

# Initial Public Debt Offerings<sup>\*</sup>

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## Abstract

We analyze a sample of firms that choose to tap the public debt markets before the public equity markets. These “debt first” firms are typically significantly larger and less likely to have information asymmetry problems than traditional “equity-first” firms in the same industry and year. Their debt issues are more expensive and face more restrictive covenants than debt issues by publicly listed firms that tap the debt market for the first time or publicly listed firms that have public debt outstanding and issue subsequent additional public debt. However, when the debt-first firms eventually go public, they face lower underpricing than firms without public debt that undertake an initial public offering in the same industry. Our results have significant tactical implications for firms choosing to access the public capital markets for the first time. We show that the reduction in information asymmetry at the time of the initial public debt offering reduces the offer yield at subsequent debt offerings and at the eventual IPO. Finally the proceeds at the eventual IPO are higher, underpricing is lower and fees paid to investment banks are lower suggesting that there are considerable benefits to the firm by choosing to tap the debt market prior to tapping the equity market.

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### **Abstract**

We analyze a sample of firms that choose to tap the public debt markets before the public equity markets. These “debt first” firms are typically significantly larger and less likely to have information asymmetry problems than traditional “equity-first” firms in the same industry and year. Their debt issues are more expensive and face more restrictive covenants than debt issues by publicly listed firms that tap the debt market for the first time or publicly listed firms that have public debt outstanding and issue subsequent additional public debt. However, when the debt-first firms eventually go public, they face lower underpricing than firms without public debt that undertake an initial public offering in the same industry. Our results have significant tactical implications for firms choosing to access the public capital markets for the first time. We show that the reduction in information asymmetry at the time of the initial public debt offering reduces the offer yield at subsequent debt offerings and at the eventual IPO. Finally the proceeds at the eventual IPO are higher, underpricing is lower and fees paid to investment banks are lower suggesting that there are considerable benefits to the firm by choosing to tap the debt market prior to tapping the equity market.

## I. Introduction

What determines a firm's capital structure choice? In spite of a vast body of academic research investigating this question, we still do not have a definitive set of answers. The extant literature typically attributes a firm's capital structure choice to either the pecking order or trade off theory. The pecking order theory (Myers and Majluf, 1984) assumes that managers have superior information relative to investors and the presence of asymmetric information results in adverse selection costs. Hence the theory predicts that firms will raise debt in preference to raising equity since debt has fewer associated information asymmetry costs than equity. The tradeoff theory argues that the debt issuance decision is a tradeoff between the benefits of debt tax shields and financial distress costs associated with excessive leverage.<sup>1</sup>

In this paper, we study a firm's decision to tap external capital markets for the very first time, specifically, its initial choice of accessing public equity versus public debt markets. Before tapping any public market, the firm typically has the highest level of asymmetric information relative to any subsequent stage in its life cycle. Consequently, the pecking order model of capital structure would predict that these firms would choose to issue debt in preference to equity. However, the typically observed capital structure choice involves a firm first issuing public equity in an initial public offering (IPO) and only subsequently tapping the public bond markets.

More specifically, we analyze a sample of 583 firms which choose to tap the public debt *before* the public equity markets over the period 1987-2009. The existence of these firms has been largely neglected in the academic literature, presumably because most academic studies start with a list of publicly listed firms in popular databases such as the Center for Research in Security Prices (CRSP) and Compustat. In contrast to the vast majority of "equity first" firms, these "debt first" firms have chosen to resolve informational asymmetry in the public debt rather than the public equity markets. We analyze this choice in the paper.

Analyzing these firms is important because it sheds light on the initial choice of capital structure made by these firms, which is likely to be of critical importance to firms that have never tapped the public markets before. In the absence of asymmetric information and in the

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<sup>1</sup> We note that other academic studies have tried to relate capital structure choices to the level of the firm's stock price (Baker and Wurgler, 2002), debt capacity (Lemmon and Zender, 2010), supply of credit (Leary, 2009), and other firm specific characteristics. Since many of these theories make predictions similar to those of the pecking order and tradeoff theories, we focus on the latter two in this paper.

presence of perfect and efficient capital markets, the sequencing of the capital issue decision should not matter. However, Baker and Wurgler (2002) notes that capital structure choices are very persistent with current capital structure being strongly related to past market valuations. Persistence in capital structure choices should also show up in the long-term leverage ratios of these firms. If a firm chooses to issue public debt prior to issuing public equity, its long-term capital structure should be more heavily weighted towards debt than equity.

We compare our unlisted debt-first (UDF) sample to three control samples matched by industry and year of the public debt issuance. First, we compare our sample to unlisted equity-first (UEF) firms that issue public equity via an IPO without having any public debt outstanding. Second, we compare our sample to publicly listed (LDF) firms that tap the public debt market for the first time. Our third control sample consists of publicly listed firms with public debt outstanding that issue additional public debt subsequently (LDA). In each case, the industry and year matching controls for variations in the level of market and industry sentiment that have been shown to influence the level of security issuance (Baker and Wurgler, 2002)

We use these three control samples to answer three questions. First, what are the differences in the level of information asymmetry for firms that choose to issue public debt relative to IPO firms (the UEF control sample)? Second, what are the characteristics of the debt contracts for the “debt first” firms relative to publicly listed firms that issue debt for the first time (the LDF control sample), or to publicly listed firms with public debt outstanding, that issue additional public debt (the LDA control sample)? Some, but not all the UDF firms subsequently choose to go public via an IPO. Therefore, our third research question focuses on the characteristics of the IPO, namely, we study whether the reduction in information asymmetry caused by the initial debt offering benefits the firm in the subsequent IPO by reducing its underpricing.

We find that the “debt first” UDF firms are typically significantly larger in terms of sales and assets, exhibit superior operating performance as proxied by ROA/ROE, spend significantly less on research and development, and have considerably higher private debt than firms choosing to go public via the more commonly used equity route. These results hold both in univariate comparisons and in a multivariate framework. Firms choosing the “debt first” route typically seem to have less *a priori* asymmetric information and lower financial distress costs than their “equity first” UEF counterparts, which is more consistent with the tradeoff theory of capital structure than the pecking order theory.

While the “debt first” firms are larger, they are younger than listed LDF firms that choose to issue public debt after an IPO. They also display worse operating performance (in terms of net profit margin and cash flow margin), lower growth opportunities (spending much less on R&D expenses while maintaining the same level of assets in place), lower liquidity and higher private debt than their LDF counterparts in the same industry and year. According to the tradeoff theory, financial distress costs for the UDF firms are hence likely to be higher vis-a-vis their LDF counterparts. It is not surprising, therefore, that they also face a significantly higher cost of debt (offer yield), more restrictive covenants, and lower credit ratings than publicly listed firms that choose to issue debt for the first time in the same industry in the same year. These results are robust to both univariate and multivariate analyses. However, since the publicly listed control firms have already resolved some of the information asymmetry issues during their IPO process, it is also possible that the differential results are due to the pecking order story.

We find similar results when we compare the UDF firms to the sample of publicly listed LDA firms with public debt outstanding that issue additional public debt in the same industry and year as the UDF firms. UDF firms are smaller and younger than listed LDA firms. Operating performance (in terms of net profit margin and cash flow margin) continues to be worse, UDF firms still have lower growth opportunities (R&D expenses), lower liquidity and higher private debt than their LDA peers. The offer yield on the debt continues to be significantly higher, the debt is likely to be rated more poorly and the UDF firms face significantly more restrictive covenants than the LDA firms. Again, these results are consistent with both the tradeoff and the pecking order theories. From a tradeoff theory perspective, the higher leverage and lower operating performance implies higher potential financial distress. From the pecking order perspective, the LDA firms have even less information asymmetry than the LDF firms and hence less than the UDF firms.

Why then do these “debt first” firms choose to issue public debt prior to issuing public equity? One possibility is that the information asymmetry is resolved on the first issue of public debt. Subsequent issues of public debt will presumably receive better offer terms. We test this conjecture by comparing the terms of the subsequent debt offering to the terms of the initial public debt offering by the UDF firms. We find some evidence that this is the case. The subsequent debt offering is larger and has a significantly lower offer yield, even though it is significantly lower rated and still faces significantly worse restrictive covenants than the first

issue of debt by the UDF firms. However, most firm characteristics are insignificantly different from the UDF firms, suggesting that these results are not driven by worsening financial distress costs. Instead, they seem more likely to be driven by the reduction in information asymmetry after the UDF firm has issued public debt for the first time.

The reduction in information asymmetry also reduces the differences in offer yield for subsequent debt issues by these firms relative to either subsequent debt issues by public listed firms or the first debt issue by a listed firm. In a multivariate framework, we show that after controlling for the terms of the debt and firm characteristics, the offer yield is not significantly higher for subsequent issues of public debt by the UDF firms relative to additional issues by listed LDA firms or for the first issue of public debt by LDF firms. This is partly driven by the continued presence of more restrictive covenants for debt issued by the UDF firms than the LDA firms. However, since differences in firm characteristics do not drive differences in the offer yield, and the presence of restrictive covenants does not seem to be significant for explaining the differences in offer yield for the LDF firms, our results seem more consistent with the pecking order story than tradeoff theory

Another possible outcome is that the initial higher cost of debt for the UDF is offset by significantly lower underpricing at the time of their eventual IPO. A significant proportion (~40%) of our UDF firms subsequently choose to go public through an IPO. Comparing these firms to IPOs by unlisted firms without public debt outstanding in the same industry and year, we find that IPO underpricing is significantly lower, the amount raised through the offering significantly higher and the fees charged by the equity underwriters significantly lower than the UEF counterparts. Notably the gross spread as a percentage of the principal amount is 6.75% (as opposed to the 7% spread documented by Chen and Ritter (2000) for regular IPOs). Moreover these IPOs are significantly less likely to go public in a hot IPO period suggesting that our results are not driven by these firms attempting to take advantage of market sentiment. We show that the extra costs associated with the greater information asymmetry of UDF firms (i.e., additional tax-adjusted debt service payments over the lifetime of the bond) tend to be offset by the savings the firm receives during the subsequent IPO in the form of significantly lower IPO underpricing.

Our results have significant tactical implications for firms choosing to access the public capital markets for the first time. We show that the reduction in information asymmetry at the time of the initial public debt offering reduces the offer yield at subsequent debt offerings and at

the eventual IPO. The proceeds at the eventual IPO are higher, underpricing is lower and fees paid to investment banks are lower suggesting that there are considerable benefits to the firm by choosing to tap the debt market prior to tapping the equity market.

The remainder of the paper is organized as follows. Section 2 describes the literature and develops the underlying hypotheses. Section 3 describes the data and methodology. Section 4 discusses the results and Section 5 concludes.

## **2. Hypotheses**

Firms are likely to make their initial choice of the public debt or equity market based on the relative costs and benefits of debt and equity. The extant literature largely argues that these costs are driven by either information asymmetry effects or financial distress costs. Specifically, the pecking order hypothesis (Myers and Majluf, 1984) argues that since debt is easier to value than equity, lower information asymmetry costs of debt imply a pecking order with firms choosing internal capital, (i.e., retained earnings), over external debt capital, which in turn is chosen over external equity. In contrast, the trade-off theory argues that a firm with higher inherent growth prospects as proxied by capital expenditures, sales growth, R&D and intangibles, may be prompted to issue equity rather than debt, since financial distress costs are likely to be higher for these firms than for firms with few growth opportunities, who are more likely to finance via public debt markets. Predictions similar to those made by tradeoff theory also arise naturally from other models of capital structure. For example, the issuance of public debt extends the firm's debt maturity profile if it already has private debt outstanding (James, 1987). Myers (1977) argues that firms with embedded growth options avoid issuing long maturity debt because they do not wish to commit to sharing the benefits of those options with the firm's bondholders, i.e., the underinvestment problem.

How do these information asymmetry and financial distress effects relate to the security issuance choice? First consider the public debt issuance decision. A firm that issues public or arm's length debt is typically subject to lower levels of monitoring than if it obtains private or bank debt. Diamond (1991) shows that the greater informational asymmetry produces adverse incentive effects including underinvestment and asset substitution. Datta, Iskandar-Datta, and Patel (2000) show that in contrast to seasoned debt offering announcements, the initial public debt offering by a publicly listed firm has a negative impact on shareholder value. Firms with

less information asymmetry and firms with higher growth opportunities also experience less adverse price reactions.

The adverse effect on shareholder value for listed firms however, needs to be balanced by other positive effects. Rajan (1992) argues that firms are subject to bank holdup problems because of the information monopoly banks have. Again this is driven by information asymmetry in that the value of the information monopoly is reduced if there is little asymmetric information on the firm. Hence diversification of debt sources through the introduction of public debt should benefit the firm. Ross (1977) argues that debt signals firm quality for firms with asymmetric information and hence leverage increases should increase firm value.

Similarly, consider the public equity issuance decision. Most models of the initial public offering process assume information asymmetry in the market for equity securities. Rock (1986) for example, argues that IPOs are underpriced to alleviate the lemons problem faced by less informed investors. Factors that reduce information asymmetry reduce the underpricing of the equity at the initial public offering. For example, Schenone (2004) argues that banking relationships established before the IPO ameliorates asymmetric information problems at the subsequent equity offering.

There is little evidence on the tradeoffs made by firms before they tap the public security market for the first time. In particular, firms that choose to tap the public debt market ahead of the public equity market have been largely neglected, presumably because there is little information available on these firms in popular databases such as the CRSP and Compustat. Among the exceptions, both Saunders and Steffen (2011) and Kovner and Wei (2011) document that private firms are substantially disadvantaged in the debt market compared to public firms. Specifically, Saunders and Steffen (2011) show that the private debt pay significantly higher loan spreads for syndicated loans in the UK than publicly traded firms. Kovner and Wei (2011) document that public bonds of U.S. private companies offer significantly higher spreads than public bonds of public companies.

However, the additional costs faced by the private firms are at least partly alleviated if the firms issue additional debt or when they go public. Helwege and Kleinman (1998) find that while debt IPOs are underpriced by around 39 basis points, the underpricing is confined to bond IPOs that are issued by publicly listed firms, suggesting that firms that issue debt before an IPO



suffer less from information asymmetry. Cai, Ramchand, and Warga (2004) examine a small sample of 91 equity IPOs where the firm had a prior public debt offer and find that the subsequent IPO is associated with substantially lower underpricing, leading them to argue that the reduction of information asymmetry through the issue of public debt reduces the level of underpricing necessary at the subsequent public equity offering. We distinguish our approach from Cai, Ramchand and Warga (2004) by noting that we look at the a priori first issue decision without constraining our firms to go public through an equity issue subsequently. In fact, a non-trivial proportion of our sample firms (~60%) never go public by the end of our sample period in 2009.

### **3. Data Sources**

#### *3.1. Sample Construction*

We obtain issuance data from SDC Platinum (for both public debt and equity) and Mergent FISD (for public debt). Credit ratings that are not available in SDC and FISD are supplemented by data from S&P Ratings Xpress. Fundamental data are obtained from Compustat, and price/return data are obtained from CRSP and Compustat security pricing files.

FISD and the SDC bond issuance databases contain issuer and issue CUSIP, principal amount issued, issue date, security type (e.g., senior notes, debentures, etc), whether the issue is secured, its credit rating, maturity, offer yield and issuer's primary SIC code, among others. Additionally, FISD reports more than 50 variables on issuer/subsidiary restrictive and bondholder protective covenants. The SDC Equity issuance database carries information on various terms of the IPO including, but not limited to, principal amount issued, issue date, offer price, security type, stock's closing price on the first day or trading, and other IPO-related information such as underwriting and management fees, number of (non) bookrunners and managers, and syndicate information. We merge bond and equity issuance samples from SDC and FISD with Compustat based on the historical CUSIP.<sup>2</sup> We focus on public debt issuance of corporate bonds, common stock IPOs<sup>3</sup> by US-based companies, but exclude issuance by

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<sup>2</sup> We build the historical GVKEY-CUSIP link starting with the CRSP-Compustat Merged Database. Additional links are obtained from the Compustat Corporate Tracker database (which provides a historical map between GVKEY and CUSIP going back to 1960s and includes securities outside of the CRSP universe) as well as Compustat Point-in-Time database (from 1987 onwards). Finally, we supplement links with a header mapping between GVKEY and CUSIP provided in the Compustat Company table.

<sup>3</sup> The FISD bond sample includes bond types CDEB, CMTN, CMTZ, CCOV, CP, USBN, CS, CCPI, and CPAS and excludes rule 144A private placement issues; SDC public debt sample includes regular bonds, notes, medium term

financial services firms from both equity and bond samples. After imposing these filters, we are able to match 3,654 FISD issuers with 31,845 issues, 2,406 SDC debt issuers with 28,957 issues, and 6,323 SDC IPO equity issues between Jan 1987 and Dec 2009.

We identify the date when a company issues public debt for the first time as the earliest of the first public debt issuance dates in FISD and SDC. As an additional check, we cross-check the first public debt issuance dates with first transaction dates in TRACE (when available after 2002) and with the first time the company's debt gets rated according to the S&P Ratings Xpress (if a rating exists). This is done to ensure that the date in question is indeed the first time when the company issues public debt.

We identify the first date of public equity issuance as the earliest date between the IPO date in SDC and the first date of non-missing return in CRSP and Compustat security pricing data (North America and Global). There are many cases when the firm has already had its equity traded (non-missing prices in CRSP or Compustat), but its IPO in SDC is dated to a later period.<sup>5</sup> It is important to include Compustat pricing data in the analysis because we want to identify cases when a US company chooses to list its equity either in the US but on the exchange not covered by CRSP (NYSE/AMEX/NASDAQ/ARCA), or on a foreign exchange outside the US (which can be identified by cross-referencing with Compustat Global).

Using this algorithm, we are able to determine the dates of the initial public debt offering for 3,397 distinct issuers (with matched Compustat GVKEY) as well as the dates when company first begins trading its equity for the first time for 13,355 distinct issuers (5,981 of them with valid IPO data in the SDC Platinum database, with the rest coming from CRSP and Compustat pricing data) during 1987-2009.

Our primary sample consists of private firms that decide to issue public debt for the very first time at least 30 days before they issue equity for the very first time. Hence, these firms must have missing price history on the date of public debt issuance both in CRSP and Compustat. Over the 1987-2009 period, this "debt first" sample includes 583 issuers in 43 different industries (based on the Fama-French 48 industry classification). There are no firms that issued

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notes and floating notes, debentures, senior and subordinated notes. The SDC equity IPO sample incorporates corrections suggested on Jay Ritter's website at <http://bear.warrington.ufl.edu/ritter/SDC%20corrections122811.pdf>.

<sup>5</sup> The reason is that the SDC IPO date is not necessarily the first date a company issued equity. For example, Bucyrus International Inc (gvkey= 024363) began trading its common stock for the first time in Feb 1995 according to Compustat pricing data. It was delisted in Sep 1997, issued public debt in Nov 1997 and began trading its stock again in July 2004. The SDC equity issues database (sdc\_id 22287005) has the record only for the July 2004 IPO issuance. According to our selection criteria, this case will be excluded from our sample of "debt first" firms.

public debt before public equity for the first time during 2008 and 2009, therefore, all of our observations fall within 1987-2007 time period. Out of 583 identified “debt first” firms, 159 have records both in SDC and FISD, 369 come from FISD only, and 55 come from SDC only, suggesting it is essential to use FISD and SDC together to construct a comprehensive “public debt first” sample<sup>6</sup>. For the purposes of comparison, we also form three control samples matched on the sample firm’s industry (using Fama-French 48 industry classification) and the year of first public debt issuance. (1) firms that issue public equity via an IPO without having any public debt outstanding, i.e. unlisted firms issuing Equity for the first time: UEF sample, which includes 2,654 equity IPOs; (2) publicly listed firms that tap the public debt market for the first time: LDF sample with 744 issuers; and (3) publicly listed firms with public debt outstanding that issue additional public debt subsequently: LDA sample with 909 issuers during our sample period).

To assess whether UDF firms get better deal terms during the first equity issuances (IPOs) that follow the initial public debt offerings, we use SDC equity issues database to identify 234 UDF firms that go public in our sample between 1987 and 2009 (~40% of all UDF firms). This sample is used later on in the analysis of IPO terms between UDF firms and firms that choose to tap public equity markets without any public debt outstanding at the time of the IPO.

### *3.2. Corporate bond covenants*

To evaluate how restrictive the terms of the debt offerings for the sample of UDF firms, we construct several covenant indexes using FISD. Our construction of covenant dummies is similar to that of Billett, King and Mauer (2007). We classify the 21 covenant indicators (see Mansi, Qi and Wald (2011) for details) into seven main covenant indexes such as payment restrictions, borrowing restrictions, asset and investment restrictions, stock issuance restrictions, default-related covenants, anti-takeover-related covenants and profit maintenance covenants by summing the covenant dummy variables within each category. Payment restrictions consist of two covenant dummies: dividend related payments and other restricted payments. Borrowing restrictions include eight dummies that restrict the firm from additional debt activities. Asset and investment restriction covenants limit asset sales, restrict the issuer in certain business dealings with its subsidiaries, and restrict subsidiaries’ investments. Stock issuance restrictions consist of

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<sup>6</sup> We find multiple cases when historical cusip information in FISD does not match historical cusips in SDC or our historical GVKEY-CUSIP link. Whenever there is no cusip match, we manually match by firm’s historical name and offer date.

three covenants that limit additional common stock issuance, preferred stock issuance, and stock transfers between the issuer and its subsidiaries. Default-related covenants protect the firm's bondholders by triggering default should default occur in any of the firm's other debt. Anti-takeover related covenants include a poison put, which gives bondholders the option to sell back their bonds to the issuer should a change of control of the issuer occur, and a merger covenant, which restricts the consolidation or merger of the issuer with another entity. The last category is the profit maintenance, which includes covenants that require the issuer or its subsidiaries to maintain a minimum earnings ratio or net worth.

A higher index score indicates stronger creditor protection for a specific type of activity and vice versa. In addition to the seven covenant categories, we also create an overall covenant index of bondholder protection by summing the 21 covenant indicators for each bond.

## **4. Results**

### *4.1 Capital Issuance Trends*

Table 1 documents the time series issuance patterns of our sample of unlisted "debt first" (UDF) firms and compares them to the three control samples matched on the sample firm's industry and the year of debt issuance: firms that issue public equity via an IPO before issuing any public debt (UEF); publicly listed firms that tap the public debt market for the first time (LDF); and publicly listed firms with public debt outstanding that issue additional public debt subsequently (LDA).

We find that our sample of UDF firms is dominated by those firms that choose to raise capital via an equity IPO. Over the 1987-2007 sample period, 583 firms choose the public debt route to tap capital markets for the first time (there are no "debt first" firms in 2008 and 2009), in comparison to 2,654 firms raising capital via an equity IPO in the same year and industry. The number of "debt first" firms is however more comparable to the number of publicly listed firms that issue debt for the first time (LDF) and around two-third of number of publicly listed firms which are seasoned debt issuers (LDA). Not surprisingly, the debt issuance decision is highly correlated across the "debt first" UDF sample and the LDF and LDA control samples, with the coefficient of correlation ranging between 0.82 and 0.92. Interestingly, though the correlation between the "debt first" sample and the UEF is lower, it is still positive and significant at 0.70.

Though the number of “debt first” firms are approximately 20% of the number of equity IPOs over the same period, we note that these firms raise significantly more capital during each instance of tapping capital markets through debt financing than their equity IPO counterparts. While the aggregate amount of debt issued for the “debt first” sample is around half the value of equity raised via an IPO – \$66 billion and \$150 billion, respectively – the average UDF firm raises \$115 million of capital versus \$57 million for the average UEF firm. Given the strong documented evidence of IPO underpricing, it is not surprising that an entrepreneur would issue fewer shares in an attempt to resolve informational asymmetries before tapping the equity capital markets again for subsequent capital needs.

While the volume of debt raised by the “debt first” sample is roughly two-third of the amount of public debt raised by LDF firms (\$95 billion) but both numbers are dwarfed by the aggregate volume of debt issued by LDA firms (\$235 billion). As before, the volume of debt raised is highly correlated across the three samples with correlations ranging from 0.77 to 0.91. The volume of equity raised via an IPO continues to remain positively correlated with the volume of first time public debt issuance (correlation = 0.51). Not surprisingly, equity issuance volumes are strongly correlated with the business cycle, consistent with Choe, Masulis, and Nanda (1993) who show that adverse selection costs are lower during periods of robust economic activity.

In unreported results we also find that there is significant cross-sectional variation in issuance volumes across different industry sectors. Using the Fama-French 48 industry sector classification, we find that industries with a higher degree of informational asymmetry, fewer tangible assets, and more R&D intensity are more reliant on equity markets to access public capital for the first time. For example, business services and drug firms are heavy issuers of equity across all sample years while firms in the oil and steel sectors are more reliant on debt capital markets for their first time capital raising decisions. Over the 1987-2007 period, 80% of the firms in the business services sector and 80% of the firms in the drug sector are first to tap the public equity markets; the corresponding figure is merely 25% for firms in the oil and steel industries. These patterns are consistent with notion that large variability in the value of the firm emanating from significant growth options and R&D intensity, will cause firms to maintain lower leverage (Myers, 1977).

#### *4.2. Comparing sample characteristics between debt first and equity first samples*

To the extent that capital market issuance choices are a function of issuer characteristics, we compare the “debt first” UDF firms to the “equity first” UEF sample across a number of dimensions such as size, operating performance, leverage, growth opportunities, and liquidity. We report univariate comparisons in Panel A of Table 2 for the entire period as well as three sub-periods from 1987-1992, 1993-2000, and 2001-2007, corresponding to three business cycles. Since the results are similar across the sub-periods, we only discuss the results for the entire sample period.

Across most of the proxies, the general pattern is that the “unlisted debt first” firms have significantly less information asymmetry than firms that choose to go public via the traditional equity first route. Proxies for size which include assets, sales, and trading age of the firm, suggest that the UDF firms are significantly larger and older than their UEF counterparts. Over the entire sample period, the median UDF firm has total assets of \$355 million versus \$40 million for the median UEF firm. Similarly, sales are \$319 million and \$28 million for the two samples respectively. “Debt first” firms also tend to be older with a median age of 10 years at issuance versus 6 years for the UEF sample. Factors that affect the level of information asymmetry include the firm’s size and age. Interestingly, the pecking order story would predict that these firms would be less likely to issue debt than younger firms. Older, larger firms are less likely to be characterized by high levels of information asymmetry and hence would be more likely to choose an equity issue. This result may be more consistent with the tradeoff theory in that the debt market might be more willing to supply credit to older, more established firms with lower financial distress costs. This is also consistent with our results on operating performance.

Operating performance, as proxied by industry-adjusted ROA and operating ROA, is also significantly higher for the UDF firms, with industry-adjusted values of 1% versus -1% for the equity IPO sample. However, net, gross, and pre-tax profit margins are statistically similar across the two samples. Proxies for growth opportunities as measured by R&D/Sales and R&D/assets are significantly lower for the median UDF firm than for the median UEF firm. Similarly, the level of tangible assets as measured by PPE/assets is significantly higher for UDF sample. Overall, these results are consistent with the view that those firms with lower earnings variability, greater transparency about the underlying asset base, and larger size, possess a

greater ability to access public debt markets. These results are consistent with Hale and Santos (2008) who show that firms that are more creditworthy, issue their first public bond earlier.

Hence, not surprisingly, industry-adjusted leverage metrics are significantly higher for the UDF sample than for the UEF firms, with Debt/EBITDA of 1.83 and -0.02 respectively. Debt/book equity, the long-term debt/working capital ratio and the KMV EDF credit measures are all significantly higher for the UDF sample. However, the interest coverage ratio is similar for the two samples, owing to the smaller size of the UEF firms.

Liquidity metrics, proxied by the current, quick, and cash ratios, are one dimension where the UDF firms show a significant worse picture than UEF firms. Current, quick and cash ratios are all significantly lower than their equity first counterparts. To the extent that UEF firms are likely to exhibit greater earnings variability emanating from higher embedded growth options, one would expect these firms to maintain higher liquidity levels to manage tail risk on the balance sheet.

In Table 2 Panel B, we examine the capital raising choice in a probit regression framework. Specifically, the dependent variable takes the value 1 if it corresponds to an observation in our primary UDF sample and 0 for the UEF sample. We do not control for macro-economic characteristics that affect the decision to issue since our sample firms are matched to the control sample by industry and year of issuance. Our results are broadly consistent with the univariate results; (log) Aassets, ROA, and prior leverage are significantly positively related while R&D/assets is significantly negatively related to the probability that a firm chooses to tap the public markets via debt versus equity.

#### *4.3. Comparing sample characteristics between unlisted and listed firms issuing public debt*

We next compare the “debt first” UDF firms to the control sample of listed LDF firms that issue public debt for the first time. In Table 3 Panel A, we report univariate statistics across two dimensions. As in Table 2 Panel A, we first report comparisons between firm characteristics. In addition, in Panel B we also report comparisons across characteristics of the public debt issued. Since the sub-period analysis is largely similar to the full sample period, for brevity, we report univariate comparisons only for the full sample period.

The contrast between the UDF firms and the LDF firms is less sharp than between the UDF and UEF firms but the general pattern is roughly similar in that unlisted debt first firms have

lower information asymmetry – in terms of size, growth opportunities and leverage – than firms that choose to raise debt after going public.

Proxies for size which include assets and sales, suggest that the UDF firms are significantly larger than their UEF counterparts. Over the entire sample period, the median UDF firm has total assets of \$368 million versus \$314 million for the corresponding median LDF firm. Similarly, sales are \$296 million and \$223 million for the two samples respectively. However, the UDF firms are significantly younger than their LDF counterparts – the median age is 9 years at issuance versus 14 years for the LDF sample.

As before, growth opportunities are significantly lower for the UDF firms than for the LDF firms. Both R&D/Sales and R&D/Assets are significantly lower for the median UDF firm than for the median LDF firm. Similarly, the amount of tangible assets in the firm, PPE/assets, is significantly higher. Industry-adjusted leverage is significantly higher for the UDF sample than for the LDF firms, with Debt/EBITDA of 1.63 and 0.67 respectively. Debt/book equity, the long-term debt/working capital ratio and the KMV EDF credit measures are all significantly higher for the UDF sample. However, the interest coverage ratio is similar for the two samples.

Finally, as before, the UDF firms display significantly inferior liquidity metrics than the LDF firms. Current, quick and cash ratios are all significantly lower than their listed counterparts. One significant difference between these comparisons and the previous comparisons in Panel A of Table 2 shows up in operating performance, as proxied by industry-adjusted ROA and operating ROA, which is similar across the UDF and LDF samples. However, net profit, pre-tax profit, and cash flow margins are significantly lower for the UDF firms than the LDF benchmarks. Academic evidence suggests that firms with greater capital market access as proxied by size and the presence of a credit rating (Opler, Stulz, and Williamson, 1999) maintain lower cash levels while firms with higher growth opportunities and a riskier earnings stream maintain higher cash levels. All of the firm levels metrics described above along with the view that 79% of the UDF firms versus 70% of the UEF firms are rated (Panel B), corroborate with the differentials in liquidity metrics.

In the second part of Table 3 Panel A, we contrast the characteristics of the debt issued by these two types of firms. Interestingly, the lower a priori information asymmetry exhibited by the UDF firms in the upper part of Panel A does not translate into better terms at the debt offering. While the size of the debt offering is marginally higher (significant at the 6% level) for UDF



firms than LDF firms, the offer yield is also significantly higher at 11% in contrast to 7.6% for the LDF firms. In addition, the debt is marginally shorter term (though this is driven by a significantly longer maturity for the LDF firms in the 1987-1992 period), and the coupon rate and gross spreads are significantly higher. The debt issued by the UDF firms is more likely to be rated but less likely to be investment grade debt. In fact, both Moody's and S&P rate the debt as lower quality than the debt issued by LDF firms.

However, agency problems between bondholders and equity holders are not managed by the offer yield and the debt maturity alone. Firms are also likely to use bond covenants to affect the terms of the offer. Kwan and Carleton (2010) show that private placement bonds are more likely to have restrictive covenants than public bonds. Private placement bonds are also more likely to be issued by smaller and riskier firms. Nash, Netter and Poulsen (2003) show that firms with growth opportunities are less likely to include dividend or debt issuance restrictions in their bond contracts. They do not find that the use of other restrictive covenants is significantly lower for firms with high investment opportunities. They argue that the use of these other covenants is primarily driven by the issuing firm's likelihood of financial distress. Hence we analyze the degree to which the firms use restrictive covenants in their loan terms.

UDF firms are significantly more likely to face restrictive covenants than their LDF counterparts. They are more likely to offer secured debt, face payment restrictions, borrowing restrictions, and restrictions on stock issuance and asset investment. Despite this, the process of securing a public debt rating can itself serve as an information transmission mechanism which helps resolve some of the information asymmetry in the market.

However, as we note above, these debt characteristics are not independent of each other. If UDF firms are likely to issue less-high quality debt than the LDF firms, that would explain the presence of restrictions and the lower offer yield. Therefore, in Panel B of Table 3, we examine the same issue in a probit regression framework. Specifically, our dependent variable takes the value 1 if it corresponds to an observation in our primary UDF sample and 0 for the LDF sample. As before, we do not control for macro-economic characteristics that affect the decision to issue since our sample firms are matched to the control by industry and year of issuance.

Firm characteristics – size, leverage, and return on assets – are positively related to the likelihood of the UDF firms issuing debt. Turning to debt characteristics, across all our models, the UDF firms offer significantly higher offer yields even after controlling for the other firm

characteristics and covenant restrictions. However when we expand the list of covenants in model 5, offer yield loses its significance. As in the univariate results, the UDF firms are significantly more likely to offer secured debt that is less likely to be of investment grade debt than their LDF counterparts. They are also significantly more likely to face payment restrictions.

#### *4.4. Comparing sample characteristics between unlisted and listed firms issuing additional public debt*

We now compare the “debt first” UDF firms to the control sample of listed LDA firms that issue seasoned public debt. As in Table 3, in Panel A, we report univariate statistics across two dimensions in Panel A of Table 4: comparisons between firm characteristics and characteristics of the public debt issued. Since the sub-period analysis is largely similar to the full sample period, for brevity, we again report univariate comparisons only for the entire period.

Differences between the UDF firms and the LDA firms are far more dramatic compared to the comparisons between the UDF and LDF firms. UDF firms are significantly smaller and younger than their LDA peers. Over the entire sample period, the median UDF firm has total assets of \$355 million versus \$1142 million for the corresponding median LDA firm. Similarly, sales are \$319 million and \$805 million for the two samples respectively. The median age is 10 years for the UDF firm at issuance versus 20 years for the LDA sample.

As before, growth opportunities are significantly lower for the UDF firms compared to the LDA firms. R&D/assets are significantly lower for the median UDF firm than for the median LDA firm. Consistent with the size differences, the amount of tangible assets in the firm, PPE/assets, is significantly lower. Industry-adjusted leverage is significantly higher for the UDF sample than for the LDA firms, with Debt/EBITDA of 1.83 and 0.59 respectively. Debt/book equity and the long-term debt/working capital ratio are also significantly higher for the UDF sample. However, as before, the interest coverage ratio is similar for the two samples.

Finally, as before, the UDF firms display significantly worse liquidity metrics than the LDF firms. Current, quick and cash ratios are all significantly lower than their listed counterparts. As in Table 3 Panel A, operating performance, as proxied by industry-adjusted ROA and operating ROA, is similar across the UDF and LDA samples. However, net profit, pre-tax profit, and cash flow margins are significantly lower for the UDF firms than the LDA benchmarks.

In the second part of Table 4 Panel A, we contrast the characteristics of the debt issued by these two types of firms. The results are broadly similar to those in Table 3. The offer yield is significantly higher at 11.4% in contrast to 7.4% for the LDA firms. The coupon rate and gross spreads are significantly higher. The higher gross spreads may be a reflection of the greater marketing and distribution effort required in placing a first time public debt issue for UDF firms in comparison with LDA firms which have established prior debt and equity market access. The debt issued by the UDF firms is less likely to be rated and less likely to be investment grade debt. Both Moody's and S&P rate the debt as lower quality than the debt issued by LDA firms.

An examination of the various restrictive covenants placed in bond indentures reveals some interesting results. While the UDF firms are more likely offer secured debt, face payment restrictions, and restrictions on stock issuance, they are less likely to face restrictions on default, anti-takeover and profit/net worth restrictions.

In Table 4 Panel B, we examine the issue decision in a probit regression framework. Specifically, our dependent variable takes the value 1 if it corresponds to an observation in our primary UDF sample and 0 for the LDA sample. As before, we do not control for macro-economic characteristics that affect the decision to issue since our sample firms are matched to the control by industry and year of issuance. Our results are broadly consistent with the univariate results.

Certain firm characteristics continue to remain significant once we control for the characteristics of the debt. Firm size is negatively related and prior leverage is positively associated with the likelihood of the UDF firms issuing debt. Turning to debt related characteristics, across all our models, the UDF firms exhibit significantly higher offer yields after controlling for other firm characteristics, even though the size of the debt offering is smaller. Similar to the univariate results, the UDF firms are significantly more likely to offer secured debt that is less likely to be investment grade than their LDA counterparts. They are also significantly more likely to face payment restrictions.

#### *4.5. What do the public "debt first" firms do subsequently?*

In unreported results, we examine the subsequent capital raising behavior of the 583 firms in our original sample of public debt issuers without any outstanding equity. Twenty percent of these firms access the public debt market again before issuing any public equity, raising an

additional \$20 billion of capital. Interestingly, only 27% of these issuers had a public debt rating in the earlier part of the sample period, versus 94% in the second half, indicative of a fundamental shift on the part of part of institutional shareholders to require a credit rating before considering inclusion in their fixed income portfolios.

An additional 20% of these 583 firms choose to tap the equity market subsequent to their public debt issue, without issuing any additional public debt. The average gap between the first public debt offering and the IPO for this subsample is 2.04 years versus 4.41 years for firms which tap public debt market multiple times prior to the IPO.

The remainder of the firms choose to remain private in our sample until the end of 2009 choosing to raise an additional \$120 billion of capital via the public debt markets. The average S&P rating for these firms continues to remain below investment grade in all years with the exception of 2007 – not surprising given the advent and rise of the high yield markets in the 1980s.

#### *4.6. Do public debt firms experience better issuance characteristics in subsequent offerings?*

One would expect unlisted “debt first” UDF firms to benefit from better pricing terms and less restrictive covenants in subsequent attempts at tapping the public debt markets given the establishment of public capital market access and the potential reduction in informational asymmetry. In Panel A of Table 5, we examine the debt characteristics, credit rating differences, and differences in covenants and other restrictions of the first debt issuance (for the unlisted “debt first” UDF sample) versus the characteristics of a subsequent debt issue prior to the IPO. The average offering size is slightly larger for the LDF sample – \$135 million versus \$123 million for the subsequent debt sample; but more importantly the offer yield improves by 88 basis points in the second go around. While not surprising, a larger fraction of the subsequent debt issues are rated – 88% versus 79% for the UDF sample; however, the median firm in the subsequent sample is rated lower than the median UDF firm by one notch. Besides a possible deterioration in a firm’s operating performance metrics, part of the rating deterioration may be attributable to greater conservatism on the part of the agencies, particularly Moody’s, where the median rating for the UDF firms has dropped by two notches between 1987-1992 and 2001-2007.

We also examine variability in the use of covenants and other restrictions across these two samples. As suggested by Mansi et al (2011) and others, the impact of covenants on a firm's likely bankruptcy and cost of funding can either be positive or negative depending on the magnitude of two offsetting effects. On the one hand, bondholders perceiving a higher likelihood of bankruptcy and significant shareholder-bondholder conflicts will tend to incorporate more covenants in their bond indentures. On the other hand, the effective use of covenants itself will allow management to make decisions that will reduce the likelihood of bankruptcy on a going forward basis.

Since a higher restrictions index score implies higher credit protection, it is surprising that the potential reduction in informational asymmetry one might expect between the first public debt and the subsequent debt issuance, does not result in significantly lower values for the various restrictions indexes. The higher likelihood of bankruptcy may be overriding the above effect.

In Table 5, Panel B we examine the determinants of the cross-sectional variability in offer yields across these two issuance samples. Offer yields for the first public issuance are 273 basis points higher (model 1). In subsequent models we control for a number of factors including the size of the offering, maturity, investment grade rating, firm age, profitability, leverage, performance. Even after controlling for these factor in models 2-4, the first public debt issuance dummy remains statistically significant, suggesting a 118 basis points higher offer yield for first time issuers. The investment grade rating dummy, not surprisingly, reduces the offer yield by 138 basis points (t-stat = -2.37). All other variables are not statistically significant. In model 5, we include a number of indexes capturing various restrictions placed in the bond indentures. Both the payment restrictions index and the profit/net worth restrictions indexes – restricting dividend payments and maintenance of minimum earnings/net worth – are positively related the offer yields. Both these variables are potentially proxying for the bond market's perception of higher credit risk. But most importantly, the dummy for the first time issuance of public debt becomes insignificant, suggesting that offer yields are not different across the two samples.

#### *4.7. Are “debt first” firms disadvantaged relative to listed firms issuing debt?*

In Table 6, we examine the debt, ratings, and covenant characteristics of UDF firms – relative to listed firms in the same industry and year group over the 1987-2007 period – in

explaining differences in offer yields. Firm size, as measured by assets, has a strong negative relationship with offer yield, consistent with the better pricing available to larger, more stable firms, with lower informational asymmetry. Leverage on the other hand, is positively correlated with offer yields. All other variables are not statistically significant. In model 6 which includes the “all covenants” index and various restrictions indices, the all covenants index, the payment restrictions index, and borrowing restrictions index are positive and statistically significant determinants of offer yields. The higher ex ante perceived likelihood of bankruptcy on part of the creditors, and the reduced financial and operating flexibility induced by these covenants, would provide a partial explanation for this result. Again, the subsequent issuance of public debt variable becomes insignificant after firm and covenant characteristics are controlled for.

#### *4.8. Are “debt first” firms disadvantaged relative to listed firms undertaking a first public debt issuance?*

Table 7 reports the regression results comparing offer yields for the UDF firms to the first public debt issuance by a publicly listed firm in the same industry and year. While the UDF sample exhibits a 166 to 355 basis points of incremental offer yield (models 1-3), the yield differential becomes insignificant after controlling for various debt, firm, and covenant characteristics (models 4-6). The all covenants index (in some models), and the asset and investment restriction index positively influences the offer yield while default restrictions are inversely correlated with yields. Since a higher index score is reflective of greater creditor protection, the positive correlation of the all covenants index and the investment restrictions index with offer yields may seem counterintuitive. But to the extent that the use of covenants itself may be proxying for bankruptcy risk, the sign of the coefficient makes sense. More specifically, limiting asset sales and restricting investment policies, while generally seem to be in the best interest of bondholders, can have adverse consequences in excessively constraining managerial flexibility; hence the higher observed offer yields.

### **5. How does a prior public debt issuance influence IPO dynamics?**

One inherent benefit of accessing the public debt market in the period leading up to the IPO, is the potential for reducing information asymmetry via a pre-established public market presence and familiarity on part of the investment community about the firm’s business model and overall

performance record. While most firms choose to use the IPO route, in Table 8 we compare the IPO characteristics of firms tapping the public capital markets for the very first time via an IPO, with IPO firms which have outstanding public debt (our primary “UDF” sample doing a subsequent IPO).

As expected, IPO underpricing as measured by first day returns for UDF firms going public is significantly lower versus the IPO sample: 14% versus 39% (Table 8). This suggests that on a percentage basis, the wealth transfer from issuing shareholders to the investing public is two-thirds smaller for those IPO firms who have previously tapped public debt markets – a surprisingly strong result – suggesting significantly less money left on the table for these firms. Gross spreads, management fees, underwriting fees, and selling concessions are also all significantly lower for the UDF sample. Also, the offer price exceeds the original high filing price (“Hot” IPO dummy) in 21% and 33% of the cases, for the UDF and IPO samples respectively; a lower proportion for the UDF sample is consistent with lower information asymmetry and more stable operating metrics of larger and more established firms. Not surprisingly, given the reduced informational asymmetry via a more prolonged certification process for these firms and the lower observed underpricing, managers are more willing to raise more capital – \$123 million versus \$40 million for the average UDF and the IPO samples respectively. Simplified back-of-the-envelope calculations show that extra costs of servicing the debt are more than offset by the reduction in IPO underpricing for UDF firms. The median UDF firm raises around \$120 million in public debt with median maturity of 10 years and pays, on average, a 4% higher coupon than its matched LDF counterpart (see table 3, Panel A). Assuming a constant corporate tax rate of 35% during our sample period and taking into account the tax shield on interest, the overall extra debt interest burden of a typical UDF relative to a typical LDF firms is around \$31 million over the course of 10 years, whereas the typical median UDF firm raises \$123 mil in IPO and has 25% lower underpricing, suggesting savings of around \$32 million.

Table 9 provides the multivariate results explaining the variability in IPO underpricing across the two samples. In models 1 and 2, controlling for various firm characteristics – age, profitability, liquidity, leverage, investment grade rating – we continue to find a statistically significant 13-15% lower underpricing for those firms who first tap public debt markets prior to undertaking an IPO. Older firms and firms with higher debt/book equity also exhibit lower

underpricing. In model 3, we include deal size and find a positive relation between size and the level of underpricing. This result may be an outcome of larger deals requiring a higher level of underpricing to create excess investor demand, hence ensuring a successful placement of all shares. The investment grade dummy is also significant in most models with economically large effects; a firm with an investment grade rating is likely to experience 31-49% lower underpricing relative to its non-rated or non-investment grade peers.

In model 4, we include other IPO characteristics and find a statistically negative relation between the number of non-book runners and the level of underpricing, consistent with the presence of a greater marketing and distribution effort in the book building process, consequently resulting in a higher offer price. Finally, in models 5 and 6 we include measures of underwriting fees, with higher fees – measured as gross spread/IPO amount – resulting in greater underpricing.

Controlling for all of the above factors, we also find that exchange on which the offer is listed is a significant determinant of underpricing, with NYSE and AMEX listed IPOs experiencing 19% and 14% lower underpricing, respectively, a likely function of the greater depth, liquidity and consequently the improved price discovery on the larger exchanges.

## **6. Conclusion**

In this paper, we analyze a sample of firms that choose to tap the public debt markets before going public via the public equity markets. These firms are typically significantly larger and less likely to have information asymmetry problems than traditional firms in the same industry and year. Their debt issues are more expensive and face more restrictive covenants than debt issues by publicly listed firms that tap the debt market for the first time or publicly listed firms that have public debt outstanding that issue subsequent additional public debt. However, when the debt-first firms eventually go public, they face lower underpricing than firms without public debt that undertake an initial public offering in the same industry.

Our results have significant tactical implications for firms choosing to access the public capital markets for the first time. We show that the reduction in information asymmetry at the time of the initial public debt offering reduces the offer yield at subsequent debt offerings and at the eventual IPO. Finally the proceeds at the eventual IPO are higher, underpricing is lower and fees paid to investment banks are lower suggesting that there are considerable benefits to the firm by choosing to tap the debt market prior to tapping the equity market.



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**Table 1. First public debt vs. first public equity issuance: number and size of issues, 1987-2007**

The primary sample (UDF) includes private unlisted firms (with no traded equity in CRSP and Compustat) that issue public debt for the very first time. Total amount of debt raised is from Mergent FISD and SDC. UEF is the control sample of unlisted firms without public debt outstanding issuing public equity for the first time in the same year and industry. LDF is the control sample of publicly listed firms that issue public debt for the first time in the same year and industry. LDA is the control sample of publicly listed firms with public debt outstanding that issue additional public debt in the same year and industry. In LDA sample, if a firm had multiple issues in a given year, the issue with the largest principal amount or the longest maturity is retained. SDC IPO equity issues include records with ipoflag='Yes' and security type of common/ordinary shares. Public debt issues include corporate bonds (bond types CDEB, CMTN, CMTZ, CCOV, CP, USBN, CS, CCPI, CPAS) from Mergent FISD and SDC. There are no firms in the UDF sample in 2008 and 2009.

Year	Unlisted firms issuing public debt for the first time (UDF)		Unlisted firms issuing equity (IPO) for the first time (UEF)		Listed firms issuing public debt for the first time (LDF)		Listed firms with public debt outstanding issuing additional debt (LDA)	
	Number	Total amount of debt raised, \$ mil.	Number	Total amount of equity raised, \$mil.	Number	Total amount of debt raised, \$ mil.	Number	Total amount of debt raised, \$ mil.
1987	37	3,749	220	6,752	51	2,494	27	2,613
1988	36	6,090	69	1,825	13	916	17	2,048
1989	28	3,580	42	1,661	9	941	17	4,117
1990	5	332	21	762	2	275	8	949
1991	8	1,077	36	1,634	5	334	13	2,335
1992	28	3,583	189	6,230	29	3,159	31	5,859
1993	40	5,159	248	9,046	56	4,190	48	7,117
1994	37	3,739	200	5,664	34	3,896	30	5,065
1995	19	1,853	114	6,399	37	3,719	36	6,305
1996	43	4,874	358	15,682	51	5,232	56	11,502
1997	87	7,834	307	13,097	100	7,889	93	18,431
1998	87	8,928	198	15,694	135	20,845	153	37,096
1999	37	3,601	338	27,933	66	11,599	71	25,353
2000	18	1,387	190	19,401	49	10,961	59	31,183
2001	18	3,673	3	1,410	11	5,588	50	22,134
2002	10	1,097	20	2,130	20	2,889	53	14,643
2003	14	1,780	11	2,630	14	1,144	52	14,430
2004	17	1,200	39	6,611	36	5,667	49	11,294
2005	6	925	18	2,614	16	1,931	20	3,980
2006	6	2,306	28	2,461	5	538	17	6,267
2007	2	170	5	852	5	475	9	3,188
Total	583	66,934	2,654	150,489	744	94,683	909	235,909

**Table 2. Unlisted “debt first” (UDF) vs. unlisted “equity first” (UEF) firms: Comparison of firm characteristics**

**Panel A** presents industry-adjusted (except for assets, sales and age) medians for UDF and UEF samples described in table 1 between 1987 and 2007. Wilcoxon test for the difference in medians between two samples is also reported. Assets and sales are AT and SALE from Compustat Fundamentals (annual). ROA is the sum of net income after extraordinary items (NI) and interest expense (XINT) scaled by (lag) assets. Age is from Capital IQ (computed based on yearfounded item). Operating ROA is operating income after depreciation (OIADP) scaled by (lag) assets. Net profit margin is net income before extraordinary items (IB) scaled by sales; gross-profit margin is sales net of costs of goods sold (COGS) divided by sales; pre-tax profit margin is Pre-Tax income (PI) divided by sales; cash flow margin is the sum of income before extraordinary items (IBC) and depreciation and amortization (DPC) divided by sales. R&D ratios are based on XRD, and PPE/Assets is property, plant and equipment (PPENT) as % of assets. Debt/EBITDA and Debt/Book equity are based on long-term debt (DLTT); book equity is from Daniel and Titman (2006); interest coverage is the interest expense (XINT) net of interest income (IDIT) divided by operating cash flow; net working capital is the difference between current assets (ACT) and current liabilities (LCT). Current ratio is the ratio of current assets to current liabilities; Quick ratio is current assets net of inventories (INVT) scaled by current liabilities, cash ratio is cash and short-term investments (CHE) divided by current liabilities. Expected default frequency is from Moody’s KMV. **Panel B** contains the results of the probit model where the dependent variable is 1 when the company chooses to issue public debt for the first time (UDF) and 0 if it decides to issue equity for the first time (UEF). Firm characteristics are industry-adjusted. Standard errors are clustered by year. P-values are reported in the parentheses.

Panel A: Univariate comparisons

Firm characteristics	Primary sample: Unlisted firms issuing public debt for the first time				Unlisted firms doing IPO				Difference in medians	Wilcoxon test (p-value)
	Entire period	1987- 1992	1993- 2000	2001- 2007	Entire period	1987- 1992	1993- 2000	2001- 2007		
<b>A. Age and size</b>										
Age (in years)	10	18	10	7	6	7	6	9	4	0.00
Assets	354.8	366.4	287.6	697.0	40.0	26.7	40.3	121.0	314.8	<.0001
Sales	319.3	416.8	231.7	538.6	28.0	31.3	26.7	100.2	291.3	<.0001
<b>B. Operating performance</b>										
ROA	0.011	0.014	0.011	0.006	-0.013	0.007	-0.023	0.010	0.02	<.0001
Operating ROA	0.013	0.013	0.005	0.022	-0.014	0.019	-0.027	0.008	0.03	<.0001
Net profit margin	-0.021	-0.025	-0.022	-0.005	-0.009	0.004	-0.020	0.012	-0.01	0.25
Gross-profit margin	-0.005	0.000	0.002	-0.021	0.015	0.023	0.017	-0.025	-0.02	0.38
Pre-Tax Profit Margin	-0.026	-0.032	-0.029	0.003	-0.016	0.005	-0.030	0.015	-0.01	0.10
Cash Flow Margin	-0.010	-0.015	-0.012	0.001	-0.017	0.001	-0.034	0.011	0.01	<.0001
<b>C. Growth opportunities</b>										
R&D/Sales	0.000	-0.003	0.000	-0.009	0.006	0.000	0.021	0.000	-0.01	<.0001
R&D/Assets	-0.004	-0.005	-0.002	-0.012	0.000	0.000	0.000	0.009	0.00	<.0001
PPE/Assets	0.001	-0.002	0.006	0.000	-0.032	-0.036	-0.032	-0.023	0.033	0.00

**D. Leverage**

Debt/EBITDA	1.835	1.836	1.742	2.124	-0.018	-0.134	-0.009	0.000	1.853	<.0001
Interest Coverage	-0.039	-0.078	-0.047	0.131	-0.011	-0.051	-0.009	0.007	-0.03	0.84
Debt/Book Equity ratio	1.422	3.182	1.410	0.712	-0.005	-0.036	-0.004	0.000	1.43	<.0001
Long-term Debt/Net Working Capital	2.005	1.635	1.720	5.200	-0.004	-0.033	-0.002	0.000	2.01	<.0001
KMV's EDF	0.138	-0.852	0.798	0.299	-0.257	-0.125	-0.329	-0.071	0.39	0.17

**E. Liquidity**

Current ratio	-0.201	-0.205	-0.241	-0.113	0.128	0.117	0.148	0.147	-0.33	<.0001
Quick Ratio	-0.134	-0.150	-0.151	-0.109	0.148	0.116	0.172	0.008	-0.28	<.0001
Cash Ratio	-0.058	-0.069	-0.052	-0.035	0.162	0.125	0.209	-0.015	-0.22	<.0001

Panel B. Probit model of the choice to issue debt or equity

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Log(Assets)	1.30 (0.00)	0.94 (0.00)	0.77 (0.01)	2.29 (0.00)	0.76 (0.01)	0.77 (0.01)	1.72 (0.00)
Log(age)			-0.04 (0.28)	0.04 (0.44)	-0.06 (0.14)	-0.04 (0.29)	-0.09 (0.19)
ROA				1.06 (0.01)	1.23 (0.00)		1.19 (0.03)
Net profit margin		0.08 (0.06)	0.04 (0.38)	0.09 (0.25)	-0.08 (0.12)	0.04 (0.38)	0.00 (0.98)
R&D/Assets				-2.16 (0.00)			-1.59 (0.08)
PPE/Assets				0.69 (0.03)		-0.11 (0.65)	-0.36 (0.41)
Debt/Book Equity		0.22 (0.00)	0.23 (0.00)		0.22 (0.00)	0.23 (0.00)	0.28 (0.00)
Debt/Net Working Capital		0.06 (0.00)	0.06 (0.00)		0.06 (0.00)	0.06 (0.00)	0.04 (0.06)
N	3,117	2,840	2,705	1,716	2,705	2,705	1,633

**Table 3. Unlisted “debt first” (UDF) vs. listed “debt first” (LDF) firms: Firm and debt characteristics**

**Panel A** reports the industry-adjusted medians for three groups of deal characteristics related to public debt issuance: debt issuance details, debt ratings and covenants between UDF and LDF samples for the period 1987-2007 (see sample definitions in table 1). The debt characteristics are from Mergent FISD and SDC debt issues databases. Moody’s and S&P ratings are converted to a numerical scale with S&P’s AAA (Moody’s Aaa) corresponding to 1 and CCC- (Caa2) corresponding to 19 (i.e., greater number indicates higher credit risk). The deal to prior debt ratio is the size of the deal scaled by the size of the previously outstanding debt. Rated dummy is 1 if the debt deal is rated and 0 otherwise. Investment grade dummy is 1 if the deal is rated BBB- (Baa3) or above. Gross spread is the difference between the price that issuer receives for its securities and the price that investors pay for them. Selling concession is the portion of the gross spread paid to other securities dealers in the offering syndicate for reselling the issue for the underwriter. Reallowance is the portion of selling concession that an underwriter foregoes if the issue is sold to another securities firm which is not a member of the underwriting syndicate. Secured debt dummy is 1 if the security is secured and 0 otherwise.

**Panel B** is a probit model where the dependent variable is 1 if the private firm chooses to issue debt for the first time (UDF) and 0 if the industry-year matched publicly listed firm without public debt outstanding chooses to issue public debt for the first time (LDF). “All covenants” index is a sum of 7 distinct covenant groups (payment, borrowing, asset and investment, stock issuance, default, antitakeover and profit). Covenant indexes and definitions are constructed similar to Mansi et al. (2011). Firm characteristics are industry-adjusted and defined as in Table 2. Standard errors are clustered by year. P-values are reported in the parentheses.

Panel A. Univariate characteristics

Sample Firm Characteristics	Primary sample: Unlisted firms issuing public debt for the first time (UDF)	Listed firms issuing public debt for the first time (LDF)	Difference	Wilcoxon test for medians
<b>I. Firm characteristics</b>				
<b>A. Age and size</b>				
Age (in years)	9	14	-5	<.0001
Assets	368.4	314.2	54.3	0.0264
Sales	296.9	223.0	73.9	0.0142
<b>B. Operating performance</b>				
ROA	0.009	0.005	0.005	0.1436
Operating ROA	0.005	0.009	-0.004	0.7104
Net profit margin	-0.022	0.008	-0.030	<.0001
Gross-profit margin	-0.007	0.008	-0.015	0.2861
Pre-Tax Profit Margin	-0.029	0.014	-0.043	<.0001
Cash Flow Margin	-0.010	0.017	-0.027	<.0001
<b>C. Growth opportunities</b>				
R&D/Sales	-0.002	0.000	-0.002	<.0001
R&D/Assets	-0.006	0.000	-0.006	<.0001
PPE/Assets	0.003	0.000	0.003	0.5523
<b>D. Leverage</b>				
Debt/EBITDA	1.626	0.669	0.957	<.0001
Interest Coverage	-0.008	-0.008	0.000	0.6096
Debt/Book Equity ratio	1.139	0.113	1.026	<.0001
Long-term Debt/Net Working Capital	1.522	0.539	0.983	0.0005
KMV's EDF	-0.007	-0.185	0.177	0.0748
<b>E. Liquidity</b>				
Current ratio	-0.199	0.092	-0.291	<.0001
Quick Ratio	-0.116	0.105	-0.221	<.0001
Cash Ratio	-0.047	0.049	-0.096	<.0001

Sample debt Characteristics	Primary sample: Unlisted firms issuing public debt for the first time (UDF)	Listed firms issuing public debt for the first time (LDF)	Difference	Wilcoxon test for medians
<b>II. Debt characteristics</b>				
<b>A. Debt details</b>				
Size of debt offering, \$ mil.	123.35	120.00	3.35	0.06
Offer Yield	11.38	7.11	4.27	<.0001
Deal to Prior Debt Ratio	1.01	1.55	-0.54	<.0001
Years to maturity	10.00	10.00	0.00	0.04
Coupon	11.00	7.00	4.00	<.0001
Gross Spread	29.50	25.00	4.50	0.34
Selling Concession	2.50	5.00	-2.50	<.0001
Reallowance	1.25	2.50	-1.25	0.00
Treasury Spread (basis points)	0.00	0.00	0.00	0.00
<b>B. Debt ratings</b>				
Rated dummy	0.79	0.70	0.10	0.00
Investment grade rated dummy	0.10	0.31	-0.21	<.0001
Moody's median rating (higher means lower rating)	14.04	12.24	1.80	<.0001
S&P median rating (higher means lower rating)	13.58	12.01	1.57	<.0001
<b>C. Covenants and other restrictions</b>				
Secured debt dummy	0.14	0.02	0.12	<.0001
Payment Restrictions Index	1.03	0.46	0.57	<.0001
Borrowing Restrictions index	2.15	1.08	1.07	<.0001
Asset and Investment Restriction Index	1.49	0.97	0.52	<.0001
Stock Issuance Restrictions Index	0.59	0.25	0.34	<.0001
Default Restrictions Index	0.51	0.48	0.03	0.41
Antitakeover Restrictions Index	1.03	1.05	-0.01	0.86
Profit/Net-Worth Restrictions Index	0.08	0.06	0.02	0.47



Panel B. Probit model of the characteristics of debt obtained

Variable	(1)	(2)	(3)	(4)	(5)
Log (Size of debt offering, \$ mil.)	0.13 (0.03)	0.16 (0.01)	0.13 (0.21)	0.19 (0.01)	0.21 (0.07)
Offer Yield	0.10 (0.00)	0.09 (0.00)	0.09 (0.00)	0.06 (0.00)	0.07 (0.01)
All covenants index	0.06 (0.00)	0.05 (0.00)	0.08 (0.00)		
Rated Dummy		0.05 (0.69)	-0.05 (0.79)	0.07 (0.61)	-0.09 (0.65)
Investment grade rated dummy		-0.60 (0.00)	-0.92 (0.00)	-0.53 (0.01)	-0.86 (0.02)
Log Assets			0.00 (0.00)		0.00 (0.02)
Log age			0.00 (0.37)		0.00 (0.54)
Net profit margin			-0.20 (0.18)		-0.22 (0.20)
Debt/Book Equity			0.04 (0.01)		0.03 (0.03)
ROA			3.60 (0.01)		3.56 (0.01)
PPE/Assets			0.20 (0.61)		0.05 (0.91)
Payment Restrictions Index				0.44 (0.00)	0.48 (0.01)
Borrowing Restrictions index				0.13 (0.04)	0.14 (0.08)
Asset and Investment Restriction Index				0.30 (0.01)	0.15 (0.34)
Stock Issuance Restrictions Index				0.15 (0.13)	0.11 (0.47)
Default Restrictions Index				-0.52 (0.01)	-0.11 (0.69)
Antitakeover Restrictions Index				-0.77 (0.00)	-0.65 (0.00)
Profit/Net-Worth Restrictions Index				-0.08 (0.04)	-0.15 (0.01)
N	641	641	381	641	381

**Table 4. Unlisted “debt first” (UDF) vs. listed “debt additional” (LDA) firms: Firm and debt characteristics**

**Panel A** reports the industry-adjusted medians for three groups of deal characteristics related to public debt issuance: debt issuance details, debt ratings and covenants between UDF and LDA samples for the period 1987-2007 (see sample definitions in table 1). The debt characteristics are from Mergent FISD and SDC debt issues database. Moody’s and S&P ratings are converted to a numerical scale with S&P’s AAA (Moody’s Aaa) corresponding to 1 and CCC- (Caa2) corresponding to 19 (i.e., greater number indicate higher credit risk). The deal to prior debt ratio is the size of the deal scaled by the size of the previously outstanding debt. Rated dummy is 1 if the debt deal is rated and 0 otherwise. Investment grade dummy is 1 if the deal is rated BBB- (Baa3) or above. Gross spread is the difference between the price that issuer receives for its securities and the price that investors pay for them. Selling concession is the portion of the gross spread paid to other securities dealers in the offering syndicate for reselling the issue for the underwriter. Reallowance is the portion of selling concession that an underwriter foregoes if the issue is sold to another securities firm which is not a member of the underwriting syndicate. Secured debt dummy is 1 if the security is secured and 0 otherwise.

**Panel B** is a probit model where dependent variable is 1 if the unlisted firm chooses to issue debt for the first time (UDF) and 0 if the industry-year matched publicly listed firm with public debt outstanding chooses to issue additional public debt (LDA). “All covenants” index is a sum of 7 distinct covenant groups (payment, borrowing, asset and investment, stock issuance, default, antitakeover and profit). Covenant indexes and definitions are constructed similar to Mansi et al. (2011). Firm characteristics are industry-adjusted and defined as in table 2. Standard errors are clustered by year. P-values are reported in the parentheses.

Sample Firm Characteristics	Panel A. Univariate statistics			
	Unlisted firms issuing public debt for the first time (UDF)	Publicly Listed firms with public debt in place issuing additional public debt (LDA)	Difference	P-Value
<b>I. Firm characteristics</b>				
<b>A. Age and size</b>				
Age (in years)	10	20	-10	<.0001
Assets	354.8	1142.5	-787.7	<.0001
Sales	319.3	805.0	-485.6	<.0001
<b>B. Operating performance</b>				
ROA	0.011	0.006	0.004	0.486
Operating ROA	0.013	0.010	0.002	0.950
Net profit margin	-0.021	0.004	-0.025	<.0001
Gross-profit margin	-0.005	0.014	-0.019	0.162
Pre-Tax Profit Margin	-0.026	0.006	-0.032	<.0001
Cash Flow Margin	-0.010	0.014	-0.024	<.0001
<b>C. Growth opportunities</b>				
R&D/Sales	0.000	0.000	0.000	0.032
R&D/Assets	-0.004	0.000	-0.004	0.033
PPE/Assets	0.001	0.024	-0.024	0.309
<b>D. Leverage</b>				
Debt/EBITDA	1.835	0.593	1.242	<.0001
Interest Coverage	-0.039	0.037	-0.076	0.133
Debt/Book Equity ratio	1.422	0.153	1.269	<.0001
Long-term Debt/Net Working Capital	2.005	1.197	0.808	0.013
KMV's EDF	0.138	-0.128	0.265	0.167
<b>E. Liquidity</b>				
Current ratio	-0.201	-0.044	-0.158	0.002
Quick Ratio	-0.134	-0.021	-0.112	0.003
Cash Ratio	-0.058	-0.008	-0.050	0.004

Sample Debt Characteristics	Unlisted firms issuing public debt for the first time (UDF)	Publicly Listed firms with public debt in place issuing additional public debt (LDA)	Difference	Wilcoxon test for medians
<b>II. Debt characteristics</b>				
<b>A. Debt details</b>				
Size of debt offering, \$ mil.	123.35	196.50	-73.15	<.0001
Offer Yield	11.38	7.42	3.95	<.0001
Deal to Prior Debt Ratio	1.01	0.50	0.52	<.0001
Years to maturity	10.00	10.00	0.00	0.32
Coupon	11.00	7.85	3.15	<.0001
Gross Spread	29.50	7.50	22.00	<.0001
Selling Concession	2.50	4.00	-1.50	0.04
Reallowance	1.25	2.50	-1.25	<.0001
Treasury Spread (basis points)	0.00	90.00	-90.00	<.0001
<b>B. Debt ratings</b>				
Rated dummy	0.79	0.89	-0.10	<.0001
Investment grade rated dummy	0.10	0.40	-0.30	<.0001
Moody's median rating (higher means lower rating)	14.04	12.41	1.63	<.0001
S&P median rating (higher means lower rating)	13.58	11.39	2.20	<.0001
<b>C. Covenants and other restrictions</b>				
Secured debt dummy	0.14	0.04	0.10	<.0001
Payment Restrictions Index	1.03	0.79	0.23	<.0001
Borrowing Restrictions index	2.15	2.14	0.01	0.61
Asset and Investment Restriction Index	1.49	1.56	-0.06	0.01
Stock Issuance Restrictions Index	0.59	0.46	0.13	0.00
Default Restrictions Index	0.51	0.69	-0.18	<.0001
Antitakeover Restrictions Index	1.03	1.38	-0.34	<.0001
Profit/Net-Worth Restrictions Index	0.08	0.05	0.03	0.12

Panel B. Probit model of the characteristics of debt obtained

Variable	(1)	(2)	(3)	(4)	(5)
Log (Size of debt offering, \$ mil.)	-0.259 (0.00)	-0.213 (0.00)	-0.025 (0.77)	-0.145 (0.01)	0.060 (0.51)
Offer Yield	0.123 (0.00)	0.121 (0.00)	0.112 (0.00)	0.093 (0.00)	0.074 (0.00)
All covenants index	0.025 (0.00)	0.005 (0.55)	0.006 (0.64)		
Rated Dummy		-0.584 (0.00)	-0.689 (0.00)	-0.614 (0.00)	-0.830 (0.00)
Investment grade rated dummy		-0.761 (0.00)	-0.414 (0.04)	-0.728 (0.00)	-0.281 (0.24)
Log Assets			-0.0001 (0.02)		-0.0001 (0.02)
Log age			0.000 (0.86)		-0.001 (0.48)
Net profit margin			0.001 (0.98)		-0.035 (0.71)
Debt/Book Equity			0.013 (0.01)		0.012 (0.02)
ROA			0.865 (0.24)		0.962 (0.24)
PPE/Assets			-0.074 (0.81)		-0.182 (0.56)
Payment Restrictions Index				0.458 (0.00)	0.688 (0.00)
Borrowing Restrictions index				0.011 (0.80)	-0.010 (0.89)
Asset and Investment Restriction Index				0.059 (0.46)	-0.176 (0.18)
Stock Issuance Restrictions Index				0.095 (0.13)	0.046 (0.61)
Default Restrictions Index				-0.293 (0.05)	0.007 (0.97)
Antitakeover Restrictions Index				-0.592 (0.00)	-0.542 (0.00)
Profit/Net-Worth Restrictions Index				0.012 (0.91)	-0.077 (0.64)
N	1,264	1,264	924	1,264	924

**Table 5. Do unlisted “debt first” (UDF) firms receive better terms on subsequent public debt issues?**

The table shows how unlisted “debt first” UDF firms fare in their subsequent public debt issue for the period 1987-2007. Only subsequent issues which are more than 30 days after IPDO are considered. **Panel A** reports univariate results while **Panel B** reports coefficients from multivariate regressions, where the dependent variable is the offer yield of the corresponding debt issue. The dummy for first issuance of public debt is 1 if it is the first issue of public debt and 0 if it is a subsequent issue by the firms in our UDF sample. The size of debt offering and other debt characteristics are from Mergent FISD and SDC debt issues databases and are defined as in Table 4. Firm characteristics are industry-adjusted and defined as in table 2. “All covenants” index is a sum of 7 distinct covenant groups (payment, borrowing, asset and investment, stock issuance, default, antitakeover and profit). Covenant indexes and definitions are constructed similar to Mansi et al. (2011). Standard errors are clustered by year. T-statistics are reported in italics.

Panel A: Univariate statistics

Sample debt characteristics	Unlisted firms issuing public debt for the first time (UDF)	Unlisted firms (UDF) issuing the closest subsequent public debt following IPDO	Difference	Wilcoxon test P-Value
<b>A. Debt details</b>				
Size of debt offering, \$ mil.	123.35	135.00	-11.65	0.02
Offer Yield	11.38	10.50	0.88	0.00
Deal to Prior Debt Ratio	1.01	0.87	0.14	0.54
Years to maturity	10.00	9.00	1.00	<.0001
Coupon	11.00	10.50	0.50	<.0001
Gross Spread	29.50	21.28	8.22	0.01
Selling Concession	2.50	3.88	-1.38	0.70
Reallowance	1.25	1.25	0.00	0.52
Treasury Spread (basis points)	0.00	0.00	0.00	0.19
<b>B. Debt ratings</b>				
Rated dummy	0.79	0.88	-0.09	0.00
Investment grade rated dummy	0.10	0.09	0.01	0.67
Moody's median rating (higher means lower rating)	14.04	15.01	-0.97	0.00
S&P median rating (higher means lower rating)	13.58	14.66	-1.08	<.0001
<b>C. Covenants and other restrictions</b>				
Secured debt dummy	0.14	0.13	0.01	0.63
Payment Restrictions Index	1.03	1.73	-0.71	<.0001
Borrowing Restrictions index	2.15	3.68	-1.54	<.0001
Asset and Investment Restriction Index	1.49	2.67	-1.17	<.0001
Stock Issuance Restrictions Index	0.59	1.02	-0.43	<.0001
Default Restrictions Index	0.51	0.90	-0.39	<.0001
Antitakeover Restrictions Index	1.03	1.78	-0.75	<.0001
Profit/Net-Worth Restrictions Index	0.08	0.10	-0.02	0.37

Panel B. Multivariate regression

Variable	(1)	(2)	(3)	(4)	(5)
Dummy for first issuance of public debt	2.73 (11.54)	2.05 (7.07)	1.73 (4.77)	1.18 (2.27)	0.46 (1.01)
Log (Size of debt offering, \$ mil.)		-0.02 (-0.12)	-0.11 (-0.42)	-0.02 (-0.04)	0.40 (0.86)
Secured debt dummy			0.21 (0.17)	-0.71 (-0.44)	-0.58 (-0.34)
Investment grade rated dummy			-1.58 (-3.76)	-1.38 (-2.37)	-1.13 (-1.87)
Years to maturity			0.04 (0.07)	-0.27 (-0.56)	-0.15 (-0.32)
Deal to Prior Debt Ratio			-0.05 (-0.33)	0.07 (0.57)	0.19 (1.83)
Log Assets				0.00 (0.19)	0.00 (-0.65)
Log age				0.00 (-0.32)	0.00 (-0.45)
Net profit margin				0.78 (2.48)	0.58 (1.69)
Debt/Book Equity				-0.03 (-1.36)	-0.03 (-1.77)
ROA				-1.79 (-0.77)	-3.63 (-1.18)
PPE/Assets				1.17 (0.62)	2.00 (1.30)
All covenants index		0.16 (4.59)	0.06 (1.12)	0.12 (1.67)	
Payment Restrictions Index					1.26 (2.73)
Borrowing Restrictions index					0.29 (1.11)
Asset and Investment Restriction Index					0.33 (1.06)
Stock Issuance Restrictions Index					-0.36 (-0.48)
Default Restrictions Index					-0.59 (-1.35)
Antitakeover Restrictions Index					-1.65 (-4.88)
Profit/Net-Worth Restrictions Index					1.44 (2.49)
N	641	641	335	235	235

**Table 6. Are unlisted “debt first” (UDF) firms disadvantaged relative to listed (LDA) firms? Comparison of characteristics of subsequent public debt issues**

The table reports the regression results showing how the subsequent public debt issues by firms in our unlisted “debt first” (UDF) sample fare when compared to the additional public debt issuance by publicly listed firms in the same industry-year group (LDA) during 1987-2007 sample period. The dependent variable is the offer yield of the corresponding issue. “Subsequent issuance of public debt” is 1 if the issue is the subsequent public debt issue by the UDF firm and 0 if it is an additional public debt issue by industry-year matched publicly listed firms (LDA). The size of debt offering and other debt characteristics are from Mergent FISD and SDC debt issues database. The deal to prior debt ratio is the size of the deal scaled by the size of the previously outstanding debt. Investment grade dummy is 1 if the deal is rated BBB- (Baa3) or above. Secured debt dummy is 1 if the security is secured and 0 otherwise. Firm characteristics are industry-adjusted and defined as in table 2. “All covenants” index is a sum of 7 distinct covenant groups (payment, borrowing, asset and investment, stock issuance, default, antitakeover and profit). Covenant indexes and definitions are constructed similar to Mansi et al. (2011). Standard errors are clustered by year. T-statistics are reported in italics.

Variable	(1)	(2)	(3)	(4)	(5)	(6)
Subsequent issuance of public debt dummy	2.28 (9.37)	2.26 (9.71)	1.06 (5.44)	0.83 (5.04)	0.21 (0.91)	0.19 (0.77)
Log (Size of debt offering, \$ mil.)		-0.16 (-0.81)	-0.17 (-1.11)	-0.14 (-0.73)	0.13 (0.49)	0.33 (0.32)
Secured debt dummy				0.83 (1.85)	0.41 (0.69)	0.15 (0.22)
Investment grade rated dummy				-0.78 (-1.78)	0.53 (1.25)	0.19 (0.33)
Years to maturity				0.44 (1.46)	0.36 (1.15)	0.54 (1.90)
Deal to Prior Debt Ratio				0.01 (0.08)	0.04 (0.41)	-0.02 (-0.19)
Log Assets					-0.32 (-2.53)	-0.48 (-3.80)
Log age					-0.01 (-1.03)	-0.01 (-1.23)
Net profit margin					-0.52 (-0.95)	-0.57 (-1.11)
Debt/Book Equity					0.36 (2.38)	0.27 (1.78)
ROA					-1.42 (-0.71)	-0.87 (-0.45)
PPE/Assets					0.64 (0.87)	0.70 (1.03)
All covenants index			0.26 (7.82)	0.20 (4.51)	0.22 (3.78)	
Payment Restrictions Index						0.88 (2.35)
Borrowing Restrictions index						0.34 (3.17)
Asset and Investment Restriction Index						0.50 (1.61)
Stock Issuance Restrictions Index						0.00

						(-0.01)
Default Restrictions Index						-0.40
						(-1.04)
Antitakeover Restrictions Index						-1.41
						(-2.93)
Profit/Net-Worth Restrictions Index						-0.40
						(-0.76)
<hr/>						
N	886	886	886	567	442	442
<hr/>						



**Table 7. Do unlisted “debt first” (UDF) firms do better or worse relative to the listed (LDF) firms? Comparison of characteristics of initial public debt offerings**

The table reports the regression results showing how unlisted “debt first” UDF firms (see sample definition in table 1) fare when compared to the first public debt issuance by industry-year matched publicly listed firms (LDF) during 1987-2007. The dependent variable is the offer yield of the corresponding issue. “First issuance of public debt” dummy is 1 if the issue is the first public debt issue by the UDF firm and 0 if it is the first public debt issue by LDF firm. The size of debt offering and other debt characteristics are from Mergent FISD and SDC debt issues databases. The deal to prior debt ratio is the size of the deal scaled by the size of the previously outstanding debt. Investment grade dummy is 1 if the deal is rated BBB- (Baa3) or above. Secured debt dummy is 1 if the security is secured and 0 otherwise. Firm characteristics are industry-adjusted and defined as in table 2. “All covenants” index is a sum of 7 distinct covenant groups (payment, borrowing, asset and investment, stock issuance, default, antitakeover and profit). Covenant indexes and definitions are constructed similar to Mansi et al. (2011). Standard errors are clustered by year. T-statistics are reported in italics.

Variable	(1)	(2)	(3)	(4)	(5)	(6)
First issuance of public debt	3.40 (8.55)	3.55 (8.54)	1.66 (3.93)	0.75 (1.42)	1.16 (1.63)	0.43 (0.61)
Size of debt offering, \$ mil.		-0.52 (-2.66)	-0.51 (-3.09)	-0.15 (-0.37)	0.40 (0.48)	-0.06 (-0.08)
Secured debt dummy				0.22 (0.31)	-1.21 (-1.13)	-1.25 (-1.36)
Investment grade rated dummy				-2.54 (-3.18)	-1.29 (-1.12)	-0.91 (-1.07)
Years to maturity				0.51 (0.64)	0.74 (0.84)	0.50 (0.47)
Deal to Prior Debt Ratio				0.44 (1.33)	0.58 (0.61)	1.00 (1.20)
Log Assets					-0.60 (-1.33)	-0.37 (-0.95)
Log age					-0.01 (-0.74)	-0.01 (-0.80)
Net profit margin					0.33 (0.30)	1.02 (0.71)
Debt/Book Equity					0.16 (0.55)	0.01 (0.04)
ROA					-1.09 (-0.28)	-3.03 (-0.82)
PPE/Assets					1.50 (1.07)	1.98 (1.34)
All covenants index			0.26 (6.25)	0.11 (1.77)	0.08 (0.57)	
Payment Restrictions Index						0.23 (0.32)
Borrowing Restrictions index						0.14 (0.60)
Asset and Investment Restriction Index						1.05 (2.85)
Stock Issuance Restrictions Index						0.14 (0.25)

Default Restrictions Index						-2.14
						(-2.34)
Antitakeover Restrictions Index						-1.15
						(-1.71)
Profit/Net-Worth Restrictions Index						1.25
						(2.39)
<hr/>						
N	547	547	547	224	126	126
<hr/>						

**Table 8. Unlisted firms with and without public debt outstanding: Comparison of terms of subsequent IPO**

This table reports the average first day IPO return and binary dummies (means) and other IPO characteristics (medians) between firms with existing public debt that went public in our sample (234 firms out of 583) and industry-year matched unlisted firms that went public without any public debt outstanding. IPO characteristics are obtained from the SDC equity issuance database. The first day return is the difference between the closing price on the first day of trading and the offer price scaled by the offer price. "Hot" IPO dummy equals 1 if the offer price exceeds the original high filing price in the prospectus and 0 otherwise. The syndicated dummy is 1 if the IPO is syndicated and 0 otherwise. The rest of the variables are self-explanatory. The last column reports p-values for the Wilcoxon difference-in-medians non-parametric test.

Sample IPO Characteristics	Primary Sample: Unlisted firms with PD in place going public	Control sample: Unlisted firms without PD in place going public in the same industry-year	Difference	P-Value
First day return (mean)	0.14	0.39	-0.25	<.0001
"Hot" IPO dummy	0.21	0.33	-0.12	0.005
Number of non-bookrunners (mean)	8.93	6.94	1.99	<.0001
Syndicated Dummy (1 if yes, 0 otherwise)	0.93	0.83	0.10	0.002
Number of book runners (mean)	1.38	1.06	0.32	<.0001
Number of Lead, Co-Lead and Co-managers (mean)	4.21	2.79	1.42	<.0001
Number of Managers (mean)	4.21	2.79	1.42	<.0001
Number of Managers including international managers	11.31	8.11	3.20	<.0001
Offer Price/Original high filing price (median)	0.93	1.00	-0.07	0.002
Gross Spread as % of Principal Amount (median)	6.75	7.00	-0.25	<.0001
Management fee as % of Principal Amount (Median)	1.38	1.41	-0.04	<.0001
Underwriting fee as % of Principal Amount (median)	1.38	1.44	-0.07	<.0001
Selling Concession as % of Principal Amount (median)	3.94	4.14	-0.20	<.0001
Reallowance Fee as % of Principal Amount (median)	0.63	0.83	-0.21	<.0001
Principal amount raised (\$ mil., median)	123.03	40.00	83.03	<.0001
Principal amount per book runner (\$ mil., median)	98.00	39.20	58.80	<.0001
Gross Spread as % of Offer Price (median)	6.75	7.00	-0.25	<.0001
Management fee as % of Gross Spread (median)	20.00	20.19	-0.18	0.004
Reallowance as % of Selling Concession (median)	16.42	20.00	-3.58	<.0001
Selling Coincession as % of Gross Spread (median)	60.00	59.18	0.82	<.0001
Underwriting fee as % of Gross Spread (median)	20.00	20.54	-0.54	<.0001
Net proceeds (less fees & expenses) as % of Proceeds (median)	0.92	0.91	0.02	<.0001
Net proceeds (less fees) as % of Proceeds (median)	0.93	0.93	0.00	<.0001

**Table 9. Unlisted firms with and without public debt outstanding: IPO underpricing**

This table reports fixed-effects regression results showing how the unlisted firms with existing public debt fare in terms of their subsequent IPOs compared to the unlisted firms that went public without public debt. The dependent variable is the IPO first-day return. IPO characteristics are obtained from the SDC equity issuance database. The IPO of UDF firm dummy equals 1 if the IPO is by the firm with existing public debt and 0 if it is an IPO by the firm without public debt outstanding. Investment grade dummy is 1 if the deal is rated BBB- (Baa3) or above. Firm characteristics are industry-adjusted and defined as in table 2. The syndicated dummy is 1 if an IPO is syndicated and 0 otherwise. NYSE, AMEX, Small Cap Issue and OTC are the dummies indicating on which exchange the IPO first began trading. The rest of the variables are self-explanatory. The year fixed effects are included. P-values are in the parentheses.

Variable	(1)	(2)	(3)	(4)	(5)	(6)
IPO of UDF firm	-0.13*** (0.00)	-0.15*** (0.00)	-0.16*** (0.00)	-0.15*** (0.00)	-0.19*** (0.00)	-0.16*** (0.00)
Investment Grade dummy	-0.11 (0.26)	-0.45 (0.00)	-0.49*** (0.00)	-0.48*** (0.00)	-0.35*** (0.01)	-0.31*** (0.00)
<b>Firm Characteristics</b>						
log assets		0.03*** (0.01)	-0.001 (0.95)	-0.004 (0.81)	-0.00 (0.95)	0.0035 (0.95)
log age		-0.04*** (0.00)	-0.04*** (0.00)	-0.04*** (0.00)	-0.03*** (0.00)	-0.03*** (0.01)
ROA		0.01 (0.91)	0.01 (0.79)	0.01 (0.88)	0.03 (0.67)	0.04 (0.64)
Net profit margin		0.02 (0.31)	0.02 (0.32)	0.02 (0.28)	0.02 (0.28)	0.02 (0.27)
PPE/Assets		-0.02 (0.79)	-0.02 (0.73)	-0.04 (0.59)	-0.03 (0.66)	-0.03 (0.68)
Debt/Book Equity		-0.002*** (0.01)	-0.002*** (0.01)	-0.002*** (0.00)	-0.002*** (0.02)	-0.002*** (0.03)
Current Ratio		0.01* (0.06)	0.01** (0.04)	0.01** (0.05)	0.01* (0.06)	0.01* (0.09)
<b>Deal size</b>						
IPO Amount Raised			0.06** (0.01)	0.09*** (0.00)	0.13*** (0.00)	0.16*** (0.00)
Net Proceeds less fees and expenses			-0.29 (0.48)	-0.13 (0.75)	1.87*** (0.00)	1.49*** (0.01)
<b>Other IPO characteristics</b>						
Syndicated Dummy				-0.06 (0.14)	-0.01 (0.86)	-0.02 (0.73)
Number of bookrunners				0.02 (0.55)	0.06 (0.24)	0.07 (0.19)
Number of non-bookrunners				-0.01*** (0.00)	-0.01*** (0.00)	-0.01*** (0.00)
Number of Managers				-0.004 (0.71)	-0.006 (0.62)	-0.003 (0.84)
<b>Fees</b>						
Gross spread as % of IPO amount					0.17***	0.16***

					(0.00)	(0.00)
Management fee as % of IPO amount					-0.09	-0.06
					(0.18)	(0.37)
Underwriting fee as % of IPO amount					-0.07*	-0.07*
					(0.09)	(0.08)
<b>Listing Exchange</b>						
NYSE						-0.19***
						(0.00)
AMEX						-0.14***
						(0.01)
Small Cap issue						-0.01
						(0.89)
OTC						0.01
						(0.88)
<hr/>						
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Adj R <sup>2</sup>	0.19	0.21	0.22	0.23	0.25	0.26
N	1530	1413	1413	1413	1265	1265
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