities of agency theories and of asymmetric information theories to explain these decisions.

The unique REIT characteristics lead us to predict an upward shift in the market reactions to REIT offerings (both equity and debt) measured relative to the market reactions documented in prior research for nonREIT offerings. This upward shift is predicated on the argument that because REITs are constrained by the dividend payout requirement to seek external financing if they wish to exploit new investment opportunities, we expect announcements of offerings to convey positive information about managers' intentions to exploit new investment opportunities. However, if managers instead seek financing either to invest in poor investment projects or to obtain funds for discretionary uses, we would expect to observe negative reactions to both debt and equity offerings. Given the absence of tax advantages we further expect that while the ordering of previously documented reactions to debt and

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equity offerings will be preserved (debt more favorable than equity, consistent with the Myers and Majluf [1984] pecking order theory), the gap between them will narrow because there are smaller benefits to debt offerings for REITs than for nonREITs.

We test these hypotheses on a sample of 997 debt and equity offerings made by 127 REITs over 1992-1997. The typical sample REIT made eight offerings (four equity, three debt, and one combined) over this period. In addition to providing a significant number of offerings concentrated in a short period, the REIT offerings are economically significant, with mean equity (debt) proceeds of $87 ($83) million per offering or 22% (14%) of the equity market value of the REIT at the end of the fiscal year preceding the offering.

Consistent with our predictions, preliminary findings indicate that investors' average reactions to REIT debt and equity offerings (+0.5% and –0.4%, respectively, significant at the $p = 0.05$ level or better) are more positive (or less negative) than previous studies' documentation of the average market reactions to industrial firms' debt and equity issues (which range between -0.4% and zero for debt, and between –2.3% and –3.6% for equity).[3] These data also indicate that investors prefer debt to equity, and as expected, the differential between debt and equity appears narrower for REITs than for nonREITs. Analysis of the cross sectional determinants of REITs' offering decisions provides further support for the hypothesis that growing REITs seek external financing when they wish to take advantage of positive net present value projects, and that more levered REITs finance a greater portion of their needs with equity than with debt.

The rest of the paper is organized as follows. Section 2 summarizes the explanations and empirical results of prior studies of industrial firms' offering decisions and the market reactions to their offering announcements. Section 3 describes the sample. Section 4 reports the market reactions to REIT

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[3] Because we do not have access to the data from prior work, we cannot statistically test the differences in reactions. One of our extensions involves collecting a data set of nonREITs on which to measure and compare these projections.

debt and equity offerings, and contrasts them with the market reactions documented in prior research for industrial firms' debt and equity offerings. Section 5 discusses the results of cross sectional tests of factors explaining REIT offering decisions and section 6 examines cross sectional determinants of the market reactions to announced offerings. Section 7 summarizes our findings to date, and describes planned extensions.

2. Theories of Debt and Equity Issuance

In this section we discuss the relation between the main theories proposed and tested in prior studies' examinations of debt and equity offerings by industrial firms, and discuss their applicability to REIT debt and equity offerings.[4]

2.a. Overview of theories

Explanations for managers' choice of debt or equity offerings fall into two general categories: asymmetric information, in which managers are assumed to know more about the firm's prospects than outsiders, and agency costs. There are several aspects to the asymmetric information hypothesis. The pecking order theory (Myers [1984]; Myers and Majluf [1984]) maintains that managers maximize the wealth of existing shareholders and prefer to use internal funds, external debt and external equity in that order. This theory predicts firms issue equity when they lack internal funds and have limited (or no) remaining debt capacity. Equity offerings are least preferred because managers signal that they believe their share price is over-valued by issuing equity and so would not do so if they had alternatives higher in

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[4] Several papers summarize the theories of capital structure and discuss the related incentives for managers to change the capital structure; therefore, we do not discuss these explanations in detail. See, for example, Asquith and Mullins [1986]; Eckbo [1986]; Masulis and Korwar [1986]; Jung, Kim and Stultz [1996].

the pecking order.[5] Consequently, shareholders are expected to react negatively to equity issuances. However, by appropriately timing the equity issuance, Stein [1996] argues that *if* the stock is overvalued *and if* the market underreacts to new equity issues (as shown by Loughran and Ritter [1995] and Spiess and Affleck-Graves [1995]), then management can maximize the interests of existing shareholders by issuing equity.

In another aspect of the asymmetric information hypothesis, Miller and Rock [1985] argue that any unexpected external financing, either debt or equity, implies that management has lower than expected operating cash flows.[6] This argument predicts that investors react negatively to both equity and debt offering announcements. Galai and Masulis [1976], on the other hand, model a setting where managers signal information about their expectations for increased future earnings – and, therefore increased debt capacity – by issuing debt. Their model predicts a positive investor response to announcements of debt offerings.

The agency cost explanation for debt and equity offerings posits that managers pursue their own interests at the expense of shareholders. For example, in order to increase the size of the firm, managers may invest in negative net present value projects, however financed. Managers may also issue too little debt in order to avoid increased risk, prompting a negative reaction to equity offerings. On the other hand, whereas the asymmetric information model of Myers [1984] shows the advantages of financial slack, too much financial slack can result in managers over-investing in negative net present value projects rather than distributing the free cash flows to investors (Jensen [1986]). In this case, increased debt may provide the discipline necessary to prevent managers from such over-investment by imposing contractual interest and principal payments. This explanation suggests more positive investor reactions to

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[5] Lee [1997] examines insider stock trades to investigate whether managers of issuing firms knowingly sell overvalued shares. His results support the prediction that managers who sell shares prior to equity offerings that subsequently underperform peer securities knowingly sell overvalued stock.
[6] One of our extensions of the current research is to estimate the unexpected offerings by REITs in order to test whether investor reaction differs between expected and unexpected offerings.

debt offerings by firms with excess cash flow than to debt offerings by firms that are more cash constrained. Issuance of either debt or equity when prompted by the availability of positive net present value projects is expected to elicit a positive investor reaction.

Jung, Kim, and Stultz's [1996] empirical investigations of these competing explanations indicate that firms issuing equity are of two types: Type 1 firms with both debt capacity and valuable investment opportunities that seek financing to grow profitably; and Type 2 firms without good investment opportunities but with debt capacity. Type 1 firms are inconsistent with the pecking order theory, since this explanation would argue that these firms should issue debt not equity. Type 2 firms provide support for the agency theory, since absent agency costs, one would not expect Type 2 firms to issue equity at all. Consistent with the equity issues of Type 2 firms conveying information about managerial exercise of discretion, Jung et al. find a negative reaction to these firm's equity offering announcements. They conclude that the agency explanation is more consistent with both the observed characteristics of equity offering firms and the market reactions to these firms' offering announcements.

Two additional factors believed to affect firms' capital structure decisions are taxes and financial distress costs. The tax explanation is that debt issues are tax advantaged relative to equity issues, with the value of the interest tax shield increasing in the firm's marginal tax rate (Mackie-Mason [1990]). In terms of market reactions, and holding all other factors constant, the tax explanation suggests more positive market reactions to debt offerings than to equity offerings, and a greater incidence of (and larger reactions to) debt offerings by high marginal tax rate firms than by low marginal tax rate firms. The financial distress explanation, which is based on debt increasing the likelihood of bankruptcy, predicts that distressed firms are less likely to issue debt than are financially healthy firms, and that the market

reactions to distressed firms' debt issues will be less favorable (more unfavorable) than the market reaction to healthy firms' debt offerings.[7]

To summarize, the asymmetric information theories generally predict negative reactions to both equity and debt issues, with the pecking order theory further hypothesizing a more unfavorable reaction to equity than to debt. However, the timing theory predicts a positive reaction to equity issues under certain conditions of market inefficiency (it does not appear to speak to debt issues). Agency theories predict positive (negative) reactions to new equity offerings by firms with good (poor) investment opportunities.. The tax explanation predicts positive reactions to new debt offerings, while financial distress theories posit negative reactions to debt offerings by distressed firms.

2.b. Applicability of prior research to REITs

At least two features of REITs distinguish them from the industrial firms which are the focus of many of the empirical tests of the aforementioned theories. First, as pass-through entities for tax purposes, REITs, unlike tax-paying industrial firms, enjoy no direct no tax advantages from issuing debt relative to new equity issues.[8] This difference implies that tax advantages cannot explain any observed positive reaction to REIT debt offerings, or any positive differential between the reactions to REIT debt versus REIT equity offerings.

Second, to achieve this pass-through status, REITs must pay out 95% of their taxable income as dividends.[9] This requirement means that REITs may face constraints on internally generated funds and

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[7] Research which compares the tax advantages of debt to the agency costs, costs of financial distress, and information costs of debt, concludes that unexpected debt issues imply positive expectations about the firm's earnings prospects (see, for example, Jensen and Meckling [1976], Ross [1977] and DeAngelo and Masulis [1980]). In general, these optimal capital structure studies do not find that market reactions to debt offerings are cross-sectionally correlated with the tax rates (or value of the tax shields) of offering firms.
[8] Theoretically, although perhaps not practically, if REITs and investors face the same marginal tax rates and if REITs pay out all after tax income as dividends, investors are indifferent as to whether the REIT borrows or the investor does the borrowing.
[9] During the sample period, the required pay-out percentage was 95%. This was changed to 90% for tax years

on free cash flows relative to firms without dividend payout requirements. The dividend payout requirement also substitutes, to some degree, for the disciplining effects of new debt. Thus, it is not clear that asymmetric information theories which generally predict declines in share prices in response to *any* unanticipated external financing apply to REITs because institutional features dictate that these firms may not have the necessary internal funds to support future growth. However, the view that managers choose to issue equity when their stock is overvalued, thus leading to negative price reactions to equity offerings, may apply to REITs since these entities can choose to issue debt.

The need for externally generated funds to support future growth suggests that new debt and equity offerings may convey information about REIT managers' intentions to grow the firm.[10] We would therefore expect to observe high growth REITs accessing the capital markets more than low growth REITs. Agency theories would further suggest that market reactions to REIT offerings would be positively correlated with their investment opportunities: those with positive net present value projects are expected to seek external financing to the benefit of shareholders, whereas REITs with limited investment opportunities who raise funds (i.e., for managerial discretion purposes) do so to the detriment of shareholders.

In summary, predictions of the timing and agency theories for firms' debt and equity offerings apply to REITs, as do the financial distress arguments predicting more negative reactions to the debt offerings of distressed versus healthy firms. The tax explanation does not apply to REITs. Finally, while the pecking order preference for debt over equity may apply to REITs, it is not obvious that investors will bid down share prices in response to *all* offering types. In fact, the need for externally generated funds to support growth due to the dividend payout requirement, suggests that there may be no negative information consequences to the REIT for accessing the capital markets. Thus, as applied to REITs, the

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beginning after 2000.
[10] Stated another way, absent external financing, REITs have limited means to fund future purchases of real estate properties.

strongest prediction of the pecking order theory is that market reactions to equity offerings will be less favorable (more unfavorable) than the market reactions to debt offerings. However, in contrast to the prediction for nonREITs, both reactions could be positive.

If REITs access the capital markets (using debt or equity) in order to exploit investment opportunities, we would expect to observe: (1) a greater likelihood and a larger size of offerings made by REITs which are growing and which have positive net present value projects compared to REITs which are stagnant and have poor investment opportunities; and (2) market reactions to REIT offerings that are positively correlated with growth and investment opportunities. The counter-argument – that REIT managers issue debt or equity for their own discretionary purposes – predicts a negative relation between the probability and magnitude of REIT offerings and market reaction to new REIT offerings.

In deciding whether to issue debt or equity (or some combination), we expect that REIT managers consider bankruptcy costs. We expect that financially healthy and less risky REITs are more likely to issue debt than equity, relative to distressed and volatile REITs. Similar to industrial firms, the financial distress theory predicts a negative price reaction to distressed firms' announcements of debt offerings. We do not expect the degree of a firm's financial distress to be correlated with the market reactions to its equity offerings.

3. Sample

Our sample consists of the debt and equity offering-related announcements made by 127 equity REITS during 1992-1997.[11] We use announcements to identify offerings (as opposed to other sources of

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[11]   The REIT market consists of three types of REITs: equity REITs specialize in property ownership (such as office buildings, apartment complexes and hotels) and must have 75% of total assets in properties; financial REITs specialize in providing financing for real estate projects and hold at least 75% of invested assets in mortgages; and hybrid REITs have both equity and financing interests and do not meet either 75% criterion. The majority of publicly-traded REITs are equity REITs. In total, 129 of the 139 publicly-traded equity REITs with CRSP returns

offering information, such as industry publications) because our investigation of the market response to

offering disclosures requires precise event dates. We search the Dow Jones News Retrieval Service for

all announcements made by the issuing firm in the financial press, and read these disclosures to determine

those that relate to debt and seasoned equity offerings.[12] This source of announcement dates (usually

PRNEWSWIRE, Business Wire or Reuters) differs from most prior offering studies which use pre-1985

offering announcements reported in *The Wall Street Journal Index*; *The Wall Street Journal* stopped

publishing these announcements in 1984. We exclude from the sample announcements of exclusively

refinancing events. However, where the proceeds of a new debt issuance exceed the amount of debt it

replaces, we include this disclosure in the sample and measure the offering size as the increment in the

debt facility.[13]

     Table 1 provides descriptive information about the size, debt capacity and financial performance

of the sample REITs. The average sample REIT has a market value of $531 million or 1.6 times its book

value of equity, earns income before interest and taxes of 6% on its total assets of $685 million, and has

an average ratio of debt to book equity of one. Mean and median values of all variables are similar,

suggesting no obvious skewness in these data. However, as the standard deviations illustrate, there is

considerable variation across the sample REITs in terms of size, debt capacity and financial performance.

     Table 2 provides descriptive data on the debt and equity issues identified by our coding of the

announcement disclosures. We categorize offerings in three broad classifications: equity, debt, and

combined. The combined offering category is used when the announcement indicates a simultaneous

offering of both debt and equity, as is often the case if a firm discloses its filing of a shelf registration

with the SEC. Panel A shows the frequency of offerings, by type, across the sample years. In total, the

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made at least one offering during 1992-1997. Two of these firms do not have financial statement data available, reducing our sample to 127 REITs.

[12] We exclude announcements of initial public offerings.

[13] These observations are not common, but when they do occur they typically reflect announcements of increases in credit facilities.

127 REITs made 997 offerings over the six year period, with panel A showing 811 (over 80%) of these offerings concentrated in 1995-1997. The data also indicate monotonic increases in the number of offerings and the proceeds of these offerings between 1992 and 1997. In particular, we observe that debt (equity) offerings increase from 8 (23) in 1992 to 112 (188) in 1997, with aggregate proceeds increasing from $334 million ($816 million) to $9 billion ($12 billion), consistent with the increase in the number of REITs over this period.

Panel B reports information on the mean dollar proceeds per REIT for each of the sample years. Together with the results in panel A, these data indicate that not only did the sample REITs increase their total offerings, but the amount of external capital raised per REIT increases each year. Finally, panel C provides summary information about REIT management's stated use of the proceeds, collected from the offering announcements. Because some disclosures list multiple uses of the proceeds, the sum of the observations in panel C exceeds the total number of offerings. (In most cases it is also not possible to rank the stated uses.) Overall, these data indicate that the proceeds of many equity and debt offerings are used to fund acquisitions or for refinancing purposes.

Table 3 reports a detailed breakdown on the type and dollar amount of the offerings. Within the equity category, we distinguish between common stock, preferred stock, convertible preferred shares, operating units,[14] and combination or unspecified equity issues (e.g., a shelf registration with both common stock and preferred stock components, or an announcement indicating only that the company will issue equity). Similarly, we classify debt issues by the type of debt security or facility offered: convertible bonds, tax exempt bonds, notes, mortgage related debt, new credit facilities, and combination or unspecified debt issue (e.g., the simultaneous announcement of a notes issue and a new credit facility, or an announcement that the company plans to issue some unspecified type of debt).

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[14] Operating units are similar to common stock offerings. They apply to REITs structured as Umbrella Partnership REITs (UPREITs). For tax purposes, operating units represent equity interests in the limited UPREIT that holds the REIT assets.

Table 3 shows that the typical REIT made eight offerings over the sample period, consisting of four equity offerings (with median offering size of $67 million), three debt offerings (with median offering size of $59 million), and one combined offering. Over 70% of the equity offerings (357 of 490) reflect the issuance of common stock, with preferred stock a distant second (53 or 11%). Nearly 40% of debt issues represented note offerings (161 of 406), followed by announcements of new credit facilities (143, or 35%). Because the majority of the sample equity issues are for common stock, we combine the subcategories of equity for purposes of our empirical analyses. In addition, based on the results of unreported tests which find no significant difference between the market responses to credit facilities and to other types of debt (with the exception of convertible debt which we discuss later), we combine the seven sub-categories of debt.

Our examinations of the market responses to REIT offering announcements (sections 4 and 6) focus on the announcements of the individual offerings made by each REIT. In contrast, our analysis of the determinants of REIT offering decisions (section 5) focuses on the aggregate dollar offerings made by each REIT in each year T=1992,…,1997, and the proportion of these annual funds raised through equity offerings. We adopt the notation T to refer to the year in which an offering is made, and use t to subscript the announcements of the specific offering dates in year T.

4. Market Reactions to REIT Offerings

As noted in section 3, we identify announcements dates from corporate disclosures on the Dow Jones News Retrieval Service. The announcements reflect different events (e.g., SEC shelf registration or filing, offering and closing) and there are multiple announcement dates for some offerings (e.g., an issue for which we have both an SEC filing date and an offering date). Although we can order the announcements in chronological order, we do not believe that the market response to the earliest date is necessarily the appropriate measure of investors' reaction to the offering because the early disclosures are

frequently imprecise about the details of the offering. For example, management may announce on day t

its intent to raise equity capital, but does not specify the timing or the amount of the offering – that

information is announced later. Therefore, for sample offerings with multiple announcement dates, we

calculate the absolute returns over days (t-1,t) for each candidate event date, and choose as the test event

date the one with the largest absolute return (the "maximum date").[15] In subsequent tests where we

require a single event date for each offering, we use this maximum date.

Table 4 reports mean cumulative raw returns over days (t-1,t) for the various event dates: panel

A shows this breakdown for the different types of equity offerings and panel B shows similar data for the

sample debt offerings.[16] Consistent with prior results on the equity offerings of non-REIT firms, we

generally find negative reactions to these announcements, with the most unfavorable reactions observed

around offering and closing dates. For debt issues (panel B), we find no significant reactions to any type

of debt issue except for convertible debt offerings where we observe a reaction of –1.85% (significant at

the 0.05 level).[17]

Table 5 summarizes 2-day raw returns and abnormal returns to equity and debt offerings around

the maximum date.[18] For equity issues, the mean and median raw response is -0.4% of share price

(significant at the 0.01 level), and the mean and median abnormal return responses are -0.7% and –1.0%,

respectively (also significant at the 0.01 level). These reactions appear less negative than the -2.7% to

–3.6% mean market reactions to equity offerings of industrial firms documented in prior research and

summarized in the Appendix; however we cannot verify that statistically. The less unfavorable reactions

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[15]   In future tests, we will accumulate returns over the period from the earliest through the latest announcement.
[16]   We also examined abnormal returns, measured as security j's raw return minus the return on the S&P 500 on
that day. Unless noted otherwise, results using abnormal returns are similar and are not reported. We prefer raw
returns because there are insufficient time series observations to estimate REIT betas for many of the REITs in our
sample.
[17] The –1.85% reaction is consistent with prior research (Dann and Mikkelson [1984]; Eckbo [1986]) which
documents reactions to convertible debt offerings of between –1.2% and –2.3%.
[18] For the 490 equity offerings, the majority (73%) of the maximum dates are either offering dates or closing dates.
Nearly 97% of the 406 maximum debt offering dates reflect closing or offering dates.

to REIT equity offerings versus non-REIT equity offerings would be consistent with REIT equity issuances conveying relatively more positive information than nonREIT firms' equity issuances. We hesitate, however, to draw strong inferences at this point both because of the nearly ten year gap between the sample periods of the REIT offerings versus the pre-1985 non-REIT offerings examined in prior research, and because of the potentially large cross-sectional correlation in returns for our sample REITs. In future work, we will address these issues by comparing the market responses of the sample REIT equity offerings with a sample of non-REIT equity offerings over the same time period, 1992-1997, and by adjusting for cross sectional correlation in these data.

Turning to the debt issues of the sample REITs, the results in Table 5 show significantly (at the 0.05 level) positive 2-day raw returns to debt offerings, with an average reaction of +0.47%. Results based on 2-day abnormal returns show no significant reactions to debt offerings. Excluding the 15 convertible debt offerings, the remaining debt issues have mean raw returns of 0.54% (significantly different from zero at the p = 0.02 level) and mean abnormal returns of 0.34% (significance level is marginal at p = 0.12). Our findings of significant positive market reactions to REITs' straight debt issues contrast with the negative or zero reactions to industrial firms' straight debt issues documented in prior research (see Appendix). As with equity offerings, we conjecture that REIT debt issues convey information about these firms' plans for growth and their investment opportunities. Similar to the proposed extension contrasting industrial firms' equity issues during 1992-1997 to the sample REIT equity issues (discussed above), we plan to investigate the differences in the market reactions to REIT and non-REIT debt offerings over the same period.

In summary, we find preliminary indications that investors react more favorably to REIT debt and equity offerings than they do to industrial firms' debt and equity offerings, respectively, although we are not yet able to confirm the statistical significance of the differences in the reactions. These preliminary results are broadly consistent with the hypothesis that REIT offerings (both debt and equity) convey

favorable information about the REIT's intentions to take advantage of positive net present value investment opportunities. We also find that although investors appear to respond more favorably to REIT debt offerings than they do to REIT equity offerings, there also appears to be a narrower gap between the market reactions to REIT debt versus equity offerings (-0.4 versus +0.5, or about a 1% absolute differential) than between industrial debt versus equity offerings (where the minimum differential is about 2.5%). The smaller gap between reactions to REIT debt and REIT equity issues is consistent with the argument that REIT debt offerings do not convey information about tax advantages which may increase the positive reactions to industrial firms' debt offerings. We further note that the positive reaction to REIT debt offerings and the negative or insignificant reaction to industrial firms' debt offerings suggest that the positive signaling aspects of the offering announcement (documented by the first result) appear to dominate any positive effects that tax and managerial discipline have for industrial firm debt. However, in the case of equity offerings, these signaling aspects are not strong enough to cause investors to react positively to these announcements. All of these inferences are preliminary and conditional on further testing.

The remaining analyses investigate whether proxies capturing the determinants of REIT offering decisions are consistent with the hypothesis that growing REITs with good investment opportunities seek external financing, and whether these same characteristics explain cross sectional differences in market reactions to REIT offerings. We also hypothesize and test for factors affecting REITs' choice of debt versus equity, and examine whether these factors also explain market reactions to debt offerings, and separately, to equity offerings.

5. Determinants of REIT Offering Decisions

Prior studies' examinations of industrial firms' offering decisions either compare characteristics of issuing firms versus non-issuing firms (e.g., McLaughlin et al. [1996]) or contrast characteristics of

firms issuing equity versus those issuing debt (e.g., Jung et al. [1996]). We combine and extend these

models of the offering decision in two ways: (1) we model the joint decision of whether to access the

capital markets and how much to raise; and (2) we then examine the decision of how much of the total

capital to be raised is funded by debt and how much by equity. We argue that these decisions are

sequential, but related, with REITs first assessing their total capital needs (for the year) and then

determining how best to raise those funds. Our model also incorporates any endogeneity between the size

of the offering and the offering type. In addition, compared to prior work, we have a unique set of panel

data that enables us to analyze the offering decisions over time.

As described in section 2, we model the decision to offer, and the magnitude of the offering, as a

function of intended growth and investment opportunities, as well as of financial slack. Because of

potential constraints on internal funds due to the dividend payout requirement, we expect REITs that wish

to grow must access the capital markets, with larger growth requiring larger dollar offerings. We proxy

for REIT$_j$'s intended growth in year T as the percentage change in its total assets for the prior year, Δ

ASSETS$_{j,T-1}$. This proxy assumes that REITs which significantly increased their asset base last year are

likely to continue that trend in the current year.

Assuming REIT managers have incentives to grow by investing in positive net present value

project, we expect that the size of the total offerings is positively associated with the REIT's investment

opportunities.[19] We use actual returns over year T, RET$_T$, to proxy for management's expectations of

investment opportunities, assuming that at time t managers have perfect foresight about the market's

valuations of these investments.

Not only are REITs constrained by the requirement that they must pay out 95% of their taxable

income in the form of dividends, but those that have committed to an even higher dividend pay out rate

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[19]   A finding that REIT offerings are not positively correlated with investment opportunities would lend support for
the agency explanation. In this case, we would also expect to observe negative reactions to these announcements.

have even less financial slack.[20] We expect that REITs that pay out such excess dividends are likely to seek more external financing than are REITs without this additional constraint on their internally generated funds. Excess dividends are measured as the difference between the total dollar amount of dividends paid out in year T-1 and 95% of total taxable income in year T-1, scaled by total dividends in year T-1, $EXCESS\_DIV_{j,T-1}$.[21] The average REIT in the sample paid out excess dividends of 35%.

Having estimated the amount of external funds they require for the year, we conjecture that REIT management next determines how much of the capital needs should be funded with debt versus equity. We model the equity portion decision as a function of debt capacity, financial distress costs, and offering size. According to Myers [1984], more highly levered firms seek a greater portion of new equity financing than of new debt financing. Anecdotal evidence in the financial press also suggests that REITs attempt to manage the proportion of debt in their capital structure to avoid substantial deviations from the industry norm due to concerns about debt ratings. We estimate the debt capacity of the REIT as the its debt-to-book equity ratio measured at the end of year T-1, $LEVG_{j,T-1}$.[22]

Based on previous studies' arguments that increases in leverage increase the expected costs of financial distress, we expect that firms with higher pre-offering measures of financial distress (measured as lower return on assets and greater security return volatility) seek a greater portion of new equity financing than firms with minimal financial distress concerns. We measure REITj's return on assets in year T-1 as its earnings before interest and taxes in year T-1 scaled by its total assets at the end of T-1,

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[20] REITs have historically paid out relatively large dividends. According to industry sources (e.g., publications of the National Association of REITs) many REITs would like to decrease their dividends, but concern about negative valuation implications of a dividend cut, or even a decreasing rate of dividend growth, prevent most REIT managements from changing dividend policies.

[21] Publicly-traded REITs are required to report this information in their financial statements.

[22] Given that our sample comprises virtually all REIT firms, and because our sample includes no other industries, we do not industry-adjust this measure. In separate tests (not reported) we find similar results using an industry-adjusted leverage measure.

$ROA_{j,T-1}$. Security return volatility is proxied by the standard deviation of REITj's daily stock returns over year T-1, $\sigma(RET)_{j,T-1}$

We relate the two decision models by including the predicted value of the offering size, $OFFER_{j,T}^{PRED}$, in the percent-equity decision; this linkage controls for endogeneity between offering type and offering size.[23]

Formally, we estimate the following equations:

$$OFFER_{j,T} = \alpha_0 + \alpha_1 \Delta ASSETS_{j,T-1} + \alpha_2 RET_{j,T} + \alpha_3 EXCESS\_DIV_{j,T-1} + \varepsilon_{j,T} \qquad (1)$$

$$\%EQUITY_{j,T} = \beta_0 + \beta_1 LEVG_{j,T-1} + \beta_2 ROA_{j,T-1} + \beta_3 \sigma(RET)_{j,T-1} + \beta_4 OFFER_{j,T}^{PRED} + \omega_{j,T} \qquad (2)$$

where	$OFFER_{j,T}$	=	the aggregate dollar amount of firm j's offerings in year T scaled by the market value of equity at the end of year T-1. OFFER equals zero if the firm made no offerings (of any type) in year T.
$\Delta ASSETS_{j,T-1}$	=	firm j's total assets at the end of year T-2 minus its assets at the end of year T-1, divided by total assets in year T-2.
$RET_{j,T}$	=	firm j's cumulative stock return over year T.
$EXCESS\_DIV_{j,T-1}$	=	total dividends firm j paid in year T-1 minus the required dividend payment in year T-1 (equal to 95% of taxable income in year T-1), scaled by total dividends paid in year T-1.
$\%EQUITY_{j,T}$	=	if OFFER > 0 then %EQUITY = firm j's total equity offerings in year T divided by the total offerings in year T (a value of zero implies that the firm issued only debt); if OFFER = 0 then that firm-year observation is deleted.
$LEVG_{j,T-1}$	=	firm j's ratio of debt to book value of equity at the end of year T-1.
$ROA_{j,T-1}$	=	firm j's return on assets in year T-1.

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[23] Jung et al. [1996] report that their sample equity offerings are considerably smaller than debt offerings, with mean (median) gross proceeds of $48 ($28) million for equity issues and $140 ($100) million for bond issues. As a percent of the market value of equity, mean and median equity (debt) issues were 15% and 13% (24% and 13%).

$\sigma(RET)_{j,T-1}$ $=$ the standard deviation of firm j's stock returns in year T-1.

$OFFER_{j,T}^{PRED}$ $=$ the predicted value of OFFER for firm j and year T determined from the estimates obtained from (1).

We use all available firm-year observations to estimate the tobit model specified in equation (1); we also report results for the OLS regression of (1). For the subset of firm-year observations that made at least one offering in a given year, we estimate equation (2) using ordinary least squares procedures.[24] The results of both estimations are reported in Table 6.

For the offer and size of offer decision (Panel A, Table 6), the results show that higher growth REITs with good investment opportunities seek more financing from the capital market than lower growth REITs with poor investment opportunities. The (tobit) coefficients on ΔASSETS and RET are significantly positive (at the $p = 0.01$ and $p = 0.08$ levels, respectively), and indicate that a 10% increase in asset growth (investment opportunities) is associated with a 4% (5%) increase in capital raised as a percent of the market value of equity. Thus, in addition to being statistically reliable, these associations appear to be economically meaningful. However, we do not observe the expected positive relation between excess dividends and offering decisions, rather, we find the opposite: REITs with large dividend commitments seek less external financing than those with small dividend commitments. There are several explanations for this result which we will explore in future work. For example, REITs with a no or limited growth strategy may pay out excess dividends because they have no planned alternative uses for the funds. Alternatively, higher growth REITs may generate such low absolute levels of taxable income and cash flows that the payment of excess dividends may not significantly affect their needs for additional cash.

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[24] Although the raw form of equation (2) is problematic for OLS, the dependent variable is bounded below by 0 and above by 1, precluding a logistic transformation to the dependent variable (i.e., log [$\%OFFER^{-1} - 1$]). Because many of the sample observations take on the extreme values 0 and 1, the transformed variable would be undefined. In unreported tests, we estimated a rank form of the OLS regression (which controls for the non-linearity imposed by the upper and lower bounds) and draw similar conclusions as we do from the raw OLS results.

Turning to the equity versus debt choice (Panel B, Table 6), the results show that debt capacity (LEVG) and predicted offering size are significantly related to the proportion of total offerings representing equity financing. As expected, the results show that highly levered firms are more likely to adjust their capital structure by selecting more equity than debt. In contrast to previous research, we find that larger offerings are more likely to take the form of equity in our sample (see note 21). Neither proxy for financial distress costs (ROA or $\sigma(RET)$) is significant in explaining the debt versus equity decision.

In summary, the results in Table 6 support the prediction that growing REITs seek external financing when they wish to take advantage of positive net present value projects. In contrast to our prediction, we find that REITs with the least financial slack (as proxied by the largest excess dividends) seek more, not less, external funds than REITs with more financial slack. Finally, the results indicate that the most important variables influencing the choice of debt versus equity as the mode of financing are the debt capacity of the firm (with more highly levered REITs choosing more equity) and predicted offering size (with larger offerings taking the form of equity). In future work, we will build a model of expected offerings, which is viable for this sample of REITs because of their relatively (compared to nonREITs) frequent trips to the capital markets. The model will enable us to study the effects of unexpected offerings.

6. Determinants of the Market Reactions to REIT Offerings

In this section we extend the analysis of the associations documented in sections 4 and 5 by examining whether the determinants of REIT offering decisions also explain cross sectional variation in the market reactions to these offerings. Because in some cases we expect different results for debt versus equity issues, we partition the sample offerings by type and perform separate analyses on each sub-sample. Table 7 reports the coefficient estimates and significance levels from the following cross

sectional regression of the 2-day raw return on proxies for growth, investment opportunities, financial

slack, debt capacity, financial distress and offering size:

$$CRR(t\text{-}1,t)_{j,t} = \lambda_0 + \lambda_1 \Delta ASSETS_{j,T\text{-}1} + \lambda_2 RET_{j,T} + \lambda_3 EXCESS\_DIV_{j,T\text{-}1} +$$

$$\lambda_4 LEVG_{j,T\text{-}1} + \lambda_5 ROA_{j,T\text{-}1} + \lambda_6 \sigma(RET)_{j,T\text{-}1} + \lambda_7 SIZE\_OFFER_{j,T} + \zeta_{j,t} \qquad (3)$$

where $CRR(t\text{-}1,t)_{j,t}$ =   security j's cumulative raw return over days (t-1,t), where day t
                                                      is the maximum date for this offering announcement

          $SIZE\_OFFER_{j,T}$ =   log of the offering proceeds

Because multiple offerings by the same REIT in a given year are included as separate

observations in estimating (3) (even though the values of the independent variables are identical across

such issues), there is cross-sectional dependence and correlation across the residuals. To reduce the

severity of these problems, we also estimate a variant of (3) where we measure the dependent variable as

the aggregate 2-day returns around all equity (or all debt) offerings of firm j in year T, $\sum CRR(t\text{-}1,t)_{j,t}$. In

this formulation, each firm enters the sample at most once in a given year with that observation reflecting

the cumulative short term reactions to all of that firm's equity (or debt, depending on the sample partition)

offerings in that year.

Table 7 reports the coefficient estimates and significance levels for the two regressions.[25]

Because the results of the two specifications yield similar inferences, we discuss only the individual

market reaction tests. We do not find consistent evidence that larger growth is associated with more

positive market reactions for either debt or equity offerings. However, we do find strong evidence

(significant at the 0.01 level) that REITs with the best investment opportunities have larger market

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[25]   Results based on excess returns (not reported in the tables) are similar to the raw return results reported.

reactions to their offering announcements. We document no correlation between excess dividends and market reactions to REIT equity offerings, but find that investor reactions to REIT debt offerings are negatively correlated with excess dividends (at the $p = 0.08$ level). Finally, our results concerning the ability of debt capacity or financial distress costs to explain market reactions (to either debt or equity offerings) are weakly positive (in the case of market reactions to equity offering) or nonexistent (in the case of market reactions to debt offerings).

7. Summary of Results and Further Work

This paper provides new evidence on capital structure choice. By focusing on REITs, which have no tax advantages for debt and face internal cash constraints, we identify a setting where we expect management's private information about growth and investment opportunities to be revealed through their offering decisions. Our finding that growing REITs with positive net present value projects access more external financing than stagnant REITs with poor investment opportunities is consistent with this signaling argument, and is inconsistent with the agency explanation that managers seek new capital to support discretionary spending.

The more favorable market reactions observed around offerings (both debt and equity) made by REITs with greater investment opportunities relative to REITs with lesser investment opportunities adds credence to the signaling view of these offerings. We note, however, that while preliminary evidence indicates that the average reaction to REIT equity offerings appears less negative than the reaction to industrial equity offerings documented in prior research, the REIT equity reaction is still negative. This result suggests that signaling does not dominate all other arguments in explaining REIT equity issuances. Taken as whole, we believe the results are consistent with signaling being an important determinant of both the offering decision (whether to offer, and if so, how much) and investors' reactions to these offerings.

We plan to extend this study in several ways. First we plan to extend the time period covered through 2002. As discussed in section 4, we will collect samples of equity and debt offering announcements made by industrial firms over the same sample period examined for REITs, 1992-2002. This extension will control for any over-time structural shifts in the causes and capital market consequences of debt and equity offerings which may have occurred since 1984 (the last year used to identify samples of industrial firm offering announcements).

We also plan to develop more refined measures of the degree to which REITs are financially constrained. Specifically, we will examine the alternative explanations for the unexpected results on the ability of excess dividends paid by REITs to explain offering decisions. Further partitioning of the sample by measures of financial constraints will contribute to the distinction between the asymmetric information and agency cost explanations for both the offering decision and the market reaction to the decision.

Finally, we will develop an expectations model in order to categorize the REIT offerings as expected or unexpected. Our panel data set of REITs, which make relatively frequent trips to the capital markets, provides a unique opportunity to test the difference in market reactions to expected and unexpected offerings.

Table 1
Descriptive Information about the Sample REITs

Variable	# obs.	mean	median	std.dev
Market value of equity ($mil)	127	531.31	368.11	533.19
Book value of equity ($mil)	127	326.16	223.65	355.13
Total assets ($mil)	127	685.38	515.78	703.03
Real estate (gross, $mil)	124	684.97	503.90	663.17
Real estate (net, $mil)	127	613.27	442.76	613.73
Earnings per share	127	1.02	1.11	0.71
Funds from operations per share	115	2.11	2.01	0.88
Debt/book value of equity	127	1.01	0.88	3.61
Debt/market value of equity	127	0.78	0.60	0.61
Interest coverage ratio	116	3.28	2.18	3.36
Market-to-book ratio	127	1.59	1.54	2.19
Price-to-earnings ratio	113	24.36	21.27	17.22
Price-to-funds from operations	114	11.34	11.00	3.48
Earnings-to-price ratio	127	0.04	0.05	0.04
Funds from operations-to-price ratio	115	0.09	0.09	0.03
Return on assets	107	0.06	0.06	0.02

The sample contains all publicly traded REITs with available accounting and stock return data. In total there are 127 REITs with at least one offering over 1992-1997 with available data.

All variables are measured as of the end of fiscal year 1996. Return on assets is earnings before interest and taxes scaled by end of year assets. Funds from operations is roughly equal to GAAP net income plus depreciation and amortization, less any gains/losses on the sale of real property. All other variables are self-explanatory.

Table 2
Summary Statistics on the Sample REIT Offerings, 1992-1997

Panel A: Over-time distribution of REIT sample debt and equity offerings

	Number of offerings				Aggregate proceeds ($ millions)			
Year	Total	Equity	Debt	Combined	Total	Equity	Debt	Combined
1992	31	23	8	n/a	1150.60	816.30	334.30	n/a
1993	49	30	17	2	3241.41	2219.41	1022.00	117.00
1994	106	35	62	9	5255.88	1815.92	3439.96	n/a
1995	220	89	104	27	10147.67	4052.22	6095.45	n/a
1996	256	125	103	28	13620.43	6394.42	7226.01	785.00
1997	335	188	112	35	21052.21	12069.44	8982.77	n/a
All years	997	490	406	101	54468.20	27367.71	27100.49	902.00

Panel B: Mean proceeds per REIT, by year and in total

	Mean proceeds per REIT ($ millions)			
Year	Total	Equity	Debt	Combined
1992	65.95	47.91	16.65	0.00
1993	142.21	89.09	39.72	9.72
1994	155.03	42.16	72.29	38.03
1995	242.35	70.71	58.37	55.20
1996	345.11	95.42	75.17	70.18
1997	457.30	152.85	94.14	109.80
Mean annual $ offerings as a % of the REIT's market value of equity	75.76%	42.23%	28.34%	33.88%
Mean $ offering proceeds as a % of the REIT's market value of equity	32.84%	16.54%	10.65%	10.08%

Panel C: Stated use of offering proceeds

	Number of offerings		
	Equity	Debt	Combined
Growth and acquisition	230	171	18
Refinancing: Equity for debt	295	0	14
Refinancing: Debt for debt	0	196	2
Refinancing: Debt for equity	0	3	0
General corporate purposes	117	60	75
To pay dividends	5	5	0

The sample consists of all debt and equity offerings made by REITs during 1992-1997 identified by our search of announcement disclosures. Information about the dollar amount and stated use of the proceeds are taken from the offering announcements. The sum of the observations in the cells comprising panel C exceed 997 because some offerings state more than one use for the proceeds. Entries in the "Combined" column refer to offerings containing both new equity and new debt issues.

Table 3

Breakdown of Sample REIT Offerings by Type of Capital Raised

	# offerings	# offering per REIT		Proceeds per offering (in $ millions)	
Equity:	total sample	mean	median	mean	median
Equity (unspecified)	48	1.30	1	60.10	60.10
Common stock/beneficial interest	357	3.22	3	87.31	63.38
Preferred stock/depositary shares	53	1.43	1	94.81	95.30
Convertible preferred shares	27	1.23	1	75.74	71.50
Operating units	4	1.33	1	32.50	32.50
Other	1	1.00	1	100.00	100.00
All equity	490	4.26	4	86.86	66.60
Debt:					
Debt (unspecified)	9	1.13	1	.	.
Convertible bonds	15	1.25	1	92.83	75.00
Tax exempt bonds	24	1.71	1.5	37.47	12.45
Notes (secured and unsecured)	161	2.24	2	95.49	75.00
Mortgage related debt	52	1.18	1	85.38	56.90
Credit facility	143	1.88	2	77.63	50.00
Other	2	1.00	1	88.54	88.54
All debt	406	3.47	3	82.94	59.00
Combined debt and equity	101	1.53	1	451.00	451.00
All offering types	997	9.26	8	86.00	62.75

The sample consists of 997 offerings made by 127 REITs with available data during 1992-1997 identified by our search of announcement disclosures. For each type of offering, we report the total number of offerings in the sample, the mean and median number of offerings per REIT, and the mean and median proceeds of the individual offerings.

Table 4
Market Reactions to REIT Offering Announcements
Partitioned by Offering Type and Event Date

Panel A: Equity offerings

Event date t		Unspec. Equity	Common stock	Preferred stock	Convertible pref.stock	Other	Operating part. units	Combined debt & equity
Shelf registration	mean	-0.0033	-0.0036	n.a.	n.a.	n.a.	n.a.	-0.0021
	t-stat	-0.82	-0.68	n.a.	n.a.	n.a.	n.a.	-1.13
	#obs	43	15	0	0	0	0	97
SEC filing	mean	-0.0286	-0.005	-0.0271	-0.0101	n.a.	0.0129	0.032
	t-stat	-0.77	-1.65	-1.29	-1.08	n.a.	n.a.	n.a.
	#obs	3	109	3	4	0	1	1
Offering	mean	0.0312	-0.0109	-0.0011	-0.0038	n.a.	0.0076	0.0266
	t-stat	n.a.	-5.5	-0.26	-0.53	n.a.	0.18	1.22
	#obs	1	206	29	11	0	2	2
Closing	mean	-0.0191	-0.0049	-0.0027	0.0037	0.0484	0.0091	0.01444
	t-stat	n.a.	-2.87	-1.02	0.4844	n.a.	0.62	1.31
	#obs	1	215	38	19	1	2	3
Maximum date	mean	-0.0045	-0.0081	-0.0036	0.0004	0.0484	0.013	-0.0007
	t-stat	-1.06	-4.77	-1.14	0.06	n.a.	0.72	-0.39
	#obs	48	353	52	26	1	4	101

We show the 2-day cumulative raw return around all event date(s) for the 997 sample REIT offerings. The event date is denoted as day t, and we show returns for days (t-1,t). Because some offerings have multiple event dates (e.g., both a filing date and a completion date), the sum of the observations for the four possible event dates exceeds 490 (for equity) or 406 (for debt). The rows for "maximum date" show the 2-day reactions to whichever event date for that offering has the largest (in absolute terms) market reaction.

Panel B: Debt offerings

Event date t		Unspec. debt	Convertible Bonds	Tax exem. bonds	Notes	Mortgage Debt	Other	Credit facility
Shelf registration	mean	-0.0019	n.a.	n.a.	-0.0028	n.a.	n.a.	n.a.
	t-stat	-0.29	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	#obs	8	0	0	1	0	0	0
SEC filing	mean	n.a.	-0.0129	n.a.	-0.0178	0.0294	n.a.	-0.0231
	t-stat	n.a.	-0.55	n.a.	-4.92	n.a.	n.a.	n.a.
	#obs	0	4	0	4	1	0	1
Offering	mean	0.0707	-0.0129	-0.0118	0.004	0.0009	n.a.	-0.0028
	t-stat	n.a.	-1.92	-1.52	1.06	0.2	n.a.	-0.53
	#obs	1	10	6	72	18	0	20
Closing	mean	n.a.	-0.0079	-0.001	0.007	-0.0027	-0.0057	0.0033
	tstat	n.a.	-0.89	-0.21	1.17	-0.85	-1	1.56
	#obs	0	11	23	119	46	2	137
Maximum date	mean	0.0062	-0.0185	-0.0025	0.006	-0.0004	-0.0057	0.0029
	t-stat	0.62	-2.12	-0.5	1.28	-0.13	-1	1.37
	#obs	9	15	24	161	52	2	142

We show the 2-day cumulative raw return around all event date(s) for the 997 sample REIT offerings. The event date is denoted as day t, and we show returns for days (t-1,t). Because some offerings have multiple event dates (e.g., both a filing date and a completion date), the sum of the observations for the four possible event dates exceeds 490 (for equity) or 406 (for debt). The rows for "maximum date" show the 2-day reactions to whichever event date for that offering has the largest (in absolute terms) market reaction.

Table 5
Summary Market Reactions to REIT Equity and Debt Offerings

| | Cumulative raw return days (t-1,t) | | | Cumulative abnormal return days (t-1,t) | | |
| | | | All debt excl. | | | All debt excl. |
	All equity	All debt	Convertible	All equity	All debt	convertible
mean	-0.0043	0.0047	0.0054	-0.0067	0.0026	0.0034
p-value	*(0.00)*	*(0.04)*	*(0.02)*	*(0.00)*	*(0.21)*	*(0.12)*
median	-0.0044	0.0000	0.0000	-0.0103	-0.0010	-0.0006
p-value	*(0.00)*	*(0.02)*	*(0.01)*	*(0.00)*	*(0.84)*	*(0.55)*
#obs	490	406	382	490	406	382
p-level for test:						
equity = debt						
mean	*(0.00)*			*(0.00)*		
median	*(0.00)*			*(0.00)*		

For each broad category of offering (equity and debt), we report the mean and median cumulative raw returns and cumulative excess returns on days (t-1,t) where t = the maximum date identified for the 997 offerings announcements. We also show the significance levels associated with t-tests (sign rank tests) of whether the mean (median) reaction differs from zero. We also report results for debt excluding convertible debt issues. Finally, the last two rows of the table show significance levels for tests of whether the mean (median) reaction to all equity issues is equal to that for all debt issues.

Table 6
Determinants of REIT Offering Decisions

Panel A: Decision 1 - Whether, and how much, to offer?

Independent variable	Pred.sign	Tobit estimates	OLS estimates
Intercept	?	0.4776	0.5846
		(0.01)	*(0.00)*
ΔASSETS	+	0.4146	0.2984
		(0.02)	*(0.04)*
RET	+	0.5393	0.4465
		(0.08)	*(0.06)*
EXCESS_DIV	+	-0.5883	-0.1958
		(0.04)	*(0.33)*
Log-likelihood ratio (R-square)		-248.69	0.0484
			(0.02)

Panel B: Decision 2 - What portion should be equity?

Independent variable		OLS estimates
Intercept	?	0.1222
		(0.54)
LEVG	+	0.041
		(0.08)
ROA	+	0.1142
	(0.47)	
σ(RET)	+	4.222
		(0.31)
OFFER$_{j,T}^{PRED}$	?	0.3706
		(0.00)
R-square		0.0597
		(0.09)

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Table 6 (Cont.')

Panel A reports the coefficient estimates (significance levels) for the following regression, estimated using either tobit or OLS procedures:

$$OFFER_{j,T} = \alpha_0 + \alpha_1 \, \Delta ASSETS_{j,T-1} + \alpha_2 RET_{j,T} + \alpha_3 \, EXCESS\_DIV_{j,T-1} + \varepsilon_{j,T} \qquad (1)$$

where:
$OFFER_{j,T}$	=	the aggregate dollar amount of firm j's offerings in year T scaled by the market value of equity at the end of year T-1; or 0 if the firm made no offerings (of any type) in year T.
$\Delta ASSETS_{j,T-1}$	=	% change in firm j's assets over year T-1.
$RET_{j,T}$	=	firm j's cumulative stock return over year T.
$EXCESS\_DIV_{j,T-1}$ =		total dividends firm j paid in year T-1 minus the required dividend payment in year T-1 (equal to 95% of taxable income in year T-1), scaled by total dividends paid in year T-1.

Panel B reports coefficient estimates (significance levels) for the following regression, estimated using OLS procedures:

$$\%EQUITY_{j,T} = \beta_0 + \beta_1 LEVG_{j,T-1} + \beta_2 ROA_{j,T-1} + \beta_3 \sigma(RET)_{j,T-1} + \beta_4 OFFER_{j,T}^{PRED} + \omega_{j,T} \quad (2)$$

where:
$\%EQUITY_{j,T}$	=	if OFFER > 0 then %EQUITY = firm j's total equity offerings in year T divided by their total offerings in year T (a value of zero implies that the firm issued only debt); if OFFER = 0 then the firm-year observation is deleted.
$LEVG_{j,T-1}$	=	firm j's ratio of debt to book value of equity at the end of year T-1.
$ROA_{j,T-1}$	=	firm j's return on assets in year T-1.
$\sigma(RET)_{j,T-1}$	=	the standard deviation of firm j's stock returns in year T-1.
$OFFER_{j,T}^{PRED}$	=	the predicted value of OFFER for firm j and year T determined from the estimates obtained from panel A.

Table 7
Determinants of the Market Reactions to Announcements of REIT Equity and Debt Offerings

Independent variable	Equity offerings		Debt offerings	
	Cumulative raw return days (t-1,t)	Aggregate cumulative raw return days (t-1,t)	Cumulative raw return days (t-1,t)	Aggregate cumulative raw return days (t-1,t)
Intercept	-0.0132	-0.0181	0.021	0.0239
	(0.31)	(0.55)	(0.10)	(0.22)
ΔASSETS	-0.0018	-0.0108	-0.0015	-0.0033
	(0.29)	(0.03)	(0.77)	(0.64)
RET	0.0374	0.0585	0.0257	0.0296
	(0.00)	(0.01)	(0.01)	(0.02)
EXCESS_DIV	0.0108	0.0085	-0.0157	-0.0242
	(0.24)	(0.67)	(0.08)	(0.07)
LEVG	0.0027	0.0072	0.0004	0.0013
	(0.10)	(0.06)	(0.78)	(0.60)
ROA	0.0357	-0.0555	-0.1454	-0.1597
	(0.75)	(0.79)	(0.11)	(0.18)
σ(RET)	-2.1713	-1.6902	-3.4712	-1.89
	(0.74)	(0.89)	(0.51)	(0.37)
SIZE_OFFER	-0.0015	-0.002	-0.0022	-0.002
	(0.53)	(0.68)	(0.34)	(0.54)
R-square	0.1027	0.1834	0.0785	0.1036
	(0.00)	(0.00)	(0.09)	(0.16)

In the columns labeled "cumulative raw return days (t-1,t)" we report coefficient estimates (significance levels) for the following regression, estimated separately for the sample equity and debt offerings:

$$CRR(t\text{-}1,t)_{j,t} = \lambda_0 + \lambda_1 \Delta ASSETS_{j,T\text{-}1} + \lambda_2 RET_{j,T} + \lambda_3 EXCESS\_DIV_{j,T\text{-}1} +$$

$$\lambda_4 LEVG_{j,T\text{-}1} + \lambda_5 ROA_{j,T\text{-}1} + \lambda_6 \sigma(RET)_{j,T\text{-}1} + \lambda_7 SIZE\_OFFER_{j,T} + \zeta_{j,t}$$

where: $CRR(t\text{-}1,t)_{j,t}$ = security j's cumulative raw return over days (t-1,t), and day t = the maximum date for this offering announcement.

$\Delta ASSETS_{j,T\text{-}1}$ = % change in firm j's assets over year T-1.

$RET_{j,T}$ = firm j's cumulative stock return over year T.

$EXCESS\_DIV_{j,T\text{-}1}$ = total dividends firm j paid in year T-1 minus the required dividend payment in year T-1 (equal to 95% of taxable income in year T-1), scaled by total dividends paid in year T-1.

$LEVG_{j,T\text{-}1}$ = firm j's ratio of debt to book value of equity at the end of year T-1.

$ROA_{j,T\text{-}1}$ = firm j's return on assets in year T-1. $\sigma(RET)_{j,T\text{-}1}$ = the standard deviation of firm j's

stock returns in year T-1.

Table 7 (Cont.')

SIZE_OFFER$_{j,T}$ = log of the offering proceeds.

The columns labeled "aggregate cumulative raw return days (t-1,t) show similar information for the regression with the dependent variable = $\sum$ CRR(t-1,t) for all offering dates t in year T. For this regression the SIZE_OFFER variable is redefined as the sum of all offerings made by firm j in year T.

APPENDIX

Summary of the Results of Prior Studies Tests of the Valuation Implications of Debt and Equity Issuances

Name	Type of Capital Structure Change	Time period	Number of observations	Test	Results
Dann and Mikkelson [1984]	Issuance of convertible debt and straight debt	1970-1979	132 announcements for convertible debt 150 announcement for straight debt	Examined 2-day abnormal returns around WSJ announcement and issue dates	-2.31% abnormal return for convertible debt at the announcement date (p=0.01); -1.54% abnormal return for conv. debt at the issue date (p=0.01). -0.37% abnormal return for straight debt at the ann. date (p=.10); +.08% abnormal return for straight debt at the issue date (p >.10).
Jung, Kim and Stulz [1996]	Stock and bond offerings	1977-1984	192 equity announcements, 276 debt announcements	2-day abnormal returns around WSJ announcement date	-2.7% mean abnormal return for stock; -0.09% mean abnormal return for debt; t(diff.) = 2.62
Mikkelson and Partch [1986]	Common stock, straight debt, preferred stock, convertible debt	1972-1982	299 announcements; 80 common stock, 172 straight debt, 33 convertible debt, 14 preferred stock	2-day announcement period abnormal return around WSJ announcement date	-3.56% (t=-9.8) for common stock; -0.23% (t=-1.40) for straight debt; -1.97 (t=-4.94) for convertible debt; -0.26 (t=-0.55) for preferred stock

Asquith and Mullins [1986]	Common stock offerings (initial, primary, secondary, and mixed)	1963-1981	531 equity announcements (266 for industrials)	2-day abnormal returns around WSJ announcement date	-3.0% (t=-12.5) for primary offerings; average loss in firm value on announcement day = 31% of funds raised (prim. off.)
Eckbo [1986]	Straight and convertible debt	1964-1981	648 straight debt and 75 convertible debt announcements	2-day abnormal returns around WSJ announcement date	-0.06% (p > 50%) for straight debt and -1.25% (p = .01) for convertible debt
Masulis and Korwar [1986]	Primary equity, combined primary and secondary equity, and dual debt-equity offerings	1963-1980	972 primary equity 242 combination equity 182 dual debt-equity	2-day abnormal returns around WSJ announcement date	-3.25% (t = -11.3) for primary offerings of industrial firms; -0.68% (t = -24.2) for primary offerings of utilities
Korajczyk, et al. [1990]	Primary, secondary and combined equity offerings	1974-1983	819 primary announcements	2-day abnormal returns around announcement date (Drexel Burrrnham data)	-2.94 (t=-19.39) for primary and combined offerings

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