The Choice Between Private And Public Convertible Bond Offerings

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Abstract

Studied in this paper is the impact of information asymmetry, agency conflicts, flotation costs, and financial distress costs on the choice between private and public placements of convertible bond issues. In it its author finds that the level of information asymmetry between insiders and outside investors is the most important factor in the placement decision. This finding is consistent with the argument that private offering investors are better informed about the firm and certify firm quality. Firms susceptible to high agency costs due to risk-shifting, underinvestment, and free cash flow problems also prefer private placements for convertible bonds. However, the economic impact of agency costs on the placement choice is lower than that of information asymmetry. Also found is that, possibly due to the lower fixed issue costs of these placements, firms with smaller issues prefer private offerings. Expected financial distress costs do not affect the placement decision of convertible bond issuers.

Introduction

Bonds can be sold as a public issue to investors at large or placed privately with a few investors. In a public offering, after the issue is approved by a firm's board of directors, the issuing firm prepares and files a registration statement with the Securities and Exchange Commission (SEC). If accepted, the registration statement becomes effective 20 days later, and the bond can be sold to the public. In a private placement, firms do not have to go through the SEC registration process and can raise funds faster with lower flotation costs. It is also easier to renegotiate a private placement because there are fewer investors involved. However, since private placements are not offered to the general public, they are less suitable for very large offerings. These placements are also less liquid since they do not trade in secondary markets.

There have been several studies on the placement structure of bonds. For example, Blackwell and Kidwell (1988) show that utility firms choose the type of debt placement that provides the lowest transaction costs. Easterwood and Kadapakkam (1991) argue that information asymmetry is a major determinant in firms' choice between private and public placement of debt. Krishnaswami, Spindt, and Subramaniam (1999) show that firms with small issues and high moral hazard problems have higher proportions of private debt in their capital structure. Denis and Mihov (2003) study the choice among bank debt, non-bank private debt, and public debt and find that the credit quality of the issuer is the main determinant of the debt source.

The focus of prior studies has been debt in general, and none of them analyzes the placement structure of convertible debt separately. These studies either exclude convertible debt from their samples or combine straight debt and convertible debt in one sample. However, the determinants of the placement choice of convertible debt might be different since convertible debt has equity-like characteristics as well as debt-like characteristics. For instance, Myers and Majluf (1984) show that information sensitive securities face higher adverse selection costs. Hence, the equity-like characteristics of convertible debt may cause information asymmetry problems to be a more important determinant in the private-public placement choice.

Information sensitive securities are securities whose prices change more than other securities when new information is revealed about a firm. Since convertible debt has equity-like characteristics as well as that of debt, it is more information sensitive than straight debt.

Analyzed here is the impact of information asymmetry, agency conflicts, flotation costs, and financial distress costs on the choice between private and public placements of convertible debt issues. Our sample consists of 78 private and 229 public placements of convertible bonds issued by industrial firms between 1983 and 2002. The results show that the primary determinant of the

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placement choice for convertible debt is a firm's information asymmetry problems. We find that firms with higher levels of information asymmetry are more likely to choose private placements. This result is consistent with the argument that investors in private placements establish closer relations with the issuing firm and can, therefore, value the firm more accurately. This result also indicates that the commitment of better informed investors in private placements signal favorable information to the market.

We find that agency costs of risk-shifting, underinvestment, and free cash flow problems also affect the placement choice. Firms with higher agency costs are more likely to choose private placements for their convertible bond offerings. This result shows that, when investors have a close relationship with the debt issuing firm, the risk-shifting and underinvestment problems are mitigated. This result also suggests that the better monitoring offered by private investors will reduce the misuse of free cash flows. Our analysis on the economic impact of each variable in the logistic regressions shows that, although important, agency problems are less influential than information asymmetry in the choice between private and public placements. This finding is consistent with the argument that by design convertible bonds already have low agency problems since they mitigate the risk-sifting and underinvestment problems.

Prior studies show that the fixed component of the flotation costs of public placements is higher than those of private placements. Based on this argument, hypothesized here is that firms with smaller convertible bond issues will prefer private issues in order to lower the flotation costs. Our results provide strong support for this hypothesis. We find that flotation costs have a statistically and economically significant impact on the convertible debt placement decision. We do not find support for the hypothesis that firms with high expected financial distress costs prefer private placements for their convertible bond offerings due to rescheduling, renegotiation, and reorganizational advantages offered by this placement structure.

We now turn to: (1) the theoretical arguments found in prior studies on the convertible debt placement decision; (2) a review of prior empirical evidence; (3) the presentation of hypotheses developed based on theoretical arguments and empirical findings in the literature; (4) a discussion sample characteristics; and (5) conclusions.

Arguments on the Private-Public Placement Choice

There are several factors that might affect the placement choice of convertible bond offerings. Prior studies suggest that the major factors are the level of information asymmetry between insiders and outside investors, agency

costs of debt and free cash flow, the expected costs of financial distress, and the flotation costs of debt issues. In the following four sections of this paper the arguments of prior studies on each factor is detailed.

Information Asymmetry

Managers and outside investors have asymmetric information because managers know more about the firm's future prospects than does a typical investor. Hence, firms with unfavorable prospects will sell securities in order to bring in new investors to share their losses. On the other hand, when the prospects of the firm are very good, the firm should avoid selling these securities in order to avoid sharing the profits with the new investors. Therefore, security offerings signal that the firm's prospects are not bright and result in adverse selection costs.

Myers and Majluf (1984) argue that under information asymmetry adverse selection costs are particularly high for securities that have equity characteristics such as convertible bonds. When firms lack internal resources to fund projects, they might need to sell undervalued securities. In these cases managers might choose to forego valuable investment opportunities in order to protect the interest of the current shareholders.

Private placements might alleviate the information asymmetry problems associated with security issuance. James (1987) shows that private placement purchasers are better informed about the issuing firm than public placement investors. In private placements investors are better able to assess the true value of the firm which, in turn, prevents the need to abandon profitable investment opportunities. Private placements of debt might also signal positive information to the market. Szewczyk and Varma (1991) argue that in a private placement investors gain access to detailed financial information and their commitment serves as quality certification. Dierkens (1991), Korajczyk, Lucas, and McDonald (1992), and Bayless and Chaplinsky (1996) show that, when firms have high information asymmetry, the effect of the signal associated with security issues is higher. Therefore, private placements are more advantageous for firms with high information asymmetry since the effect of the positive signal of the offerings will be higher for these firms.

Agency Costs

An agency relationship is formed when a person (principal) hires another person (agent) to perform services on his behalf and delegates him decision-making authority. Agents will take actions in their self-interest if they do not have incentives to do otherwise or they are not constrained in their actions. Agency problems also exist in financial markets and the market participants can take actions such as monitoring the agent in order to reduce the costs associated with these relations.

Agency problems of risk shifting and underinvestment arise between stockholders and bondholders when debt financing is combined with the limited liability of shareholders. Risk-shifting occurs when the firm substitutes riskier assets for less risky assets (Jensen and Meckling, 1976). Shareholders of leveraged firms have incentives to undertake riskier projects since they have bounded downside potential due to limited liability, but enjoy unbounded upside potential. Underinvestment is the problem of foregoing positive NPV projects when the value of the project is less than the face value of debt plus the initial investment[1]. Shareholders might choose to underinvest since they receive only the cash flows that remain after the liabilities of the firm are paid. There are also agency problems between managers and shareholders when managers do not own 100 percent of the firm. This type of agency problem is exacerbated when the firm has high levels of financial slack (free cash flow). Jensen (1986) argues that managers might use financial slack for their own benefits, thereby reducing firm value.

Smith and Warner (1979) argue that private placements of debt provide better monitoring of the issuing firm since they have detailed restrictive covenants. As a result, private placements should reduce the agency costs of risk-shifting, underinvestment, and free cash flow problems of convertible bond issues. Since agency costs are anticipated by bondholders at the time of the issue, shareholders ultimately bear these costs. Therefore, firms with high agency costs have incentives to reduce these costs through private placements.

Financial Distress

Financial distress occurs when a firm's operating cash flows are not sufficient to cover current financial obligations. Firms in financial distress incur both direct and indirect costs. Direct costs include lawyer fees as well as administrative and accounting fees. Indirect costs are the costs of impaired ability to perform normal business activities. Altman (1984) shows that the total direct and indirect costs of financial distress are often greater than 20 percent of firm value.

Prior studies suggest that firms with a high probability of financial distress and firms that incur high costs in case of financial distress would prefer private debt compared to public debt. Denis and Mihov (2003) indicate that regulations provide private lenders a higher flexibility of renegotiation compared to public placements. Any major changes to bond indentures must be approved unanimously by public bondholders which might cause holdout problems for publicly traded bonds. Cantillo and Wright (2000) argue that in financial distress, privately held debt allows for "less damaging intervention". Firms with a high risk of default will need the reorganizational skills of private lenders and, hence,

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[1] Myers (1977) argues that having a close relationship with the debt issuer mitigates the underinvestment problem.

prefer to borrow from these sources. Similarly Sy (1999) argues that, when credit risk is high, managers prefer private debt placements because of the value gains and the private benefits they obtain from renegotiating the debt restrictions that are less flexible compared to public issues.

Flotation Costs

Flotation costs include the direct and indirect expenses of security issues. Direct expenses are the underwriter's spread, filing fees, legal fees, and taxes. Indirect expenses include management time on the new issue. Flotation costs can range from less than one percent to 20 percent of gross proceeds.

Prior studies suggest that the flotation costs for private issues are lower than those for public issues. These studies show that there is a fixed component in issuance costs which is higher for public issues. For example, Blackwell and Kidwell (1988) argue that compensation of the investment banker is higher in public placements. Since the number of investors is higher, the distribution costs are also higher for public placements. Moreover, the legal fees, accountants' fees and trustees' fees are higher for public offerings because registration, certified financial statements, and bond counsel's opinion are required by SEC.

Prior Empirical Evidence on Private and Public Debt Offerings

Several prior empirical studies analyze the placement choice of debt. These studies show that information asymmetry is an important factor in the choice between private and public offerings. One of the prior studies that investigate the influence of information asymmetry is Easterwood and Kadapakkam (1991), who examine the choice between private and public placement of debt for Fortune 500 firms. They find that medium sized firms prefer private markets more than larger firms do. Since smaller firms are more prone to asymmetric information problems, this finding indicates that information asymmetry is a critical determinant of the debt placement choice. Easterwood and Kapadakkam also find that private placement is an important source of funds for firms in general because private debt constitutes 60 percent of the long-term debt in their sample.

Szewczyk and Varma (1991) provide evidence on the signaling affect of private debt offerings under information asymmetry. They analyze the stock price effects of private offerings of utility firms and find that these offerings result in a positive stock price reaction. This finding is consistent with the arguments that information asymmetry problems are avoided in a private placement, and that the willingness of the better informed investors to participate in a private placement serves as a quality certification of the issuing firm. Szewczyk and Varma also find that the stock price reaction is more favorable for larger issues, which indicates

that larger positions by well-informed buyers signal more favorable information to the market participants.

Fields and Mais (1991) study the stock price effects of private placements of convertible bonds. They find that the average announcement returns from the private sales of convertible bonds is significantly positive. This result is consistent with the argument that private placements avoid information asymmetry problems by selling the securities to a small number of well-informed investors. As in Szewczyk and Varma (1991), Fields and Mais find a positive relation between issue size and the announcement returns, which suggests that management's ability to place larger issues conveys more favorable information to the market.

Information asymmetry is also one of the factors that Krishnaswami et al. (1999) analyze in their study on the cross sectional variation of firms' privately placed long-term debt. Their sample consists of large firms that have access to both private and public markets. Krishnaswami et al. find that firms with greater potential information asymmetries issue more private debt. They also find that firms that have favorable information about their future value and earnings and have high information asymmetry use more private debt.

Prior studies find that agency costs are also important in the placement choice of debt. For example, Blackwell and Kidwell (1988) examine the cost differences of private and public placements of debt issued by utility firms and find that firms choose private placements due to the higher agency costs in public markets. Private placements have higher agency costs because they have more detailed covenants, and they more frequently include renegotiation provisions. Krishnaswami et al. (1999) also find that firms with high agency costs of debt prefer to place the issue privately due to the greater monitoring associated with these placements. Szewczyk and Varma (1991) argue that their finding of a positive reaction to private placements of debt can be the result of closer monitoring of the management that reduces agency costs.

The impact of financial distress on the placement choice of debt has also been tested. Easterwood and Kadapakkam (1991) hypothesize that private debt can avoid formal default by allowing the firms to reschedule the debt payments. However, their empirical analysis does not indicate a relationship between the proportion of private debt and financial distress variables.

Prior studies find support for the argument that flotation costs affect the choice between private and public debt. For example, for firms that have access to both public and private markets, Blackwell and Kidwell (1988) find that smaller and riskier firms choose private markets due to the higher flotation costs in the public markets. Private placements also provide lower yields when interest rates are volatile and the search costs are high. These firms would have paid an average of 132 basis points more to sell debt publicly. Hence, Blackwell and

Kidwell conclude that firms choose the placement method that results in the lowest transaction costs. The cross sectional analysis of Easterwood and Kadapakkam (1991) also shows that firms with low levels of debt rely on private markets because these firms have high fixed costs of public issuance and small gains from the liquidity of public markets. Similarly Krishnaswami et al. (1999) find that larger firms and firms with larger issues have lower proportion of private debt since they can take advantage of the economies of scale in issuance costs of public offerings.

Hypotheses on the Choice between Private and Public Convertible Debt Offerings

The following hypotheses are based on the theories and empirical findings of prior studies in the literature. Studies show that private placements might reduce information asymmetry problems of security issues because those who invest in these placements are better informed about the firm's future prospects. With high information asymmetry the effect of the positive signal associated with the quality certification of these better informed investors might also be alleviated. Although no study tests the impact of information asymmetry on the placement decision of convertible bonds, consistent with the theoretical arguments, empirical studies show that, in general, firms with high information asymmetry prefer private offerings of debt. These arguments suggest there is a positive relation between information asymmetry and the likelihood of private convertible bond issuance.

H1: Firms with high information asymmetry will be more likely to choose private placements compared to public placements for their convertible bond offerings.

Prior studies also suggest that private placements reduce the agency costs of risk-shifting, underinvestment, and free cash problems since their restrictive covenants provide better monitoring. Consistent with this argument, empirical studies show that firms with high expected agency costs issue debt privately. Smith and Watts (1992), Froot, Scharfstein, and Stein (1993), and Barclay and Smith (1995) argue that the costs of risk-shifting and underinvestment problems are higher for firms with more growth options because there is greater conflict between shareholders and bondholders over the exercise of the options for these firms. Hence, it is hypothesized that firms with high growth opportunities will choose to place debt privately. Also hypothesized is that firms with higher financial slack will choose private placements since the better monitoring by better-informed investors will reduce the agency costs due to free cash problems.

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H2a: Firms with high growth opportunities will be more likely to choose private placements compared to public placements for their convertible bond offerings.

H2b: Firms with high levels of financial slack will be more likely to choose private placements compared to public placements for their convertible bond offerings.

Hertzel and Smith (1993) argue that information asymmetry problems faced by security issuers are more intense for firms that have high investment opportunities and those with little financial slack. Firms with valuable investment opportunities have more to lose when managers forego valuable projects in order to avoid the adverse selection costs. Hence, these firms are more likely to issue convertibles privately. Also, firms with little financial slack will be more motivated to raise funds in order to avoid foregoing the investment opportunities. Since firms with limited cash will suffer considerably when the firm does not issue securities due to adverse selection costs, firms with high information asymmetry and limited financial slack can be expected to prefer private issues as well.

H3a: Firms with high growth opportunities will be more likely to choose private placements compared to public placements for their convertible bond offerings when they have high information asymmetry.

H3b: Firms with low levels of financial slack will be more likely to choose private placements compared to public placements for their convertible bond offerings when they have high information asymmetry.

Theories developed in prior studies indicate that private placements allow firms higher flexibility in rescheduling and renegotiating debt payments. In case of default private lenders might also assist the firm reorganize better. Hence, firms with higher expected financial distress costs should prefer private placements for their debt issues. Easterwood and Kapadakkam (1991) do not find support for these arguments. However, their finding might be influenced by the existence of a large number of straight bonds in their sample. Hence, in this study we test the validity of the theories for the case of convertible bond offerings.

The H3 group of hypotheses is different from the H2 group because information asymmetry is included in the analysis. As a result, analyzed in the H3 group is how the level of information asymmetry affects the relation between growth opportunities and placement choice and between financial slack and the placement choice. The H3 group is tested by the interactive terms in logit regressions in Table Five on page 19.

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H4: Firms with high expected financial distress costs will be more likely to choose private placements compared to public placements for their convertible bond offerings.

Prior research suggests that flotation costs are lower for private offerings. Empirical studies show that the fixed component in issuance costs are higher for public offerings and, therefore, firms with small issues choose private placements. Hence, it is expected that flotation costs are a major factor in the placement decision of convertible bonds. Hypothesized is that the likelihood of private convertible bond issuance decreases with the size of the issue.

H5: Firms with smaller issues will be more likely to choose private placements compared to public placements for their convertible bond offerings.

Data Selection and Sample Characteristics

The privately and publicly placed convertible bond data is obtained from Securities Data Corporation's (SDC) New Issues Database[2]. Included in the sample are completed convertible bond offerings with maturities greater than one year issued between 1983 and 2002. The sample consists of firms with asset sizes exceeding $100 million. Because we study why firms that have access to both public and private markets prefer private placements, very small firms that might not have access to public markets[3] are excluded. Also excluded are shelf-registered offerings. The sample is restricted to issues made by industrial firms since regulated firms might have different motives for raising capital, such as showing evidence of the cost of capital (Eckbo, 1986; Slovin, Sushka and Polonchek, 1991). All issue-related data was obtained from SDC; firm-related data from COMPUSTAT; and stock price and return data from CRSP. The final sample consists of 78 privately placed issues made by 74 firms and 229 publicly placed issues made by 191 firms[4].

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[2] SDC is a database provided by Thomson Financial Services. The public offerings in this database include all issues underwritten in the U.S. and are updated daily. The data for public offerings is gathered from SEC filings, prospectuses, news sources, wires, and daily surveys of underwriters and other corporate finance contacts of the company. Private placements in the database include all issues placed privately with U.S. investors by private placement agents and are updated semi-annually. Private placement data is obtained through surveys of placement agents and financial news sources.

[3] Denis and Mihov (2003) argue that SDC data excludes smaller issues. However, since our sample includes larger firms (which tend to issue larger issues), this is not a problem.

[4] 20 of the total 245 firms in our sample issued both private and public convertible bonds during the sample period. However, none of these firms made both private and public offerings in the same year. Hence, the firms might have changed the type offering as a result of the change in their characteristics over the years.

Table One (below) presents the frequency distribution of the offerings and firms by year. The number of privately and publicly placed offerings fluctuated considerably over the sample period. While there were no private convertible bond placements that met our sample selection criteria in 1984, the largest number of private placements occurred in 2001 (11 offerings). The largest number of public convertible bond offerings was in 1987 with 38 offerings followed by 37 offerings in 1986.

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Table One
Frequency Distribution of Offerings

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The sample consists of privately and publicly placed convertible debt offerings completed during the period 1983-2002 by industrial companies. We require that issuer firms have at least $100 million of assets and that all issues have issue dates recorded in the Securities Data Corporation database.

Year	Private Offerings		Public Offerings	
	Offerings	Firms	Offerings	Firms
1983	2	2	25	25
1984	0	0	4	4
1985	7	7	11	11
1986	7	7	37	35
1987	6	6	38	36
1988	2	2	8	8
1989	4	4	19	19
1990	3	3	4	4
1991	4	4	9	9
1992	4	4	4	4
1993	3	3	16	15
1994	2	2	6	6
1995	1	1	6	5
1996	4	4	11	11
1997	5	5	8	8
1998	3	3	6	6
1999	2	2	1	1
2000	2	2	7	7
2001	11	11	9	9
2002	6	6	0	0
Total	78	78	229	223
Total number of unique firms		74		191

The median coupon rate of private offerings is 6.25 percent, while that of public offerings is 7.56 percent. Although the average maturity of private offerings

is higher than that of public offerings, the median maturity is lower. The average (median) maturity is 47 (12) years for private offerings and 18 (20) years for public offerings.

Table Two (page 12) shows the characteristics of the convertible bond issues and issuers in the sample. The average private convertible bond issuer is larger than an average public issuer. Mean total assets are $ 7,462 million for private issuers and $ 2,327 million for public issuers. The average market value of equity, defined as the common stock price of the firm multiplied by the number of shares outstanding, is $ 3,180 million for private issuers and $2,120 million for public issuers. An average firm in the sample has a mean (median) debt ratio of 32 (29) percent. Debt ratio is defined as the sum of long-term debt and debt in current liabilities, divided by total assets. Private and public convertible bond issuers in the sample have similar debt ratios. The average (median) debt ratio is 33 (30) percent for private placements and 31 (29) percent for public placements offerings[5]. The median call protection period in the sample is five years. This period is also five years for private offerings and eight years for public offerings.

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[5] To see the whether outliers affect the statistics on debt maturity, we also calculate the mean and medians after winsorizing one percent of each tail. The deletion of these observations decreased the mean (median) maturity of the sample to 16.33 (18.11) years. The mean (median) maturity of the private convertibles also decreased to 8.35 (7.06) years, while those of public offerings remained the same.

Table Two
Summary Statistics of Issue and Firm Characteristics

The sample consists of privately and publicly placed convertible debt offerings completed during the period 1983-2002 by industrial companies. We require that issuer firms have at least $100 million of assets, and that all issues have issue dates recorded in the Securities Data Corporation database. The table presents the mean (median) values of the descriptive measures. Total assets are the current assets plus net property, plant, and equipment plus other noncurrent assets. Market value of equity is the closing common stock price at the fiscal year-end multiplied by the number of common shares outstanding. Debt ratio is the sum of long-term debt and debt in current liabilities, divided by total assets. Coupon rate is the ratio of coupon payment to the face value of the bond. Maturity is the number of years until final maturity of the bond. Call protection period is the number of years before the bond can be called back. Probability of conversion is the risk-neutralized probability that the bond will be converted into equity. Firm-specific variables are obtained from Compustat and measured at the fiscal year-end prior to the issue. Issue-related variables are obtained from SDC database. Stock price data is from CRSP.

Variable	All Offerings	Private Offerings	Public Offerings
Total assets	3631.80 (690.30)	7462.10 (828.20)	2327.15 (681.12)
Market value of equity	2386.92 (622.80)	3180.35 (635.47)	2120.07 (620.83)
Debt ratio (%)	31.57 (28.97)	33.37 (29.88)	30.96 (28.85)
Coupon (%)	7.32 (7.25)	6.48 (6.25)	7.56 (7.56)
Maturity	25.15 (20.28)	46.82 (11.54)	17.76 (20.29)
Call protection period	21.15 (5.15)	26.77 (4.55)	17.74 (8.15)
Probability of conversion	0.36 (0.31)	0.07 (0.08)	0.37 (0.31)

Table Two also shows the average and median probability of conversion for the convertible bond issues in the sample.Lewis, Rogalski and Seward (1999) argue that a high probability of conversion indicates that the convertible bond is more equity-like, whereas low probability of conversion indicates a debt-like bond. As in Lewis et al., we measure probability of conversion by the risk-neutralized probability that the bond will be converted into equity. In the option pricing equation $N(d_2)$ represents the ex-ante probability that the option will be exercised in a risk-neutral world. $N(\cdot)$ is the cumulative probability under the standard normal distribution and:

$$d_2 = \frac{\ln(S/X) + (r - div - \sigma^2/2)T}{\sigma\sqrt{T}}.$$

where *S* is the price of the firm's stock on the convertible bond issue date; *X* is the conversion price; *r* is the risk-free rate calculated as the continuously compounded annual yield on 10-year T-bonds in the issue month; *div* is the continuously compounded dividend yield during the fiscal year preceding the issue date; σ is the standard deviation of the continuously compounded equity return estimated over 240 to 40 trading days prior to the issue day; and *T* is the number of years until maturity. The results in Table 2 show that private offerings are more debt-like than public offerings. The median probability of conversion is eight percent for privately placed debt and 31 percent for public placements. This result is consistent with the argument that firms that choose private issues are the ones that face high informational asymmetries. These firms might structure their bond issues to be more debt-like in order to reduce the adverse selection costs.

In Table Three (page 14), the reasons firms stated for the offerings is examined. In it the sample is split into two parts: (1) private and (2) public offerings. Analyzed is the reason for the offering within each sub-sample. This table shows that the reason for convertible bond issuance is different for private and public debt placements. For example, half of the firms that issue privately placed debt state intended to use the proceeds as "general purpose," while only 35 percent of public bond issuers state used the proceeds this way. The proportions of general purpose issues in private and public offerings are significantly different from each other at 5 percent level. Also, the funds from about 40 percent of public issues is used to refinance existing debt, while the funds from only 33 percent of private issues is used for this purpose. Similarly, about 6 percent of public issues are used for acquisition financing compared to two percent of private offerings.

Table Three
Stated Reasons for Public and Private Offerings

The sample consists of privately and publicly placed convertible debt offerings completed during the period 1983-2002 by industrial companies. We require that issuer firms have at least $100 million of assets and that all issues have issue dates recorded in the Securities Data Corporation (SDC) database. The table presents the reasons private and public convertible bond issuers stated for the offerings. The stated purpose of each issue is obtained from SDC database. The numbers in brackets are Chi-square statistics testing the null hypothesis that the proportion of offerings with each stated reason in the private offerings sub-sample is equal to the proportion in the public offerings sub-sample. [a], [b], and [c] denote significant level at 1, 5 and 10 percent respectively.

Purpose	Private Offerings	Public Offerings
Refinancing	32.81 %	39.63 % (0.9119)
General Purpose	50.00 %	35.37 % (4.1264 [b])
Acquisition Financing	1.56 %	6.10 % (2.0619)
Multiple Purposes	15.63 %	18.29 % (0.2265)
Other Purposes	0.00 %	0.61 % (0.3920)
Total	100.00 %	100.00 %

Empirical Analysis

Univariate Results

To test the hypotheses about the determinants of the choice between private and public placements of convertible bonds, we initially perform univariate analysis. Tested in Table Four (page 16) is whether firms that choose private placements have higher levels of asymmetric information compared to firms that place their bonds publicly. As in Dierkens (1991) and Krishnaswami and Subramaniam (1999), information asymmetry is measured by the dispersion in the market-adjusted daily stock returns in the year preceding the issue. Information asymmetry is higher when managers have a large amount of firm-specific information that market participants do not have. To the extent that the investors and managers are equally well-informed about the economy-wide factors that affect firm value, the residual volatility in the firm's stock returns indicates the level of information asymmetry between investors and the managers about firm-specific information. Hence, the dispersion in market-

adjusted returns captures the level of firm-specific uncertainty that remains after the uncertainty common to managers and investors is removed from the total uncertainty. We hypothesized that private convertibles alleviate information asymmetry problems since the investors of these offerings are better informed and are more likely to value the firm accurately (James, 1987). Private placements also signal positive information to the market since the commitment of the better informed investors sends a positive signal to the market (Szewcyk and Varma, 1991). Hence, firms with high information asymmetry should prefer private convertibles. Consistent with this hypothesis, we find that the average dispersion in returns is about 0.61 for private bond issuers compared to 0.46 for public issuers. The difference in the average dispersion of returns is significant at one percent.

Table Four
Univariate Analysis of the Placement Choice

The sample consists of privately and publicly placed convertible debt offerings completed during the period 1983-2002 by industrial companies. We require that issuer firms have at least $100 million of assets and that all issues have issue dates recorded in the Securities Data Corporation (SDC) database. The table presents the univariate analysis of the determinants of the choice between private and public offerings of convertible bonds. Dispersion in stock returns is measured as the standard deviation of the stock returns of the issuing firm in days –240 to –40 relative to the issue date of each debt issue. Issue size is the proceeds of the debt issue divided by the total assets of the firm. Market-to-book ratio is defined as the closing price of the fiscal year multiplied by the number of common shares outstanding divided by the book value of common equity. Financial slack is the ratio of (operating income before depreciation minus capital expenditures minus change in net working capital minus net taxes minus change in deferred taxes) to total assets. Altman's Z is a combination of several financial ratios where a high z-value indicates low probability of bankruptcy. High bankruptcy cost industry is the percentage of firms in the machinery and equipment industry (SIC code between 3400 and 3999). Firm-specific variables are obtained from Compustat and measured at the fiscal year-end prior to the issue. Issue-related variables are obtained from SDC database. Stock return data is from CRSP. For each continuous variable the mean value is presented first followed by the median value in parenthesis. The numbers in Difference column represent p-values of t-tests (Wilcoxon tests) for the differences in means (medians) for the continuous variables. For high bankruptcy cost industry indicator variable the figure in the Difference column is the Chi-square statistics testing the null hypothesis that the proportion of private offerings in the machinery and equipment industry is equal to the proportion for the public offerings. [a], [b], and [c] denote significant level at 1, 5 and 10 percent respectively.

Variable	Private Offerings	Public Offerings	Difference
Dispersion in stock returns	0.6057 (0.4783)	0.4635 (0.4237)	0.0033 [a] (0.0179 [b])
Issue size	0.1567 (0.1152)	0.3097 (0.1594)	0.0005 [a] (0.0235 [b])
Market-to-book	3.9001 (2.0660)	2.3431 (1.9220)	0.0708 [c] (0.4814)
Financial slack	85.2847 (13.8730)	24.606 (1.9170)	0.4304 (0.2675)
Altman's Z	3.8291 (3.1620)	3.6577 (3.1440)	0.6649 (0.7058)
High bankruptcy cost industry (%)	24.36	29.69	0.8156

Also hypothesized is that private placements reduce the risk-shifting, underinvestment and free cash flow problems through better monitoring associated with these offerings. Since the risk-shifting and underinvestment problems are more severe for firms with high growth options, we expect these firms to particularly prefer private placements. Barclay and Smith (1995) argue that the firm's balance sheet does not include intangible assets like growth

options and growth options increase firm's market value in relation to its book value. Hence, we proxy the extent of the growth opportunities of the firm with the market-to-book ratio defined as the stock price multiplied by the company's common shares outstanding divided by common equity. Consistent with this hypothesis we find that the mean and median market-to-book ratio is higher for private offerings compared to public offerings, although only the difference in the means is significant. In Table Four financial slack (free cash flow) is defined as the ratio of (operating income before depreciation minus capital expenditures minus change in net working capital minus net taxes minus change in deferred taxes) to total assets. This measure shows the cash flow in excess of that required to finance the projects and pay for the tax obligations of the firm. We find that firms that place convertible bonds privately have higher levels of financial slack compared to firms that use public placements. However, the difference in the mean and median levels of financial slack is not significant. Hence, the hypothesis that private placements reduce free cash flow problems is not supported.

Also tested is whether expected financial distress costs affect the decision to choose between private and public placements of convertible bond issues. Prior studies show that private offerings might allow firms to avoid formal default (Easterwood and Kadapakkam, 1991); provide flexibility in renegotiation of debt (Sy, 1999; Denis and Mihov, 2003); and offer better reorganization following financial distress (Cantillo and Wright, 2000). Hence, firms with a high probability of financial distress and firms that incur high distress-related costs in case of default should choose private placements for their convertible bond offerings. The likelihood of financial distress is measured with Altman's Z-score. This variable is a function of several firm-specific variables and is calibrated so that higher scores represent lower probability of distress[6]. Altman (1968) finds that his model can correctly assign 95 percent of the sample firms in bankrupt and non-bankrupt groups. Table 4 shows that the average and median Altman's Z-scores are not significantly different for private and public offerings. Titman (1984) and Titman and Wessels (1988) argue that the liquidation costs and, therefore, the expected bankruptcy costs are higher for firms with unique products. The workers and suppliers of these firms have job-specific skills and capital, and the customers might find it difficult to find alternative service providers for the unique products. Therefore, following Titman and Wessels (1988) and Fisher, Heinkel, and Zechner (1989), we measure expected bankruptcy costs with an indicator

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[6] As in Altman (1968) the Z-score is calculated as

$Z = 0.012X_1 + 0.014X_2 + 0.033X_3 + 0.006X_4 + 0.999X_5$ where X_1 = Working Capital/Total Assets, X_2 = Retained Earnings/Total Assets, X_3 = Earnings Before Interest and Taxes/Total Assets, X_4 = Market Value of Equity/Book Value of Total Debt, and X_5 = Sales/Total Assets. Grice (2000) shows that the bankruptcy prediction models like Altman's are better than auditors at signaling the future prospects of companies.

variable that takes the value of one for firms in the machinery and equipment industry (SIC code between 3400 and 3999) and zero otherwise. The results indicate that the percentage of private bond issuers with higher expected bankruptcy costs is 24.36 percent, while the percentage for public issuers is 29.69 percent. The difference in the percentages is insignificant. These results show that financial distress costs do not affect the placement choice of convertible debt.

Also hypothesized is that firms with smaller issues prefer private offerings since the fixed component in the flotation costs of these issues are higher for public issues (Blackwell and Kidwell, 1988). For example, the investment banker's compensation is lower in private placements because the investment banker serves only as a finder that brings together the issuers and investors. The distribution costs are also lower in private placements because the number of investors is smaller. We measure issue size by the proceeds raised from the issue divided by the total assets of the firm. Consistent with our hypothesis, we find that the issue size is smaller for private convertible bond issues[7]. On average, the proceeds of the new issues represent about 16 percent of the assets of private issues compared to 31 percent for public issues. The difference in the mean and median issue sizes are significant and consistent with the findings of Blackwell and Kidwell (1988).

Logit Regression Results

In Table Five (page 19) logit regressions are used to study the determinants of the choice between private and public convertible bonds. With this incremental approach we are able to relate the placement decision of the company with the firm characteristics. In the regressions in Table Five, the dependent variable is an indicator variable that takes the value of one for private offerings and zero for public offerings. The regressions confirm our earlier findings for the influence of information asymmetry on the placement choice. The coefficient of the dispersion in returns is positive and significant at one percent in all regressions. Hence, even after we account for other variables that might affect the choice between private and public convertibles, the results show that firms with high information asymmetry are more likely to use private markets for their convertible debt. Logit regressions also show that firms that issue smaller offerings are more likely to choose private placements. This result confirms the univariate analysis results and shows that flotation costs are important considerations in debt placement. Firms with smaller issues do not want to incur the higher fixed costs of public placements and therefore prefer private issues[8].

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[7] Our finding on issue size is also consistent with the argument that firms with smaller issues find private offerings more convenient and avoid the hassles of public offering procedures.
[8] We also use the natural logarithm of the proceeds of the issue to measure issue size. This alternative proxy also has a negative coefficient in the logit regressions and confirms our results.

Table Five
Logit Analysis of the Placement Choice

The sample consists of privately and publicly placed convertible debt offerings completed during the period 1983-2002 by industrial companies. We require that issuer firms have at least $100 million of assets and that all issues have issue dates recorded in the Securities Data Corporation database. The table presents the logit analysis on the determinants of the choice between private and public offerings of convertible bonds. The dependent variable takes the value of one for private offerings and zero for public offerings. Dispersion in stock returns is measured as the standard deviation of the stock returns of the issuing firm in days –240 to –40 relative to the issue date of each debt issue. Issue size is the proceeds of the debt issue divided by the total assets of the firm. Market-to-book ratio is defined as the closing price of the fiscal year multiplied by the number of common shares outstanding divided by the book value of common equity. The interaction variable return dispersion is the information asymmetry indicator variable that takes the value of one for dispersion of stock returns greater than the sample median and zero otherwise. Financial slack is the ratio of (operating income before depreciation minus capital expenditures minus change in net working capital minus net taxes minus change in deferred taxes) to total assets. Bankruptcy industry is an indicator variable that takes the value of one for firms in the machinery and equipment industry (SIC code between 3400 and 3999) and zero otherwise. Altman's Z is a combination of several financial ratios where a high Z-value indicates low probability of bankruptcy. Chi-squared statistics are presented in parentheses. a, b, c represent significance at the 1percent, 5 percent, and 10 percent levels respectively.

	Regressions				
	1	2	3	4	5
Intercept	-2.0392 [a] (24.3446)	-1.6448 [a] (21.4126)	-2.3922 [a] (20.9282)	-2.4690 [a] (20.6067)	-2.2448 [a] (17.2378)
Dispersion in stock returns	1.6258 [a] (8.2278)	1.5344 [a] (8.6086)	2.0704 [a] (8.1350)	2.0928 [a] (8.2440)	2.1797 [a] (8.3220)
Issue size	-1.8047 [b] (4.3336)	-1.8813 [b] (4.8729)	-1.7729 [b] (3.5664)	-1.8303 [b] (3.7135)	-2.0072 [b] (4.1889)
Market-to-book			0.2157 [c] (3.2447)	0.1919 (2.3416)	0.2391 [b] (3.6779)
Market-to-book × Return dispersion			-0.1710 (1.9613)	-0.1567 (1.6411)	-0.1780 (1.9320)
Financial slack			0.000746 [c] (2.6903)	0.000779 [c] (2.8462)	0.000811 [c] (2.9111)
Financial slack × Return dispersion			-0.00098 (1.4418)	-0.00101 (1.5226)	-0.00100 (1.4652)
Bankruptcy Industry		-0.3533 (1.1169)			-0.8021 [c] (3.3892)
Altman's Z	0.0727 (2.0276)			0.0315 (0.2546)	
Year	0.4171 (1.7390)	0.4916 (2.6572)	0.3732 (1.1064)	0.3662 (1.0703)	0.2933 (0.6550)
Likelihood Ratio	22.5157 [a]	26.5423 [a]	26.3576 [a]	26.6027 [a]	30.0797 [a]
Concordant Responses	66.4 %	68.4 %	69.5 %	69.8 %	71.6 %
N	264	281	222	222	222

The coefficients of the market-to-book ratio and financial slack are overall positive in the regressions in Table Five. This result is consistent with the hypothesis that the better monitoring offered by the investors of private placements results in lower agency costs. Hence, firms with higher potential risk-shifting, underinvestment, and free cash flow problems prefer private offerings over public offerings. Also hypothesized is that firms with high information asymmetry problems are more likely to choose private placements when they have better investment opportunities and/or little financial slack. In Table Five we test this hypothesis using interactive variables. The first interactive variable is composed of the product of the market-to-book ratio of the firm and an information asymmetry dummy variable. The information asymmetry dummy takes the value of one for firms with dispersion in stock returns higher than the sample median and zero otherwise. A positive coefficient for this interactive variable indicates that firms with better investment opportunities and high information asymmetry are more likely to choose private placements. The second interactive variable is the product of the financial slack and the information asymmetry dummy. The coefficient of neither of these variables is significant. Therefore, we do not find support for the argument of Hertzel and Smith (1993) that information asymmetry problems are more costly for firms with high investment opportunities and firms with little financial slack.

Also confirmed in Table Five are the univariate results on the influence of the expected bankruptcy costs on the choice between private and public convertible debt placement. We find that the coefficients of the bankruptcy cost dummy and Altman's Z variables are overall insignificant. Hence, we do not find support for our hypothesis that firms with high expected bankruptcy costs are more likely to issue private convertible bonds. This result is consistent with Easterwood and Kadapakkam's (1991) finding for debt in general.

Our results might have been influenced by the changing market conditions during the sample period. In order to account for the impact of the market conditions on the convertible bond placement choice in each regression, we also include a dummy variable that takes the value of one for issues made in the second half of the sample period and zero for those made in the first half. The coefficient of this variable is insignificant in all regressions. This result indicates that the time period of issuance does not affect the placement choice of convertible bonds.

Measured in Table Six (page 22) is the relative economic impact of each variable included in Models four and five of Table Five. Two methods are used to estimate the relative impact of each variable on the convertible bond placement choice: marginal probabilities and step-wise regressions. In Panel A the marginal probabilities show the relative magnitude of the effect of each variable on the choice between private and public placements of convertible bonds. Marginal probability is calculated as the increase in the probability that the dependent

variable takes the value of one for a one quartile change in the value of each independent variable, while holding all other independent variables constant at their medians. In other words, the economic impact of each variable is measured by the increase in the probability of issuing private convertible bonds for a change in the independent variable from its median to either the 25th or 75th percentile (whichever leads to an increase in the probability), holding all other variables at their median. The results show that information asymmetry is the most influential variable in the convertible debt placement decision. In Model four, a one quartile increase in the dispersion of stock returns increases the probability of issuing private convertibles from 22.26 percent to 48.70 percent (an increase of 26.44 percent).

Table Six
Marginal Probabilities

The sample consists of privately and publicly placed convertible debt offerings completed during the period 1983-2002 by industrial companies. We require that issuer firms have at least $100 million of assets and that all issues have issue dates recorded in the Securities Data Corporation database. The table presents the relative importance of the variables in Models four and five in Table Five. Panel A shows the marginal probabilities of each variable where marginal probability is computed as the increase in the probability of issuing convertible bonds for a change in the independent variable from its median to either the 25th or 75th percentile (whichever leads to an increase in the probability), holding all other variables at their median. Dispersion in stock returns is measured as the standard deviation of the stock returns of the issuing firm in days −240 to −40 relative to the issue date of each debt issue. Issue size is the proceeds of the debt issue divided by the total assets of the firm. Market-to-book ratio is defined as the closing price of the fiscal year multiplied by the number of common shares outstanding divided by the book value of common equity. The interaction variable return dispersion is the information asymmetry indicator variable that takes the value of one for dispersion of stock returns greater than the sample median and zero otherwise. Financial slack is the ratio of (operating income before depreciation minus capital expenditures minus change in net working capital minus net taxes minus change in deferred taxes) to total assets. Bankruptcy industry is an indicator variable that takes the value of one for firms in the machinery and equipment industry (SIC code between 3400 and 3999) and zero otherwise. Altman's Z is a combination of several financial ratios where a high Z-value indicates low probability of bankruptcy. The overall probability of issuing convertible bonds based on each regression model is also presented below each regression, and is computed at the median for all the variables. Panel B shows summary of the step-wise regression procedure.

Panel A: Marginal Probabilities

		Marginal Probability	
Variable	Assumed Change in Variable	Model 4	Model 5
Dispersion in stock returns	0.1352	26.4352	25.4491
Issue size	-0.1052	17.1993	17.7151
Market-to-book	1.0605	17.8179	21.4358
Market-to-book × Return dispersion	-0.3250	4.1084	4.3106
Financial slack	78.9810	5.0487	4.9688
Financial slack × Return dispersion	0.0000	0.4296	0.3942
Altman's Z	1.7460	4.6907	
Bankruptcy industry	0.0000		0.0000
Private issue probability		0.2226	0.2583

Table Six (continued)

PANEL B: Summary of Step-wise Selection

Model	Effect Entered	Removed	Score Chi-Square	Wald Chi-Square	Pr > Chi-Square
4	Dispersion in stock returns		9.7318	-	0.0018
	Issue size		4.0536	-	0.0441
5	Dispersion in stock returns		9.7318	-	0.0018
	Issue size		4.0536	-	0.0441
	Bankruptcy industry		2.7533		0.0971
		Bankruptcy industry	-	2.6982	0.1005

The results in Panel A of Table Six show that agency problems due to risk-shifting, underinvestment, and free cash-flow problems are less influential than the information asymmetry problem in the convertible debt placement choice. For example in Model Five the change in the probability of private placements is 25.45 percent for the dispersion in stock returns compared to 21.44 percent for the market-to-book ratio and 4.97 percent for financial slack. This result is consistent with Green (1984) and Mayers and Smith (1987), who argue that risk-sifting and underinvestment are not as important problems for convertible bonds. In Green's model, the conversion option allows the bondholders to take advantage of the upside potential of the firm, thereby reducing the value of limited liability. As a result, the risk-shifting problem is reduced. In Mayers and Smith managers are less likely to forego valuable investment projects with convertibles since the equity characteristics of the bond reduce the fixed component. These results are also consistent with Goh, Gombola, Lee, and Liu (1999), who find that information asymmetry is more influential in private placements compared to agency costs[9].

Panel A of Table Six also shows that flotation costs have a high economic impact. In Model Five a one quartile decrease in the issue size increases the probability of issuing private convertibles from 25.83 percent to 43.55 percent (an increase of 17.72 percent). However, consistent with Table Five, the results in Panel A of Table Six show that bankruptcy costs do not have a major impact on the probability of issuing private convertibles. For example, the marginal

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[9] The focus of Goh et al. (1999) study is equity issues.

probability of Altman's Z is 4.69 in Model Four. The economic impacts of the interactive variables are also low.

Panel B of Table Six shows the results of the step-wise regressions used for Models 4 and 5. In these regressions each variable is evaluated on the basis of its significance level and the model is built by adding and deleting variables sequentially. The results show that dispersion of stock returns, our proxy variable for information asymmetry, has the highest significance level. This finding confirms our conclusion in Panel A that information asymmetry is the most influential factor in the choice between private and public placements of convertible bond offerings. The results in Panel B of Table Six also confirm our finding that flotation costs, measured by the issue size, have a high influence on the probability of issuing private convertible bonds. Agency cost and financial distress variables are not included in the model and, therefore, are less influential on the placement choice.

Conclusion

In this paper we study whether information asymmetry problems, agency costs, financial distress costs, and flotation costs affect firms' decision to place convertible bonds privately instead of going to public markets. We study 78 private and 229 public offerings of convertible bonds issued between 1983 and 2002 by industrial firms. Our results show that information asymmetry problems are the major determinants of the placement decision of convertible debt. We hypothesize that since investors of private placements are better informed about the firm, the issuer will be valued more accurately with this type of offering. The commitment of private investors to the issue also acts as a quality certification. Consistent with these arguments, we find that firms with high levels of information asymmetry are more likely to choose private offerings compared to public offerings.

Agency costs also affect the choice between private and public offerings of convertible bonds. We find that firms that are more susceptible to agency problems of risk-shifting, underinvestment, and free cash flow choose private placements. However, our results show that the economic impact of agency costs are not as important for convertible bond issuers as information asymmetry problems. This finding is consistent with the argument that, due to their equity-like nature, convertible bonds face high adverse selection costs, but they do not have high agency costs because the conversion option reduces the risk-shifting and underinvestment problems. We also test the interaction of agency costs and information asymmetry problems on the placement choice. Our results do not support the argument that the opportunity cost of foregoing valuable projects will be higher for firms with high information asymmetry when these firms have good investment opportunities and little financial slack.

Our results indicate that expected flotation costs are also important in the placement choice of convertible bonds. We hypothesize that, in order to avoid the higher fixed costs of public offerings, firms with smaller issues will prefer private placements. Consistent with this hypothesis, we find that firms with lower offering proceeds relative to firm size are more likely to issue private convertibles. We fail to find support for our hypothesis that firms with high expected financial distress costs choose private placements due to the higher flexibility of renegotiation offered by these offerings.

References

Altman, E.I., 1968, "Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy", *Journal of Finance* 23, 589-609.

Altman, E.I., 1984, "A Further Empirical Investigation of the Bankruptcy Cost Question", *Journal of Finance* 39, 1067-1089.

Barclay, M. and C. Smith, 1995, "The Maturity Structure of Corporate Debt", *Journal of Finance* 50, 609–631.

Bayless, M. and S. Chaplinsky, 1996, "Is There a Window of Opportunity for Seasoned Equity Issuance?" *Journal of Finance* 51, 253–278.

Blackwell D.W. and D.S. Kidwell, 1988, "An Investigation of Cost Differences Between Public Sales and Private Placements of Debt", *Journal of Financial Economics* 22, 253-278.

Bodie, Z., A. Kane, and A.J. Marcus, 2002. Investments ((McGraw-Hill Irwin, New York).

Cantillo, M. and J. Wright, 2000, "How Do Firms Choose Their Lenders?" An Empirical Investigation, *Review of Financial Studies* 13, 155-189.

Denis D.J. and V.T. Mihov, 2003, "The Choice Among Bank Debt, Non-bank Private Debt, and Public Debt: Evidence from New Corporate Borrowings", *Journal of Financial Economics* 70, 3-28.

Dierkens, N., 1991, "Information Asymmetry and Equity Issues", *Journal of Financial and Quantitative Analysis* 26, 181–199.

Easterwood J.C. and P. Kadapakkam, 1991, "The Role of Private and Public Debt in Corporate Capital Structures", *Financial Management* 20, 49-57.

Eckbo, B.E., 1986, "Valuation Effects of Corporate Debt Offerings", *Journal of Financial Economics* 15, 119-151.

Fields, L.P. and E.L. Mais, 1991, "The Valuation Effects of Private Placements of Convertible Debt", *Journal of Finance* 46, 1925-1932.

Fischer, E.O., R. Heinkel, and J. Zechner, 1989, "Dynamic capital structure choice: Theory and tests, *Journal of Finance* 44, 19–40.

Froot, K., D. Scharfstein, and J. Stein, 1993, Risk Management: Coordinating Corporate Investment and Financing Policies", *Journal of Finance* 48, 1629-1658.

Goh, J., M.J. Gombola, H.W. Lee, and F. Liu, 1999, "Private Placement of Common Equity and Earnings Expectations", *Financial Review* 34, 19-32.

Green, R., 1984, "Investment Incentives, Debt, and Warrants", *Journal of Financial Economics* 13, 115–136.

Grice, J.S. Sr., 2000, "Bankruptcy Prediction Models and Going Concern Audit Opinions Before and After SAS No. 59", *B>Quest*.

Hertzel M. and R.L. Smith, 1993, "Market Discounts and Shareholder Gains for Placing Equity Privately", *Journal of Finance* 48, 459-485.

James, C, 1987, "Some Evidence on the Uniqueness of Bank Loans", *Journal of Financial Economics* 19, 149-171.

Jensen M., 1986, "Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers", *American Economic Review* 76, 323–329.

Jensen, M. and W. Meckling, 1976, Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure, *Journal of Financial Economics* 3, 305–360.

Korajczyk, R. A., D. J. Lucas and R. L. McDonald, 1992, "Equity Issues with Time Varying Asymmetric Information", *Journal of Financial and Quantitative Analysis* 27, 397-417.

Krishnaswami, S., P.A. Spindt, and V. Subramaniam, 1999, "Information Asymmetry, Monitoring, and the Placement Structure of Corporate Debt", *Journal of Financial Economics* 51, 407-434.

Krishnaswami, S. and V. Subramaniam, 1999, "Information Asymmetry, Valuation, and the Corporate Spin-off Decision", *Journal of Financial Economics* 53, 73–112.

Lewis, C., R. Rogalski, and J. Seward, 1999, "Is Convertible Debt a Substitute for Straight Debt or for Common Equity?" *Financial Management* 28, 5–27.

Mayers, D. and C. Smith, 1987, "Corporate Insurance and the Underinvestment Problem", *Journal of Risk and Insurance* 54, 45–54.

Myers, S., 1977, "Determinants of Corporate Borrowing", *Journal of Financial Economics* 5, 147–175.

Myers, S. and N.S. Majluf, 1984, "Corporate Financing and Investment Decisions when Firms Have Information That Investors Do Not Have", *Journal of Financial Economics* 13, 187–221.

Paxton, D. and D. Wood, 1998. Encyclopedic Dictionary of Finance (Blackwell Publishers, Malden, Massachusetts).

Ross, S.A., R.W. Westerfield, and J.F. Jaffe, 2005. Corporate Finance (McGraw-Hill Irwin, New York).

Slovin, M. B., M. E. Sushka, and J. A. Polonchek, 1991, "The Information Content of Multiple Seasoned Common Stock Offerings by Bank Holding Companies", *Journal of Banking and Finance* 15, 633-646.

Smith, C.W. and J.B. Warner, 1979, "On Financial Contracting: An Analysis of Bond Covenants", *Journal of Financial Economics* 15, 3-29.

Smith, C. W. and R.L. Watts, 1992, "The Investment Opportunity Set and Corporate Financing, Dividend, and Compensation Policies", *Journal of Financial Economics* 32, 263–292.

Szewczyk, S.H. and R. Varma, 1991, "Raising Capital with Private Placements of Debt", *Journal of Financial Research* 14, 1-13.

Sy, A.N.R., 1999, "Managerial Entrenchment and the Choice of Debt Financing", IMF Working Paper.

Titman, S., 1984, "The Effect of Capital Structure on a Firm's Liquidation Decision", *Journal of Financial Economics* 13, 137–151.

Titman, S. and R. Wessels, 1988, "The Determinants of Capital Structure Choice", *Journal of Finance* 43, 1–19.

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