Information Production in Stock Markets and Cost of Bank Debt *

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Comments Welcome

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Abstract

This paper provides evidence that financing costs of firms are affected by information spillovers from stock markets. Specifically I show that the firms' bank borrowing costs are decreasing in measures of information production in stock markets. Extending the idea of information externalities of stock prices of Grossman and Stiglitz (1980), this paper tests the hypothesis that information reflected in stock prices should reduce the cost of bank loans for publicly traded firms since the bank can monitor the firm more efficiently by supplementing its own information with publicly available information such as stock prices. The empirical analysis is conducted in two stages: (i)assessing the impact of having publicly traded stock on a firm's borrowing costs, and (ii) cross-sectionally relating the degree of information production in stock markets to the borrowing costs. The empirical tests use data from two types of firms: private firms that go public (IPO sample) and public firms that go private (LBO/MBO firms). After controlling for firm risk, loan characteristics and sample selection issues, I find that the cost of bank borrowing is significantly lower for firms with publicly traded equity relative to private firms. The borrowing costs are also decreasing in proxies for the informativeness of the stock price.

1 Introduction

This paper examines the value to a firm from information spillovers arising from its publicly traded stock. "Information spillover" refers to the positive information externalities when different investor groups produce information about the firm. Specifically, information produced by investors in the stock market is noisily reflected in an observable stock price for the firm and this information can be used by other investors in the firm. The notion of information spillover was explored in Grossman and Stiglitz (1980). They show that information produced by informed investors gets communicated to the uninformed through stock prices, although this is achieved imperfectly. Several papers have since modelled the impact of information spillovers from public stock markets in different contexts.[1]

In this paper, I provide an empirical estimate of the value of having an informative stock price using financing costs to measure the benefits. A testable implication of the information spillover hypothesis is that firms face lower costs of financing on all their securities when they have publicly traded stock which aggregates and reflects information produced by the stockholders. This results in an information spillover across different securities of the same firm resulting in reduction in information asymmetry and consequently lower overall financing costs. Specifically, the study focuses on the savings in the firm's bank borrowing costs due to information produced in the stock market. Consistent with the hypothesis, I find that controlling for firm and loan characteristics, the cost of bank borrowing is lower in the presence of public equity and it is decreasing in measures of information production in the stock market.

[1] In Holmstrom and Tirole (1993), firms use stock prices to provide better incentives to managers, in Subrahmanyam and Titman (1999) and Boot and Thakor (1997) managers use stock prices to make real investment decisions and in Faure-Grimaud and Gromb (1999) and Aghion, Bolton and Tirole (2000), public equity provides liquidity for the inside shareholder and strengthens his incentives to monitor. In Sunder (2002) information spillovers from stock prices reduces monitoring costs and adverse selection costs of all future securities and consequently reduces the overall financing costs of the firm.

Under the information spillover hypothesis, private firms with no publicly traded equity should face higher costs of bank borrowing relative to publicly traded firms since these private firms do not have a publicly observable stock price as an informative signal of firm value. Sunder (2002) models how all investors, current and future, use the information contained in stock prices to monitor the firm and value its claims. In the model, information spillovers from publicly observable stock prices lowers financing costs by reducing monitoring costs of other investors and decreasing the adverse selection costs faced by future investors in the firm. For instance, if the firm has publicly traded stock, a lending bank can supplement its own monitoring effort with the noisier but cheaper information contained in the firm's publicly observable stock price.

The empirical tests are conducted on two different samples of private firms: (i) loans by firms prior to the IPO event (pre-IPO sample) and (ii) loans by firms after they go private (post-LBO sample). These loans are compared to loans by public firms to measure the value of publicly traded stock on the cost of bank debt. The cost of bank borrowing, as measured by spreads over LIBOR, is compared for loans of private versus public firms after controlling for firm risk and loan characteristics. To proxy for the information that the bank already has, I use various financial measures of firm risk (such as size, leverage, profitability, liquidity ratios, etc.) and non-price terms of loans (such as maturity, loan size, rating, security, etc.) which capture the residual risk.

I find that the cost of borrowing is statistically and economically significantly lower for firms with observable stock prices[2] (after their IPO) after controlling for firm risk and loan characteristics. For the pre-IPO sample of private firms, the cost of bank debt reduces by about 30 to 75 basis points in different specifications after these firms go public. In other tests, I show that the cost of bank debt for the pre-IPO firms is significantly larger than a sample of public firms matched on characteristics such as industry, size, and leverage, by as much as 120 basis points. In similar tests on the LBO sample, these firms face higher bank spreads of about 40 to over 100

[2]In a related study, Pagano, Panetta, and Zingales (1998) document that the level of interest rates fall after a firm goes public, using a sample of Italian firms.

basis points in different specifications after they delist their stock. These results suggest a regime shift in the financing costs for these sample firms which would carry forward to all future loans. In additional test, I show that the reduction in borrowing costs is related to stock informativeness and the presence of informed traders, measured by the relative bid-ask spreads, analyst coverage and institutional holdings. This suggests that information production in the stock market has an externality in terms of overall financing costs. For instance, a one standard deviation decrease in relative bid-ask spreads reduces the bank spread by over 18 basis points on average. In fact, this is a conservative estimate of the value of informative stock prices since the bank can be considered among the better informed investors of the firms and therefore the benefit to the bank represents a lower-bound of the benefit of having informative stock prices. Finally this paper provides some preliminary evidence on the indirect benefits of information production in stock markets to other market participants such as rating agencies and competing banks which ultimately reduces the firms financing costs.

The results are subjected to several robustness checks and alternative model specifications. The sample used in the study could potentially suffer from some sample endogeneity issues. In order to control for the sample selection biases that may be associated with the sample of firms that go public, I estimate the model with a treatment effects correction and the results continue to be significant. In order to interpret the results as benefits of having publicly traded stock, it is important that changes in firm risk are adequately controlled for. In the tests where the same firms are studied pre- and post-IPO, the IPO event is such a significant event in the life of the firm that there may be some unobserved changes in the risk profile associated with the IPO event which might not be fully captured in the model specifications. Also for these firms it may be hard to separate out the information effects associated with the marketing of the IPO from the information effects of having a publicly traded stock. To address these issues, I use a matched sample of contemporaneous loans by public firms with similar characteristics as the pre-IPO sample, such as, industry, size and leverage. Further, the tests that document the cross-

sectional effect of proxies of stock informativeness on the cost of bank debt are not affected by changes in risk around the IPO event.

Overall the findings provide evidence that information production in stock markets is valuable to all investors in the firm. Using a relatively sophisticated investors such as banks, the estimates of savings in the cost of debt represent a lower bound of the value of these spillovers. Consistent with my findings, KMV Corporation of San Francisco uses stock prices as a key input in a default prediction model used by banks to predict loan default rates for all companies with publicly traded equity (Saunders (1998)).

The empirical findings also contribute to the large empirical literature on bank uniqueness which show that stock market investors try to infer a bank's superior information from actions of the bank. These studies document significant stock market reactions to loan initiations, renewals or sales. The bank is assumed to have superior information due to its lending relationship and therefore its actions convey this information to the market.[3] In contrast to these papers, my tests focus on information that flows from markets to the bank and evaluate the impact of these information spillovers on the efficiency and cost of bank monitoring. The results in this paper therefore suggest complementarities in information production between well-functioning stock markets and the banking system.

The remainder of the paper is structured as follows. Section 2 contains a discussion of the related literature.Section 3 outlines the sample selection, methodology and describes the variables. Section 4 discusses the empirical results on the IPO sample. Section 5 relates the borrowing costs to various measures of information production in stock markets. Section 6 provides the results in

[3]An alternative approach to interpreting some of the results in this literature, is that stock prices are reacting to the monitoring externalities of banks. The basic distinction is that in the case of the monitoring externality, the presence of the bank in the firm increases the monitoring of managers, which is valuable. Whereas in the case of an information effect, the stock market is deducing private information of banks from its actions. While both these are plausible explanations, the monitoring externality hypothesis requires that the studies also control for the presence of other monitors (other banks, institutions, etc.).

the going-private sample and Section 7 concludes the paper.

2 Related literature

The information externality of stock prices that results from public trading has been examined in the existing literature. The fact that prices do not fully reflect the information of the informed provides these investors the incentives to invest in costly information production. Allen and Gale (2000) state that information aggregation is an important role played by prices. They argue that when there is uncertainty regarding the optimal action to be taken by firms, financial markets serve as a mechanism for aggregating disperse beliefs. Several papers have examined the information externality role of public securities. In Holmstrom and Tirole (1993) managers are provided with better incentives when there is a stock price that reflects the value of their actions even though it may be a noisy signal. In Subrahmanyam and Titman (1999) and Boot and Thakor (1997), firms use information in public security prices to make real investment decisions as the markets aggregate information that is not available to managers. Faure-Grimaud and Gromb (1999) and Aghion, Bolton and Tirole (2000) have examined the interaction between the existence of an informative stock price and the incentives of the initial equity investor to monitor. In these models, the liquidity needs of the inside shareholder could force the shareholder to liquidate part of the holding before the firm value is realized therefore adversely affecting the ex ante incentives of the investor to exert effort. Having an informative stock price improves the realizable value of the firm at the interim date thereby strengthening the inside shareholder's monitoring incentives. Sunder (2002) models the information spillovers across the different securities of a firm and the impact of information externalities from public equity on the overall financing costs of the firm. The information produced in markets is noisily reflected in observable stock prices and other investors in the firm use this information to reduce the overall financing costs. The reduction in information asymmetry affects financing costs in two ways: first, investors monitor the firm

more efficiently using information in the stock price, which in turn reduces the dead weight costs of monitoring and second, investors value future financial claims better, thereby reducing the adverse selection costs associated with new securities that the firm issues.

This paper provides evidence that directly addresses the information externality role of public equity by examining the borrowing costs of firms. I show that the presence of public equity reduces the cost of bank debt for firms and that this cost is reducing in proxies for information production in markets. In a related study, Pagano, Panetta, and Zingales (1998) document that the cost of bank debt reduces after the firm goes public in a sample of Italian firms. This study differs from theirs in several important ways. First, the focus of their study is to examine why firms go public and the consequences of going public. In this study the objective is to understand the implications of information production in financial markets and therefore the test goes beyond comparing the cost of bank debt pre- and post-IPO. Therefore the tests in this paper are both over time (same firms pre- versus post-IPO) and in the cross-section (pre-IPO firms versus matched public firms). Second, the tests are extended to an alternative sample of private firms, i.e. LBO firms. Third, this paper uses detailed loan data and is thus able to identify the cost of each incremental loan and control for information spillover effects, loan characteristics and bank relationships whereas Pagano et al. study the total interest costs of the firm. Finally, this paper provides evidence that the reduction in cost of bank debt is directly related to proxies for information production in the stock markets.

Mazumdar, Sarin, and Sengupta (2000) show that a firm's cost of bank debt is related to the disclosure policy followed by management and document that higher voluntary disclosure results in lower costs of bank debt.[4] In their study the additional information is provided by the management whereas in this paper the information is produced by various stock market participants and gets reflected in stock prices which is then used by banks. The two effects are

[4]Other papers that have studied the impact of voluntary disclosure on the cost of capital faced by the firm include Botosan (1997) and Sengupta(1998).

not mutually exclusive and both studies provide evidence on the effect of a superior information environment on financing costs.

The evidence provided in this paper also complements the literature on bank uniqueness. Several theoretical papers starting with Diamond (1984), Ramakrishnan and Thakor (1984) and Fama (1985) have modelled the special information production role of banks. The superior monitoring ability of banks implies that actions of the bank should reveal information about the firm and several empirical studies examine bank uniqueness by studying the stock price reaction to actions of the bank. James (1987) documents a positive stock price impact of bank loan agreements, Lummer and McConnell (1989) examine this further by exploring the differences between loan renewals and non-renewals. Dahiya, Puri and Saunders (2000) document a negative stock price reaction to loans sales. All these results suggest that investors infer the bank's private information from the actions with respect to loan grants, renewals or loan sales. James and Smith (2000) is a comprehensive survey of research related to uniqueness of banks. The evidence in this paper complements this literature by suggesting that banks also infer information from security prices and gain from information production in financial markets. In this paper, I show that while banks may have access to superior information production technologies, they may benefit from information production in financial markets. Therefore the stock market complements the banking system and could improve their efficiency of information production. Therefore the main hypothesis tested here is that the cost of bank borrowing is lower for firms that have publicly traded stock relative to a privately held firm and that this reduction in costs is related to liquidity and information production in the stock markets.

3 Sample Selection, Methodology, and Data Description

The tests in this paper involve comparison of cost of bank debt for private versus public firms after controlling for firm risk and loan characteristics. The main sample of private firms is comprised

of pre-IPO firms (IPO sample). The pre-IPO bank loans are compared with the post-IPO bank loans and an alternative sample of loans obtained by matched public firms. The regressions of the cost of bank debt are conducted two stages. First, I examine how the cost of bank debt is affected by the presence of public equity and second, I study the cross-sectional variation in borrowing costs related to measures of informativeness of the stock price. The second sample of private firms is constructed using firms that go private and delist their stock (LBO firms). The tests mainly involve regressions of the cost of bank debt on variables that proxy for the bank's information on the firm's risk and measures of information spillovers from public equity.

3.1 Sample Selection

To get at a sample of privately held firms in the U.S., I use two alternative samples: (i) young firms that go public (IPO sample) and (ii) mature firms that go private (LBO sample). These two samples provide a setting in which to examine the cost of bank debt for private firms either pre-IPO or post delisting. The tests mainly focus on the IPO sample of private firms. Information on privately held firms is not available for a wide cross-section of private firms in the U.S. and these two samples are designed to capture very different types of private firms small and high growth versus mature firms. The cost of bank debt for these firms are compared with the cost of bank debt for a sample of public firms in order to then estimate the impact of information production in stock markets on the cost of bank debt.

The IPO sample contains all firms that went public from 1994 through 1998. Since financial information of the private firm is required to proxy for the risk measures available to the bank, I hand-collect the data from the prospectus at the time of the IPO. The data from the prospectus for this period are available either on the Edgar database of the Securities Exchange Commission (SEC) or the Disclosure CD database. Since prospectuses on IPOs prior to 1994 are not easily available, I use this year as the cut-off for my sample. The list of all IPOs for this period is obtained from Securities Data Corporation database.

The information on the bank loans for all the sample firms is obtained by matching the firm name with the Dealscan database supplied by the Loan Pricing Corporation.[5] Dealscan contains details on banks loans, including the identity of the borrower and lender and the date and details of the loans such as the type, amount, maturity, price, seniority, security, etc. The firms that have data on Dealscan are then matched by name with SEC's Edgar database and Disclosure CD database for financial information for the pre-IPO/ post-LBO period. Firms typically report upto 5 years of prior financial performance in the IPO prospectus. Financial information is obtained from Compustat for public firms. The final IPO sample consists of 589 firms with 1622 loans for which financial data is available. Table 1 shows the distribution of loans over the sample period and relative to the IPO date.

In the case of the pre-IPO sample of private firms, to evaluate the impact of public equity on the cost of bank debt, the pre-IPO loans are compared with two alternative groups of loans of public firms: (i) loans taken by firms subsequent to the IPO event (post-IPO sample), and (ii) loans taken contemporaneously by a sample of public firms that are matched on industry, size and leverage (matched sample). The first sample enables comparison of the firms pre- and post-IPO. However post-IPO firms tend to be larger and more profitable than pre-IPO firms and therefore I use the second sample of public firms. The matched sample of public firms controls for important firm characteristics and timing of the loan and the cost of bank debt is examined cross-sectionally across the two types of firms. The second sample contains loans obtained in the same year as the pre-IPO loan by a public firm that is matched to the pre-IPO firm on industry, size, and leverage, factors that are important for the cost of debt. The industry match is based on a one-digit SIC code, size is measured as the book value of total assets and leverage is measured as book leverage. I first construct deciles on the entire Compustat data for each year and the matched firms belong to the same size and leverage deciles as the pre-IPO firms.

[5]Other papers that have used this database include Carey, Post and Sharpe (1998), Hubbard, Kuttner and Palia (1998) and Strahan (1999)

The alternative sample of private firms consists of mature firms that go private and delist their stock (LBO sample). The sample of firms that went private include firms that underwent a leveraged buyout (LBO) or a management buyout (MBO) during the period 1994 through 1998, as obtained from the Securities Data Corporation database and confirmed with CRSP for a corresponding delisting of the stock. The final sample consists of 60 firms and 244 loans. The financial data and stock market related variables were computed in the same manner as for the sample of IPOs. The main advantage of using the sample of LBOs to validate the main results of the paper is driven by the limited data availability on private firms in the U.S. The LBO sample is useful to ensure that the results are not being driven entirely by the uniqueness of the IPO sample and that the results holds in a sample of more mature firms.

3.2 Methodology

To evaluate the impact of information spillovers from public equity on the cost of bank debt, the analysis is done in two stages. In the first stage, I run regressions of the cost of bank debt on variables that measure firm risk and loan characteristics. In these regressions, I include a dummy variable that is used to distinguish public firms from private firms at the time of the bank loan. The second stage regressions include additional variables that measure the level of information production in the stock market and therefore relates the cross-sectional variation in the informativeness of the stock price to the cost of bank debt. Both types of regressions are used to analyze the pre-IPO sample of private firms however due to data limitations, only the first stage regressions are run on the LBO sample. If there is value in the information produced in stock markets over and above the information available to the bank then the cost of bank debt should be lower for firms with publicly observable stock prices and the reduction in the cost of bank debt should be greater for firms with relatively more informative stock prices.

The first stage regressions involve a comparison of the bank borrowing costs between the sample of private and public firms and the variable of interest is the dummy variable that distinguishes

these two groups of loans. In these tests the cost of bank debt is regressed on measures of firm risk that are available to the bank and a dummy for the presence of public equity. The basic specification for the first stage regressions are therefore given as:

$$\text{AIS Drawn} = \text{Intercept} + \beta * \text{Dummy for public versus private firm loan} + \gamma X_1 + \lambda X_2 \quad ...(1)$$

X_1 represents the various firm risk variables using firm-specific financial information and X_2 represents the various non-price terms of the loan. The discussion on measurement of the firm risk and loan characteristics variable is given in the next subsection.

For the pre-IPO sample, there are two variants of this regression depending on the sample of public firms. In case of the post-IPO loans, the "Post-IPO Dummy" measures the incremental cost/ savings in bank borrowing costs for public firms and in case of the matched sample, the "Private Firm Dummy" measures the additional cost of bank debt faced by private firms. If the information spillover from stock prices allows the bank to monitor the firm more efficiently and the bank passes on a part of the savings to the firm, then the expected sign of the coefficient on the "Post-IPO Dummy" is negative and represents a saving in the cost of bank debt for the firm and similarly, the expected sign on the "Private Firm Dummy" is positive. In case of the post-IPO sample of public firms, the coefficient on the dummy represents the savings in the cost of bank debt for the same firm after the IPO event (Table 4) or relative to other IPO firms (Table 3). In the matched sample of public firms, the coefficient on the "Private Firm Dummy" represents the additional cost of bank debt paid by private firms relative to similar public firms (Table 5).

The information about the firm's risk that is available to the bank at the time of the loan is proxied using two types of control variables. First, I use measures of firm-specific risk that affect the cost of borrowing, such as size, leverage, profitability, cash flow liquidity, etc that are primarily obtained from the firm's financial statements. Second, I use non-price terms of risk to capture the unmodelled firm risk that the banks use while evaluating the risk of the loan. Strahan(1999) shows that banks use non-price terms of the loan such as maturity and security to address the

risk of the borrowing firm. The cost of bank debt is measured as the all-in-spread over LIBOR charged by the bank at the time of the loan initiation.

The first stage tests using a dummy variable for private firm loans in the bank loan spread regression in extended to the alternative sample of private firms (LBO sample) to ensure that the results are generalizable beyond the sample of IPO firms. This is a sample of mature firms that go private and delist their stock. The basic regression specification is the same as in (1) above and in the LBO sample the "Pre Delisting Dummy" is used to distinguish the public from private firms.

The second stage regressions relate the cross-sectional variation in the cost of bank debt to proxies that measure the informativeness of the stock price or level of information production. If the bank benefits from having an informative stock price then the savings in the cost of bank debt should be greater when the stock price is more informative. The specification used in these steps modify (1) above to include pxoxies for information production and presence of informed investors and is given by:

AIS Drawn = Intercept + $\beta_1 *$ Dummy for public versus private firm loan + $\beta_2 *$ Proxies for the informativeness of the stock price + $\gamma X_1 + \lambda X_2$ ...(2)

As before, X_1 represents the various firm risk variables using firm-specific financial information and X_2 represents the various non-price terms of the loan.

This specification addresses the concern that the tests using a private firm dummy may also capture some other benefits of going public such as better governance or listing requirements that enhance firm value and consequently reduce the cost of bank debt. Therefore in these tests I use variables that proxy for the level of information production in stock markets or the nature of the information environment for the firm's stock. The variables either measure the information asymmetry or the presence of informed traders and I use the relative bid-ask spread for the stock, analyst following or institutional shareholding. The data for the proxies come from several

databases. The relative bid-ask spread is obtained from the Trades and Quotes (TAQ) database of NYSE. Data on institutional holding is obtained from CDA Spectrum database and the analyst coverage is obtained from I/B/E/S database.

3.3 Description of Variables

The data on the price and non-price terms of the loan are obtained from the Dealscan database provided by the Loan Pricing Corporation. Some loan packages or a deal can have several facilities for the same borrower and with the same contract date. Prior papers have done the empirical analysis at the facility level since the spread also depends on loan characteristics and each facility could have different features. In this paper, I exclude non-fund based facilities such as standby letters of credit and very short term bridge loans. The cost of the bank borrowing is measured as the drawn all-in spread ("AIS Drawn") which is measured as a mark-up over LIBOR and is paid by the borrower on all drawn lines of credit. Most of the bank loans are floating rate loans and therefore the cost of the loan is quoted as a spread over LIBOR. Those that have been set as a spread over prime rate, T-bill rate, etc. are converted using constant differentials and these are denoted by the 'Prime Rate Dummy'. The dependent variable is either the AIS spread variable in basis points or the log of the spread. This is consistent with prior studies that have used the Dealscan database.

The Dealscan database identifies the borrower and lender and specifies the date and terms of the loan including the price (spread) and several non-price terms of the deal and facility such as the dollar size of the loan, maturity in months, ratings of the loan by Standard and Poor's (S&P), information on whether the loan was secured or not, seniority of the loan, type of the loan and purpose of the loan. Strahan (1999) shows that banks use both price and non price terms of the loans to address borrower risk. He finds that banks are willing to offer larger loans with longer maturity to lower risk borrowers and are less likely to require collateral or security from these borrowers. Therefore I use other non-price terms of the loan as control variables and to

capture the information of the bank that they have used in designing the overall terms of the loan contract. The variables used are "Log Loan Size" which is the log of the facility size. Results are unchanged if the log of deal size is used instead. The predicted sign on this variable in the loan spread regressions is negative since the loan size also proxies for a better quality borrowing firm who will be charged a lower spread. To control for the maturity of the loan, I use "Log Contractual Maturity" and the predicted sign is negative since again the maturity is increasing in the quality of the borrower. I include a dummy that takes on a value of 1 if the loan is secured ("Secured Dummy") which is more prevalent in the case of poor quality loans. I include a "Sole Lender Dummy" to capture the effects of bank competition on the cost of the bank loan. I include dummies for the various rating categories including a dummy for loans that are not rated. A large fraction of loans are not rated at all. The type of the loan is also controlled for using dummies and these could either be term loans, revolvers with maturity greater than one year or revolvers with maturity less than one year. I also control for the purpose of the loan in some specifications using dummies and these include loan repayment, acquisitions, working capital, corporate purposes, etc.

The loan spread regressions control for firm risk using various accounting measures of risk. The financial information for the pre-IPO firms is hand collected from the IPO prospectus. The variables used are primarily those that are likely to affect the cost of bank debt and taken together with the non-price terms of the loan, these variables are meant to proxy for all available bank information regarding the firm risk. One of the important measures of risk that affects the borrowing costs of the firm is leverage. Therefore I measure leverage both as the "Book Leverage", i.e. long term debt divided by total assets and "Market Leverage", i.e. long term debt divided by market value of equity. For the private firm loans, the market value of equity is imputed using the average stock price/EBITDA multiple of the industry. While both definitions have been used for all the specifications and the results are robust to the two alternative definitions, only some of the specifications are reported. To measure the size of the firm is use "Log Assets" which is the log of

the total assets. Another important variable that affects the cost of debt is the interest coverage ratio that I compute as EBITDA/interest expense and this is reported as "Interest Coverage". To measure the extent to which the firm has tangible assets that can be used to repay the loan in the event of default, I measure "Tangible Assets" as net PPE/ total assets. I also include the "Current Ratio" measured as current assets/ current liabilities. I measure profitability in two alternative ways, while I report profitability measured as earnings before interest and taxes (EBIT) divided by total assets, the results are qualitatively unchanged using net income/ total assets. Besides these variables that proxy for the firm risk and other bank information, I also include a dummy for whether the firm was backed by a venture capital at the time of the IPO. This information is obtained from the Securities Data Corporation database and is used to control for firms where there is another active investor producing information and monitoring the firm. In some specifications, I also include time, industry and firm fixed affects.

When the dependent variable is measured in basis points, the dummy for private versus public loan measures the difference in the cost of bank debt between public and private firm loans in basis points. This variable takes on different forms. For instance, in Table 3, the coefficient on "Post-IPO Dummy" measures the savings in loan spread for post-IPO firms relative to pre-IPO firms, in Table 4, the coefficient on "Post-IPO Dummy" measures the savings that the same firms face post-IPO firms relative to their pre-IPO costs. In Table 5, the coefficient on "Private Firm Dummy" captures the additional cost paid by private firms relative to similar public firms and in Table 9, the coefficient on "Pre Delisting Dummy" measures the savings in cost of bank debt when the firm had public equity.

In the second stage regressions, I modify the first stage regression specification by including proxies to measure the cross-sectional variation in information production in stock for different firms. The various proxies used include market capitalization, relative bid-ask spread on the stock, dummy for analyst coverage, number of analysts following the stock and institutional ownership. The relative bid-ask spread measures the information asymmetry in the stock and

therefore a stock with very high bid-ask spreads is not a very useful indicator of firm value and the expected savings for the bank would be decreasing in the bid-ask spread. The analyst coverage and institutional ownership proxy for the presence of informed investors and the extent of information production and the market capitalization is used to measure the overall information environment. The predicted sign on the coefficient of these variables in the loan spread regressions is negative since the cost of bank debt is predicted to be decreasing in information production in public equity.

4 Results on the IPO Sample

The empirical tests explore the impact of a publicly traded stock on the cost of bank debt. The analysis is done mainly on a sample of IPO firms and here the tests can be broadly classified into two groups; (i) tests relating the presence of a market for the stock to it borrowing costs and (ii) cross-sectional tests that compare the degree of information production to the borrowing costs. The analysis is then extended to an alternative sample of firms that go private. The results for each stage of the analysis is presented separately.

I examine the impact of the IPO on the borrowing costs of the firm after controlling for firm risk and loan characteristics. Table 2 describes the firm and loan characteristics for the pre-IPO and post-IPO loans. The cost of borrowing as measured by the All-in Drawn Spread (AIS) is significantly lower post-IPO, however it is important to explore whether the differences in firm and loan characteristics after the IPO explain this univariate result. Strahan (1999) documents the relationship between price and non-price terms of a bank loan and my results are consistent with his findings. As expected, subsequent to the IPO, the firms are larger, more profitable and face greater liquidity. However there is no significant difference in terms of leverage, which is consistent with the observation that the size of borrowing also increases post-IPO along with the overall assets of the firm. One interesting difference is the reduced fraction of loans that are

secured. Given the results that show that the quality of the firm and loans are better post-IPO, the lower fraction of secured loans suggests that banks are more likely to require security from lower quality loans. This is consistent with the results of Strahan (1999) where he finds that banks require riskier firms to provide collateral.

In this paper, the focus is on the value of information to the bank, however other market participants could potentially benefit from the increased information such as rating agencies and other banks competing for the firm's business and this could have an indirect beneficial effect on the cost of bank debt.[6] In Table 2, the fraction of loans that have some rating assigned to it by Standard and Poors also increases subsequent to an IPO. Besides the increase in firm and loan size that might heighten the need to get rated, the improved information about the firm after an IPO potentially facilitates the rating process. A similar argument can be made for why a larger fraction of loans are made by multiple lenders. The information production in the stock markets could potentially make it easier for more banks to monitor a given firm. Besides the direct impact on the bank spread, there could be indirect effects of the going public decision related to the rating process and competition between banks.

4.1 Cost of Pre-IPO versus post-IPO loans

To examine the impact of the IPO on the firm's costs of bank borrowing, I use regressions of the bank loan spread on firm and loan characteristics using a sample of pre and post-IPO loans. Table 3 contains results from the pooled OLS regressions. Two alternative specifications for the dependent variable were used - the Log All-in Spread Drawn (Ln AIS) (Table 3, Panel A) and AIS Drawn (Table 3, Panel B). Both results are qualitatively similar. I control for firm-specific and loan-specific characteristics and include a dummy for post-IPO loans. If the firm faces better financing costs due to the presence of publicly traded stock, this dummy should be

[6]These effects are however controlled for in the regressions using a dummy variable for firms not rated and the dummy for whether the loan was made by a single bank (Sole Lender).

negative and significant. However before interpreting this coefficient, I examine other variables that are expected to change due to the IPO event such as size, leverage and maybe profitability. The coefficient on book leverage as measured by LT Debt/ Assets is always positive and highly significant. Spreads are decreasing in firm size as measured by Log Assets and decreasing in profitability as measured by EBITDA/Assets though these variables are not always significant in all specifications. Therefore the cost of bank debt is increasing in measures of firm risk. The relationship between spreads and loan characteristics are also as expected. Costs are decreasing in loans size and increasing in the dummy for whether the loan is secured with a collateral suggesting that firms make smaller loans to riskier borrowers require collateral from them. Since I use a panel data, I also control for industry, firm and time fixed effects. Controlling for changes in firm risk and profitability, the IPO dummy is still negative and highly significant in all specifications in both Panel A and B.

I carry out the same test as in Table 3 on a smaller sample where I require the same firm to have loans both prior to and after the IPO. The results are in Table 4 and the post-IPO dummy continues to be negative and significant. Between the two samples analyzed in Tables 3 and 4, the presence of publicly traded stock in itself results in a savings in the bank loan spread of around 30 to 75 basis points in different specifications.

4.2 Cost of Pre-IPO loans versus matched-sample loans

The impact of public equity on cost of bank debt is analyzed using an alternative sample of public firm loans. Here the matched sample contains loans by publicly traded firms that obtained a bank loan in the same year as the pre-IPO loans by firms that have the same characteristics as the pre-IPO firms. Table 5, Panel A shows the results in a sample of firms matched on industry and size and Table 5, Panel B uses a sample matched on size and leverage. Both sets of matched samples show very similar results. The coefficient on the Private Firm Dummy, which takes on a value of 1 when the loan is a pre-IPO loan and 0 otherwise, is economically and statistically significant

in all specifications. All the other results are qualitatively similar to the results in Tables 3 and 4. Specifications (i) and (ii) in both panels use the AIS-Drawn Spread as the dependent variable and in these specifications, the coefficient on the Private Firm Dummy represents the additional cost of the bank debt in basis points borne by the private firm relative to a similar public firm. The additional cost of private firms in this analysis ranges from about 90 to 120 basis points. Specifications (iii) and (iv) use the log of spreads as the dependent variable and the result holds strongly in this specification as well.

Given the results discussed above, one can draw the conclusion that the cost of bank debt is higher for private firms controlling for firm and other characteristics. However there may be several competing hypotheses for why public firms face lower costs of capital compared to an otherwise identical private firm such as listing requirements, etc. besides the effect of a better information environment as suggested in this paper. Therefore I address some of these issues in Sections 5 and 6 and provide evidence consistent with an information spillover hypothesis.

4.3 Competing Hypotheses and Robustness Issues

The results using the post-IPO sample of public firms are subjected to several robustness checks.

(i) Firm Ageing

The pre-IPO loans may be one of the first loans that the firm ever receives firm a bank. Consequently one hypothesis could be that the bank charges a higher spread due to higher uncertainty over the firm's quality, suggesting that as the bank learns more about the firm over time or as the firm matures, the bank reduces the spread. The IPO dummy may be merely picking up the effect of the earlier versus later loans and have nothing to do with the IPO event since the post-IPO loans are always later in event time. To test this hypothesis, I examine a sample of only pre-IPO loans and replace the IPO dummy with a dummy for the first loan. If this hypothesis were true, then the first loan dummy should be significantly positive. The results are given in Table 6 and the

first loan dummy is not significant, except in the first specification, implying that the result that spreads reduce after the IPO is not merely due to the bank's better understanding of firm quality over time. In an alternative specification, not reported, I include a first loan dummy in the pooled sample of pre-IPO and post-IPO loans and the post-IPO dummy is still negative and significant. In fact a stronger point can be made regarding the negative coefficient on the post-IPO dummy. The literature on relationship banking argues that the cost of borrowing could be increasing in the length of the banking relationship and therefore the post-IPO dummy underestimates the actual reduction due to the IPO.

(ii) Calendar Time Effects

Given the sample construction, the post-IPO loans tend to be clustered in the latter half of the sample period and pre-IPO loans in the early part. To ensure that the results are not driven by some calendar time effects during this period that systematically affected spreads, I control for time in three ways. First, several specifications include time fixed effects to control for changes in the overall level of spreads over time. Second, the analysis in Table 3 is repeated for a shorter window of time, 1995 through 1997, when the many of the pre-IPO and post-IPO loans are concurrent. The results are qualitatively the same and in fact stronger for this sub-sample. The results are not reported. Finally, the calendar time effect may be important due to changes in interest rates during the period. Therefore I add the average default spread[7] during the loan year to the AIS-Drawn spread regressions in Table 3. The post-IPO dummy continues to be strongly significant.

(iii) Sample Selection Bias of the IPO firms

To control for the sample selection bias of firms that are public, I use the treatment effect correction which is variation on the standard Heckman correction. In the first stage a probit model

[7]The default spread is computed as the average difference in each year between the spread on Moody's seasoned Aaa bonds and Baa bonds as reported by the Federal Reserve Bank website, http://research.stlouisfed.org/fred/data/irates.html

is estimated for public firms versus private firms and then the second stage model is estimated for the relationship between bank spreads and the presence of public equity controlling for loan and firm characteristics. However the results have to be interpreted carefully since many of the variables in the first stage probit are the same as the second stage OLS regression of loan spreads. The results are presented in Table 7.

5 Cross-sectional Results Related to Information Production

The results in the earlier section suggest that the cost of bank debt reduces subsequent to going public, after controlling for firm and loan characteristics. However these results are consistent with other competing hypotheses. For instance improved governance mechanisms or better managerial incentives using stock options could improve the overall quality of the firm post-IPO, resulting in lower costs of bank debt. To provide evidence in support of the information spillover hypothesis, I directly test whether this reduction can be explained by variables that measure the level of information production and informativeness of the stock price. These variables proxy for the information spillover hypothesized in the model. Table 6 contains results of regressions on the pooled sample of spreads on all the control variables and different alternative measures of the level and information production in the stock market which represent the interaction of the post-IPO dummy and these stock market variables. If all investors, including the bank, benefit from the information production in the stock market, the cross-sectional differences in the cost of borrowing should be explained by these measures. In keeping with the model features, I use the following measures of stock informativeness and liquidity:

(i) Market capitalization on the day of the loan, obtained from the CRSP database, measures the size of the equity which has an impact on the number of stock market participants and consequently the information production.

(ii) Average relative bid-ask spread, measured using the average intraday relative bid-ask

spread from the TAQ (Trade and Quote) database over the last 6 months is a another measure of stock liquidity.

(iii) Percentage of stock held by institutional shareholders during the calendar year prior to the loan, obtained from the Spectrum database is an alternative measure of the number of informed investors following the stock.

(iv) The analyst following for a particular firm, obtained from the I/B/E/S database is used as a measure of the overall level of information production in the stock. This variable is measured in two ways: first, I use the log of the number of analysts following a stock and second, I use a dummy that takes on a value "1" when there are analysts following the stock and "0" otherwise.

If the gains from going public can be attributable to information production in the stock markets, these variables should explain the cross-sectional variation in bank spreads. Since none of these measures fully measures the information spillovers, I also include a post-IPO dummy to capture other effects of the IPO event[8] and additional information effects. The variables are all significant and have the expected sign. The predicted signs for the variables are such that the cost of borrowing is decreasing in the measure of liquidity and therefore is negative for all variables except relative spread. It should be noted here that all results of significance are based on two-sided tests, however since there is a theory for how these variables should affect the bank spreads, one-sided tests would be appropriate and only strengthen the results.

The results are shown in Table 8. The cost of bank debt, measured as Ln AIS Drawn, is decreasing in market capitalization, institutional holdings, and analyst coverage as predicted and increasing in average relative bid-ask spread. All these indicate a strong relationship between the cost of borrowing and the level of liquidity and information production in the stock market. This suggests that information production in the stock market does spillover into the other securities issued by the firm. Further this result adds to the results on bank uniqueness and shows that

[8]It can be argued that having a publicly traded stock improves the firm's governance and ability to provide better managerial incentives, thereby improving the firm quality and reducing the costs of borrowing

information also flows from the stock markets to the bank.

The result that cost of borrowing is lower for subsequent to the IPO could be driven by the fact that the firm has more alternative sources of funding and this improves it bargaining power vis-à-vis the bank. This is partially controlled for by including a dummy for whether the loan was made by a single lender or multiple banks. However, it could be argued that the same firm has access to more sources of borrowing because of the improved information surrounding the firm subsequent to the IPO. This is consistent with the result in Table2 that shows that the fraction of syndicated loans increase significantly post-IPO. Taken together the results support the hypothesis that firms enjoy lower costs of borrowing if there is a traded stock for the firm and the cost of borrowing is related to measures of information production and liquidity in the market for the firm's stock.

However, one could argue that the results so far may be specific to the early stage in the firm's life cycle when the information about the firm is limited. To verify this, a similar study is done on a sample of firms that were taken private after an LBO.

6 Results on the LBO Sample

In this section, I discuss results from tests on the LBO/MBO sample. If the information in observable stock prices is valuable, then, controlling for changes in firm risk and loan characteristics, the cost of bank borrowing should increase subsequent to the LBO. The results are shown in Table 9. In Panel A the sample excludes all loans that were issued during the six months prior to the delisting, since the delisting event may have been anticipated by the bank and priced into the loan. The coefficient on dummy that takes on the value "1" when the firm is still listed ("Pre Delisting Dummy") is negative and significant suggesting that controlling for other firm and loan characteristics the presence of a traded public stock for the firm lowers the cost of bank borrowing. In Panel B, the loans in the six month prior period are included but treated as post delisting

loans. The results are similar and in fact stronger. These results taken together with the results on the IPO sample suggest that the cost of bank debt is lower for firms with public equity, which is consistent with the information spillover hypothesis.

7 Conclusion

This paper estimates the value of information externalities of public equity on the borrowing costs of firms. Consistent with the information spillover hypothesis, the paper documents that private firms face higher costs of bank debt relative to when they are publicly traded and also relative to a similar publicly traded firm that obtains a bank loan contemporaneously. The tests also provide evidence that the cost of bank debt of public firms is affected by information spillovers from public equity and is decreasing in measures of stock informativeness. The study uses two different samples of firms that have bank loans in the presence of public equity and when they were privately held. The first is a sample of firms that go public and the second is a sample of firms that go private and delist their stock subsequent to an LBO or MBO. The results are subjected to several robustness checks and continue to be statistically and economically significant.

This study contributes to the existing literature in several ways. It provides an empirical estimate of the value of information externalities of public equity. The results suggest that a liquid stock market with incentives for information production, could result in benefits to other securities of the firm resulting in an overall lower cost of capital for the firm. The study also adds to the banking literature by providing evidence on the usefulness of financial markets to banks thereby suggesting complementarities between markets and financial intermediaries.

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Table 1 - Distribution of Loans in the Sample Period

Panel A :Distribution of loans over the sample period

The distribution of the entire sample of 1622 loans over the sample period is presented here. The loans are further classified as Pre-IPO is the loan was issued while the firm was still private and Post-IPO if the loan was issued subsequent to the firm's IPO.

	Pre-IPO		Post-IPO		Total		
	Number	%	Number	%	Number	%	% Pre
1991	3	1.0%			3	0.2%	100.0%
1992	2	0.7%			2	0.1%	100.0%
1993	55	18.8%			55	3.4%	100.0%
1994	41	14.0%	4	0.3%	45	2.8%	91.1%
1995	50	17.1%	51	3.8%	101	6.2%	49.5%
1996	88	30.0%	178	13.4%	266	16.4%	33.1%
1997	53	18.1%	315	23.7%	368	22.7%	14.4%
1998	1	0.3%	334	25.1%	335	20.7%	0.3%
1999			252	19.0%	252	15.5%	0.0%
2000			195	14.7%	195	12.0%	0.0%
Total	293		1329		1622		

Panel B : Loans relative to the IPO

The distribution of the 589 sample firms over the two classes of loans (i) Pre-IPO and (ii)Post-IPO, is presented here.

	Firms	**Loans**		
		Pre-IPO	**Post-IPO**	**Total**
Post-IPO only	409		1024	1024
Pre- and Post-IPO	115	165	305	470
Pre-IPO only	65	128		128
	589	293	1329	1622

Table 2 - Panel A: Descriptive Statistics on All Pre- and Post-IPO Loans

The descriptive statistics for the sample of 1622 loans that include loans issued pre and post-IPO are presented here. The firm specific variables are obtained from the accounting data of the fiscal year end immediately prior to each loan. Assets, Sales and Earnings before Interest, Taxes, Depreciation and Amortization (EBITDA) are in millions of dollars. Leverage is measured as the ratio of Long term debt to Total Assets, Interest Coverage is the ratio of EBITDA to interest expense, Tangible is the ratio of Property, Plant and Equipment (PPE) to Total Assets, Current Ratio is the ratio of Current Assets to Current Liabilities and Profitability is the ratio of EBITDA to Total Assets. The loan specific variables are obtained from the Loan Pricing Corporation database. The cost of bank loans used in the empirical analysis is the All-in Spread over LIBOR in terms of basis points.

	Pre-IPO		**Post-IPO**		
	N	Mean	N	Mean	t-statistic
Firm Characteristics					
Assets ($ millions)	293	198.50	1329	402.90	3.77***
Sales ($ millions)	293	230.70	1329	385.10	2.69***
EBITDA ($ millions)	293	2.57	1329	46.00	6.96***
Leverage	293	0.278	1329	0.263	-0.91
Interest Coverage	293	5.74	1329	28.90	4.70***
Tangible	293	0.32	1329	0.28	-2.65***
Current Ratio	293	1.69	1329	2.39	6.47***
Profitability	293	0.069	1329	0.091	1.13
Loan Characteristics					
AIS Drawn (basis points)	293	288.00	1329	226.40	-8.97***
Deal Size ($ Millions)	293	92.19	1329	183.57	5.66***
Fraction Secured	293	0.846	1329	0.738	-4.46***
Loan Maturity (Months)	293	43.230	1329	53.140	1.08
Fraction “Not Rated” Loans	293	0.795	1329	0.689	-3.95***
Fraction “BBB” Loans	293	0.007	1329	0.023	2.50***
Fraction “BB” Loans	293	0.130	1329	0.159	1.32
Fraction “B” Loans	293	0.055	1329	0.113	3.67***
Fraction “Lower than B” Loans	293	0.014	1329	0.014	0.09
Fraction of Single Lender Loans	293	0.556	1329	0.242	-10.01***
VC-Backed Firm					
AIS Drawn (basis points)	106	307.83	413	246.73	-5.29***
Non VC-Backed Firm					
AIS Drawn (basis points)	187	276.75	916	217.22	-7.10***

Table 2 - Panel B: Descriptive Statistics using Firms with loans Pre- and Post-IPO Loans

The descriptive statistics for the sample of 470 loans that include loans issued pre and post-IPO are presented here. The firm specific variables are obtained from the accounting data of the fiscal year end immediately prior to each loan. Assets, Sales and Earnings before Interest, Taxes, Depreciation and Amortization (EBITDA) are in millions of dollars. Leverage is measured as the ratio of Long term debt to Total Assets, Interest Coverage is the ratio of EBITDA to interest expense, Tangible is the ratio of Property, Plant and Equipment (PPE) to Total Assets, Current Ratio is the ratio of Current Assets to Current Liabilities and Profitability is the ratio of EBITDA to Total Assets. The loan specific variables are obtained from the Loan Pricing Corporation database. The cost of bank loans used in the empirical analysis is the All-in Spread over LIBOR in terms of basis points.

	Pre-IPO		**Post-IPO**		
	N	Mean	N	Mean	t-statistic
Firm Characteristics					
Assets ($ millions)	165	285.20	305	912.30	4.48***
Sales ($ millions)	165	330.80	305	925.10	4.09***
EBITDA ($ millions)	165	-1.70	305	119.50	6.84***
LT Debt	165	157.60	305	423.30	3.58***
LT Debt / Assets	165	0.350	305	0.390	1.67*
Interest Coverage	165	0.57	305	29.14	2.01**
PPE / Assets	165	0.38	305	0.30	-2.90***
Current Ratio	165	1.47	305	2.01	6.19***
EBITDA / Assets	165	0.126	305	0.140	0.75
Loan Characteristics					
AIS Drawn (basis points)	165	283.03	305	190.64	-9.99***
Deal Size ($ Millions)	165	122.50	305	327.00	6.15***
Fraction Secured	165	0.840	305	0.710	-4.46***
Loan Maturity (Months)	165	45.920	305	50.650	1.87*
Fraction "Not Rated" Loans	165	0.710	305	0.520	-4.19***
Fraction of Single Lender Loans	165	0.470	305	0.120	-8.03***
Fraction Relationship Bank	54	0.67	305	0.69	0.36

Table 3 - Panel A : Bank Loan Spreads Pre and Post-IPO
The sample consists of 1622 bank loans from Loan Pricing Corporation database and includes loans issued pre and post-IPO. The dependent variable is the log of the bank loan all-in spread over LIBOR. The post-IPO Dummy is 1 when the loan is post-IPO and 0 otherwise. T-statistics are in [ ]. Significance at the 1% level is indicated by ***, 5% level by ** and 10% level by *.

	Dependent Variable = Ln AIS Drawn			
	(i)	(ii)	(iii)	(iv)
Post-IPO Dummy	-0.113***	-0.234***	-0.194***	-0.194***
	[-3.63]	[-5.44]	[-4.96]	[-4.82]
Book Leverage	0.271***	0.259***	0.207***	
	[5.19]	[4.94]	[4.5]	
Market Leverage				0.03***
				[4.07]
Log Assets	-0.117***	-0.074***	-0.077***	-0.101***
	[-12.06]	[-5.59]	[-5.87]	[-8.03]
Interest Coverage	0.000	0	0	0
	[-0.03]	[0.99]	[1.01]	[1.26]
Tangible	0.024	0.038	0.056	0.139***
	[0.44]	[0.74]	[1.19]	[2.72]
Current Ratio	-0.009	-0.009	-0.003	0.002
	[-1.56]	[-1.41]	[-0.57]	[0.52]
Profitability	-0.432***	-0.27***	-0.253***	-0.415***
	[-6.63]	[-4.63]	[-5.2]	[-5.11]
VC Backed		0.093***	0.063**	0.039
		[3.23]	[2.37]	[1.49]
VC * Pre-IPO		-0.149***	-0.137***	-0.08
		[-2.47]	[-2.48]	[-1.52]
Log Loan Size		-0.076***	-0.038***	-0.034***
		[-6.53]	[-3.15]	[-3.03]
Log Contractual Maturity		0.022	-0.042**	-0.049***
		[1.24]	[-2.39]	[-2.79]
Secured Dummy		0.287***	0.154***	0.165***
		[8.9]	[5.1]	[5.13]
Tech Dummy	0.103***	0.078***		
	[3.49]	[2.61]		
Sole Lender Dummy		0.061*	0.086***	0.057**
		[1.78]	[2.82]	[1.95]
Prime Rate Dummy			0.319***	0.324***
			[13.86]	[14.5]
Intercept	6.758***			
	[66.36]			
Loan Rating Dummies		Yes	Yes	Yes
Loan Type Dummies			Yes	Yes
Loan Purpose Dummies			Yes	Yes
Year Dummy		Yes	Yes	Yes
Industry Dummy			Yes	Yes
N	1622	1546	1546	1546
Adjusted R^2	0.186	0.361	0.369	0.516

Table 3 - Panel B : Bank Loan Spreads Pre and Post-IPO
The sample consists of 1622 bank loans from Loan Pricing Corporation database and includes loans issued pre and post-IPO. The dependent variable is the bank loan all-in spread over the LIBOR in b.p. The post-IPO Dummy is 1 when the loan is post-IPO and 0 otherwise. T-statistics are in [ ]. Significance at the 1% level is indicated by ***, 5% level by ** and 10% level by *.

	Dependent Variable = AIS Drawn			
	(i)	(ii)	(iii)	(iv)
Post-IPO Dummy	-28.208***	-46.311***	-37.084***	-38.549***
	[-4.27]	[-5.27]	[-4.68]	[-4.62]
Book Leverage	40.679***	44.729***	33.453***	
	[3.97]	[4.23]	[3.55]	
Market Leverage				8.317***
				[3.33]
Log Assets	-22.829***	-13.527***	-15.097***	-20.266***
	[-12.19]	[-4.82]	[-5.65]	[-7.94]
Interest Coverage	-0.007	0.001	0.003	0.007
	[-0.88]	[0.08]	[0.29]	[-0.66]
Tangible	13.975	15.263	19.029**	38.049***
	[1.26]	[1.47]	[1.99]	[3.62]
Current Ratio	-2.413**	-2.841**	-1.579	-0.356
	[-2.12]	[-2.22]	[-1.34]	[-0.32]
Profitability	-107.397***	-76.598***	-72.049***	-105.824***
	[-6.96]	[-5.48]	[-6.071]	[-5.95]
VC Backed		17.282***	11.599**	6.912
		[2.96]	[2.12]	[1.27]
VC * Pre-IPO		-27.285**	-24.585**	-12.008
		[-2.07]	[-2.08]	[-0.96]
Log Loan Size		-17.837***	-8.766***	-7.180***
		[-7.32]	[-3.61]	[-3.05]
Log Contractual Maturity		3.512	-9.700**	-11.220***
		[0.84]	[2.29]	[-2.59]
Secured Dummy		43.967***	14.223***	16.000***
		[7.59]	[2.62]	[2.82]
Tech Dummy	19.306***	13.86**		
	[2.90]	[2.07]		
Sole Lender Dummy		7.754	13.126**	7.427
		[1.03]	[2.01]	[1.56]
Prime Rate Dummy			68.842***	68.95***
			[14.59]	[14.54]
Intercept	521.646***			
	[24.45]			
Loan Rating Dummies		Yes	Yes	Yes
Loan Type Dummies			Yes	Yes
Loan Purpose Dummies			Yes	Yes
Year Dummy		Yes	Yes	Yes
Industry Dummy			Yes	Yes
N	1622	1546	1546	1546
Adjusted R^2	0.206	0.356	0.475	0.502

Table 4 : Bank Loan Spreads for Firms with Loans both Pre- and Post-IPO
The sample consists of 470 bank loans from Loan Pricing Corporation database and includes firms with loans issued both pre and post-IPO. The dependent variable is the log of bank loan all-in spread over LIBOR. The Post-IPO Dummy is 1 when the loan is after the IPO and 0 otherwise. T-statistics are in [ ]. Significance at the 1% level is shown as ***, 5% level as ** and 10% level as *.

	Dependent Variable = Ln AIS Drawn				
	(i)	(ii)	(iii)	(iv)	(v)
Post-IPO Dummy	-52.782***	-51.226***	-44.916***	-39.611***	-75.987***
	[-5.23]	[-4.02]	[-3.87]	[-3.23]	[-5.55]
Book Leverage	50.259***	46.492***	29.649*		51.223**
	[3.31]	[2.66]	[1.76]		[2.26]
Market Leverage				6.954***	
				[4.96]	
Log Assets	-24.856***	-15.207***	-19.901***	-26.309***	-7.062
	[-8.02]	[-3.18]	[-4.23]	[-6.21]	[-0.85]
Interest Coverage	-0.001	-0.001	-0.001	0	-0.001
	[-0.21]	[-0.09]	[-0.13]	[-0.04]	[-0.1]
Tangible	-20.33	-9.325	13.99	29.942*	-61.655
	[-1.11]	[-0.52]	[0.77]	[1.67]	[-1.48]
Current Ratio	-4.798*	-4.669	-3.094	-2.176	-4.324
	[-1.69]	[-1.58]	[-1.3]	[-1]	[-1.15]
Profitability	-103.881***	-87.893***	-65.538***	-82.638***	-14.634
	[-3.13]	[-3.11]	[-2.55]	[-2.96]	[-0.39]
VC Backed		13.329	20.188*	16.465	-91.2
		[1.28]	[1.79]	[1.55]	[-1.28]
VC * Pre-IPO		29.079	13.545	13.364	23.142
		[1.53]	[0.81]	[0.82]	[1.42]
Log Loan Size		-15.528***	-8.866***	-6.216*	-0.031
		[-4.01]	[-2.56]	[-1.84]	[-0.01]
Log Contractual Maturity		11.618*	0.335	-5.41	0.272
		[1.79]	[0.04]	[-0.79]	[0.04]
Secured Dummy		21.221***	-10.947	-11.457	-11.512
		[2.52]	[-1.3]	[-1.29]	[-1.25]
Tech Dummy	-14.669	-15.284			
	[-1.44]	[-1.54]			
Sole Lender Dummy		22.013	19.456	14.096	16.48
		[1.62]	[1.59]	[1.26]	[1.43]
Prime Rate Dummy			50.701***	53.588***	49.781***
			[6.5]	[6.69]	[6.26]
Intercept	567.905***				
	[16.05]				
Loan Rating Dummies			Yes	Yes	Yes
Loan Type Dummies			Yes	Yes	Yes
Loan Purpose Dummies			Yes	Yes	Yes
Year Dummy		Yes	Yes	Yes	Yes
Industry Dummy			Yes	Yes	Yes
Firm Dummy					Yes
N	470	470	470	413	470
Adjusted R^2	0.320	0.434	0.551	0.571	0.706

Table 5 - Panel A: Bank Loan Spreads on Private and Public Firms (Matched by Industry and Size)

The sample consists of 410 bank loans from Loan Pricing Corporation database issued by firms pre-IPO and a matched sample of public firms. The matched sample consists of loans obtained in the same year by a public firm in the same industry (one-digit SIC code) and same size (Book Assets) decile. The dependent variable is either the bank all-in spread over LIBOR or its log. The Private Firm Dummy is 1 if the loan is by a private (pre-IPO) firm and 0 otherwise. T-statistics are provided in [ ]. Significance at the 1% level is indicated by ***, 5% level by ** and 10% level by *.

Dependent Variable =	AIS Drawn		Log AIS Drawn	
	(i)	(ii)	(iii)	(iv)
Private Firm Dummy	110.06***	123.69***	0.65***	0.69***
	[4.37]	[4.77]	[4.07]	[4.26]
Book Leverage	37.39**	40.28**	0.31***	0.26**
	[2.04]	[2.11]	[2.67]	[2.16]
Log Assets	-11.24***	-12.42***	-0.06**	-0.05**
	[-2.65]	[-2.82]	[-2.18]	[-1.96]
Interest Coverage	0.05	0.04	0.00	0.00
	[0.98]	[0.05]	[1.19]	[1.07]
Tangible	-16.51	-4.02	-0.17	-0.12
	[-1.01]	[-0.23]	[-1.61]	[-1.03]
Current Ratio	-4.66	-5.23*	-0.04**	-0.04**
	[-1.59]	[-1.78]	[-2.19]	[-2.33]
Profitability	-38.24***	-39.72***	-0.18**	-0.17*
	[-2.57]	[-2.66]	[-1.94]	[-1.83]
Log Loan Size	-5.20	-5.13	-0.07***	-0.07***
	[-1.44]	[-1.40]	[-3.08]	[-3.24]
Log Contractual Maturity	-13.23*	-10.79	-0.07	-0.05
	[-1.63]	[-1.30]	[-1.28]	[-0.95]
Secured Dummy	-6.65	-4.63	0.15*	0.14
	[-0.47]	[[-0.32]	[1.71]	[1.53
Sole Lender Dummy	20.51	17.33	-0.03	-0.01
	[1.48]	[1.23]	[-0.35]	[-0.14]
Prime Rate Dummy	105.93***	102.28***	0.47***	0.45***
	[9.10]	[8.63]	[6.40]	[6.03]
Intercept	315.36***	305.72***	6.31***	-0.07
	[3.90]	[3.23]	[12.37]	[-0.45]
Loan Rating Dummies	Yes	Yes	Yes	Yes
Loan Type Dummies	Yes	Yes	Yes	Yes
Loan Purpose Dummies	Yes	Yes	Yes	Yes
Year Dummy	Yes	Yes	Yes	Yes
Industry Dummy		Yes		Yes
N	410	410	410	410
Adjusted R^2	0.795	0.796	0.869	0.869

Table 5 - Panel B: Bank Loan Spreads on Private and Public Firms (Matched by Size and Leverage)

The sample consists of 356 bank loans from Loan Pricing Corporation database issued by firms pre-IPO and a matched sample of public firms. The matched sample consists of loans obtained in the same year by a public firm in the same size (Book Assets) and Leverage (Book Leverage) deciles. The dependent variable is either the bank all-in spread over LIBOR or its log. The Private Firm Dummy is 1 if the loan is by a private (pre-IPO) firm and 0 otherwise. T-statistics are provided in [ ]. Significance at the 1% level is indicated by ***, 5% level by ** and 10% level by *.

Dependent Variable =	AIS Drawn		Log AIS Drawn	
	(i)	(ii)	(iii)	(iv)
Private Firm Dummy	92.21***	106.19***	0.66***	0.70***
	[3.64]	[4.00]	[4.03]	[4.09]
Book Leverage	70.05***	72.47***	0.60***	0.58***
	[3.62]	[3.66]	[4.79]	[4.52]
Log Assets	-11.68***	-14.57***	-0.08***	-0.09***
	[-2.83]	[-3.34]	[-3.05]	[-3.34]
Interest Coverage	0.05	0.05	0.00	0.00
	[0.97]	[1.01]	[0.79]	[1.07]
Tangible	0.29	12.85	-0.02	0.01
	[0.02]	[0.71]	[-0.18]	[0.13]
Current Ratio	7.56*	6.32	0.07	0.09***
	[1.66]	[1.33]	[2.31]	[2.77]
Profitability	-30.04	-31.48*	-0.19	-0.18
	[-1.62]	[-1.70]	[-1.60]	[-1.52]
Log Loan Size	-4.59	-3.86	-0.06**	-0.06**
	[-1.23]	[-1.04]	[-2.40]	[-2.30]
Log Contractual Maturity	-15.87*	-14.49	-0.04	-0.03
	[-1.70]	[-1.55]	[-0.72]	[-0.42]
Secured Dummy	18.20	-16.50	0.06	0.08
	[-1.31]	[-1.16]	[0.68]	[0.86]
Sole Lender Dummy	3.46	-3.38	-0.09	-0.09
	[0.26]	[-0.25]	[-1.00]	[-0.97]
Prime Rate Dummy	85.08***	89.09***	0.38***	0.40***
	[7.45]	[7.73]	[5.19]	[5.36]
Intercept	372.09***	416.20***	6.03***	6.20***
	[3.98]	[4.21]	[9.99]	[9.76]
Loan Rating Dummies	Yes	Yes	Yes	Yes
Loan Type Dummies	Yes	Yes	Yes	Yes
Loan Purpose Dummies	Yes	Yes	Yes	Yes
Year Dummy	Yes	Yes	Yes	Yes
Industry Dummy		Yes		Yes
N	356	356	356	356
Adjusted R^2	0.797	0.799	0.868	0.871

Table 6 : Bank Loan Spreads Pre-IPO

The sample consists of 293 loans from Loan Pricing Corporation database issued pre-IPO. The dependent variable is the log of bank loan all-in spread over LIBOR. The first Loan Dummy is 1 if the loan is the first loan that the firm was issued and 0 otherwise. T-statistics are provided in [ ]. Significance at the 1% level is indicated by ***, 5% level by ** and 10% level by *.

	Dependent Variable = Ln AIS Drawn			
	(i)	(ii)	(iii)	(iv)
First Loan Dummy	0.102**	0.079	0.081	0.038
	[1.95]	[1.29]	[1.36]	[0.5]
Book Leverage	0.133	0.152	0.295***	
	[1.13]	[1.36]	[2.57]	
Market Leverage				0.005
				[0.37]
Log Assets	-0.115***	-0.059**	-0.081***	-0.147***
	[-5.83]	[-2.28]	[-3.47]	[-4.7]
Interest Coverage	0	0	0	0
	[1.24]	[0.74]	[1.43]	[1.14]
Tangible	-0.066	-0.162	-0.07	0.212**
	[-0.63]	[-1.53]	[-0.77]	[2.07]
Current Ratio	-0.047	-0.066	-0.046	0.014
	[-1.16]	[-1.56]	[-1.1]	[0.44]
Profitability	-0.168*	-0.144*	-0.119*	-0.65***
	[-1.86]	[-1.64]	[-1.92]	[-3.38]
VC Backed		0.058	0.019	-0.032
		[1.11]	[0.4]	[-0.6]
Log Loan Size		-0.053***	-0.002	0.014
		[-2.87]	[-0.12]	[0.66]
Log Contractual Maturity		0.049	0.017	0.008
		[1.48]	[0.44]	[0.2]
Secured Dummy		0.183**	0.008	0.065
		[1.96]	[0.09]	[0.62]
Tech Dummy	-0.111*	-0.122**		
	[-1.72]	[-2.02]		
Sole Lender Dummy		0.036	0.054	-0.008
		[0.57]	[0.86]	[-0.13]
Prime Rate Dummy			0.314***	0.285***
			[6.64]	[5.93]
Intercept	6.821***			
	[30.72]			
Loan Rating Dummies		Yes	Yes	Yes
Loan Type Dummies			Yes	Yes
Loan Purpose Dummies			Yes	Yes
Year Dummy		Yes	Yes	Yes
Industry Dummy			Yes	Yes
N	293	293	293	222
Adjusted R^2	0.190	0.229	0.386	0.441

Table 7 : Bank Loan Spreads Pre and Post-IPO with Treatment Effects Correction
The sample consists of all bank loans from Loan Pricing Corporation database issued to IPO firms. The dependent variable is the log of the bank loan all-in spread over the LIBOR. The Post-IPO Dummy takes one a value 1 when the loan is after the IPO and 0 otherwise. The OLS regressions include dummies for loan ratings, loan type and loan purpose. T-statistics are provided in [ ]. Significance at the 1% level is indicated by ***, 5% level by ** and 10% level by *.

	(i)		**(ii)**	
	Probit	OLS	Probit	OLS
Dependent Variable ->	Post-IPO Dum	Ln AIS	Post-IPO Dum	Ln AIS
Post-IPO Dummy		-0.131***		-0.308***
		[-2.62]		[-4.33]
Book Leverage	-1.355***	0.267***		
	[-7.35]	[4.98]		
Market Leverage			-0.063***	0.025***
			[-2.85]	[3.92]
Log Assets	0.390***	-0.084***	0.307***	-0.063***
	[13.35]	[-6.92]	[9.22]	[-4.24]
Market-to-Book	0.004		0.002	
	[1.50]		[0.93]	
Interest Coverage		0.000		0.000
		[0.8]		[1.04]
Tangible	-0.435	0.055	-0.649***	0.143***
	[-2.68]	[1.16]	[-3.71]	[2.92]
Current Ratio		-0.005		0.004
		[-1.03]		[0.85]
Profitability	0.035	-0.261***	-2.578***	-0.442***
	[0.22]	[-5.56]	[-6.91]	[-7.17]
VC Backed		0.066***		0.034
		[2.57]		[1.38]
VC * Pre-IPO		-0.136***		-0.06
		[-2.52]		[-1]
Log Loan Size		-0.038***		-0.028***
		[-3.5]		[-2.53]
Log Contractual Maturity		-0.044***		-0.056***
		[-2.43]		[-3.2]
Secured Dummy		0.155***		0.161***
		[5.78]		[6.07]
Sole Lender Dummy		0.086***		0.052*
		[2.74]		[1.71]
Prime Rate Dummy		0.316***		0.316***
		[13.87]		[14.07]
Intercept	-3.133***		-1.942***	
	[-9.94]		[-5.14]	
Year Dummy		Yes		Yes
Industry Dummy		Yes		Yes
Lambda		-0.028**		0.032
		[-2.04]		[1.15]
N	1641	1546	1461	1360
Adjusted R^2		0.477		0.531

Table 8 : Bank Loan Spreads and Measures of Stock Informativeness and Liquidity
The sample includes all 1622 loans issued both pre and post-IPO. The dependent variable is the log of all-in spread over LIBOR. All specifications include dummies for loan ratings, loan type and loan purpose. T-statistics are in [ ]. Significance at the 1%, 5% and 10% levels are ***, ** and *.

	Dependent Variable = Ln AIS Drawn				
	(i)	(ii)	(iii)	(iv)	(v)
Post-IPO Dummy	0.645***	-0.203***	-0.132***	-0.130***	-0.118***
	[5.38]	[-4.16]	[-3.11]	[-3.25]	[-2.82]
Leverage	0.171***	0.146***	0.159***	0.158***	0.162***
	[3.69]	[2.94]	[2.94]	[3.46]	[3.57]
Log Assets	-0.045***	-0.065***	-0.057***	-0.059***	-0.065***
	[-3.27]	[-4.65]	[-3.7]	[-4.46]	[-4.94]
Interest Coverage	0.000*	0.000	0.000	0.000	0.000
	[1.63]	[0.98]	[1.38]	[1.39]	[1.42]
Tangible	0.094**	0.094*	0.037	0.084*	0.082*
	[1.95]	[1.88]	[0.67]	[1.83]	[1.79]
Current Ratio	0.000	-0.001	-0.008	-0.003	-0.003
	[0.07]	[-0.15]	[-0.95]	[-0.54]	[-0.47]
Profitability	-0.233***	-0.219***	-0.252***	-0.24***	-0.243***
	[-4.87]	[-4.6]	[-4.75]	[-5.21]	[-5.21]
VC Backed	0.058**	0.065**	0.082***	0.061**	0.054**
	[2.15]	[2.29]	[2.49]	[2.27]	[2.05]
VC * Pre-IPO	-0.078	-0.105*	-0.124**	-0.113**	-0.114**
	[-1.43]	[-1.89]	[-2.18]	[-2.08]	[-2.08]
% Secondary Shares in IPO	-0.002***	-0.003***	-0.002***	-0.003***	-0.003***
	[-4.07]	[-4.37]	[-3.29]	[-5.86]	[-5.87]
Log Loan Size	-0.028***	-0.038***	-0.019	-0.034***	-0.035***
	[-2.53]	[-3.31]	[-1.54]	[-2.82]	[-2.93]
Log Contractual Maturity	-0.056***	-0.047***	-0.075***	-0.048***	-0.044***
	[-3.12]	[-2.62]	[-3.61]	[-2.75]	[-2.56]
Secured Dummy	0.144***	0.151***	0.155***	0.155***	0.155***
	[4.68]	[4.5]	[4.24]	[5.18]	[5.18]
Sole Lender Dummy	0.089***	0.078***	0.081**	0.094***	0.090***
	[3.01]	[2.5]	[2.34]	[3.13]	[2.99]
Prime Rate Dummy	0.324***	0.315***	0.305***	0.319***	0.322***
	[14.12]	[12.87]	[11.16]	[14.00]	[14.02]
Market Capitalization	-0.069***				
	[-6.59]				
Relative Bid-Ask Spread		1.373**			
		[2.17]			
Institutional Holding			-0.003***		
			[-4.17]		
Analyst Coverage				-0.045***	
				[-2.74]	
Analyst Dummy					-0.054**
					[-2.21]
Year Dummy	Yes	Yes	Yes	Yes	Yes
Industry Dummy	Yes	Yes	Yes	Yes	Yes
N	1431	1323	1067	1546	1546
Adjusted R^2	0.519	0.499	0.519	0.491	0.49

Table 9 - Panel A : Bank Loan Spreads Pre and Post Going-Private transaction
The sample consists of 196 bank loans from Loan Pricing Corporation database issued to firms that underwent a going private transaction and includes loans issued pre and post stock delisting. The dependent variable is the log of the bank loan all-in spread over LIBOR. The Pre Delisting Dummy takes one a value 1 when the loan is prior to going private and 0 otherwise. Specifications (ii), (iii) and (iv) control for industry effects and (iv) controls for firm effects. T-statistics are provided in [ ]. Significance at the 1% level is indicated by ***, 5% level by ** and 10% level by *.

	Dependent Variable = Ln AIS Drawn			
	(i)	(ii)	(iii)	(iv)
Pre Delisting Dummy	-0.168*	-0.309*	-0.425***	-0.511**
	[-1.86]	[-1.75]	[-2.55]	[-2.2]
Leverage	0.234***	0.201**	0.155	0.087
	[2.49]	[1.96]	[1.5]	[0.55]
Log Assets	-0.043	-0.03	-0.046	-0.19**
	[-0.84]	[-0.58]	[-0.81]	[-1.99]
Interest Coverage	-0.002	-0.001	-0.003	-0.009**
	[-1.1]	[-0.72]	[-1.36]	[-2.08]
Tangible	-0.098	-0.175	-0.052	-1.46***
	[-0.65]	[-1.12]	[-0.29]	[-2.77]
Current Ratio	0.015	0.014	0.026	-0.053
	[0.68]	[0.65]	[0.87]	[-1.27]
Profitability	-1.069***	-1.097***	-1.417***	-1.607***
	[-3.75]	[-3.98]	[-4.53]	[-3.74]
Log Loan Size	-0.14***	-0.143***	-0.138***	-0.038
	[-2.98]	[-3.02]	[-2.79]	[-0.9]
Log Contractual Maturity	0.016	0.026	-0.016	-0.083
	[0.36]	[0.64]	[-0.36]	[-1.44]
Secured Dummy	0.237***	0.271***	0.291***	0.171**
	[3.22]	[3.84]	[4.06]	[2.12]
Sole Lender Dummy	0.12	0.102	0.049	-0.032
	[1.26]	[1.07]	[0.51]	[-0.27]
S&P "BB" Dummy	0.981***	0.94***	0.997***	8.98***
	[5.58]	[5.34]	[5.37]	[6.5]
S&P "B" Dummy	0.982***	0.936***	0.984***	8.83***
	[5.61]	[5.42]	[5.38]	[6.75]
S&P "Lower than B" Dummy	1.076***	1.087***	1.163***	9.864***
	[4.9]	[4.8]	[5.3]	[6.98]
S&P "Not Rated" Dummy	0.771***	0.751***	0.867***	9.688***
	[4.23]	[4.13]	[4.56]	[6.65]
Intercept	6.376***			
	[11.33]			
Year Dummy		Yes	Yes	Yes
Industry Dummy			Yes	
Firm Dummy				Yes
N	196	196	196	196
Adjusted R^2	0.664	0.669	0.678	0.790

Table 9 - Panel B : Bank Loan Spreads Pre and Post Going-Private transaction with reclassified loans

The sample consists of 244 bank loans from Loan Pricing Corporation database issued to firms that underwent a going private transaction and includes loans issued pre and post stock delisting. Loans issued in the six months prior to delisting are classified as post-delisting loans. The dependent variable is the log of the bank loan all-in spread over LIBOR. The Pre Delisting Dummy is value 1 when the loan is prior to going private and 0 otherwise. Specifications (ii), (iii) and (iv) control for industry effects and (iv) controls for firm effects. T-statistics are provided in [ ]. Significance at the 1% level is indicated by ***, 5% level by ** and 10% level by *.

	Dependent Variable = Ln AIS Drawn			
	(i)	(ii)	(iii)	(iv)
Pre Delisting Dummy	-0.23***	-0.386***	-0.485***	-0.434***
	[-4.3]	[-4.35]	[-5.65]	[-3.64]
Leverage	0.206***	0.166**	0.123	0.172
	[2.49]	[1.97]	[1.37]	[1.36]
Log Assets	-0.008	0.005	-0.008	-0.182**
	[-0.26]	[0.15]	[-0.25]	[-2.42]
Interest Coverage	0***	0*	0	0.001
	[2.67]	[1.68]	[0.88]	[1.6]
Tangible	-0.094	-0.148	-0.014	-0.682**
	[-0.74]	[-1.12]	[-0.1]	[-1.98]
Current Ratio	0.006	0.01	0.019	-0.068*
	[0.29]	[0.49]	[0.75]	[-1.91]
Profitability	-0.992***	-1.048***	-1.324***	-1.792
	[-3.91]	[-4.19]	[-4.95]	[-4.77]
Log Loan Size	-0.167***	-0.17***	-0.161***	-0.058
	[-4.5]	[-4.54]	[-3.97]	[-1.61]
Log Contractual Maturity	0.017	0.035	0.008	-0.065
	[0.42]	[0.91]	[0.2]	[-1.38]
Secured Dummy	0.224***	0.253***	0.267***	0.205***
	[3.36]	[3.92]	[4.13]	[3.36]
Sole Lender Dummy	0.047	0.052	0.013	-0.046
	[0.56]	[0.62]	[0.15]	[-0.43]
S&P "BB" Dummy	1.03***	0.965***	1.021***	8.963
	[6.14]	[5.67]	[5.9]	[8.32]
S&P "B" Dummy	1.007***	0.981***	1.01***	8.919
	[6.52]	[6.31]	[6.25]	[9.46]
S&P "Lower than B" Dummy	1.147***	1.144***	1.213***	9.519
	[5.79]	[5.6]	[6.29]	[8.64]
S&P "Not Rated" Dummy	0.933***	0.909***	1.002***	9.43
	[5.48]	[5.35]	[5.7]	[8.25]
Intercept	6.215***			
	[14.58]			
Year Dummy		Yes	Yes	Yes
Industry Dummy			Yes	
Firm Dummy				Yes
N	244	244	244	244
Adjusted R^2	0.658	0.665	0.677	0.782