Proprietary Costs & Privately Held Firms' Financing Choice between Public Offerings and Private Placements

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Abstract

This paper examines whether proprietary costs influence privately held firms' financing choice between private placements and public offerings. The financing choice determines whether proprietary information revealed to investors is also available to competitors. Using hand-collected information about *privately* held firms, I find both cross-sectional and time-series evidence that firms with higher proprietary costs are more likely to choose private placements instead of public offerings. First, in the cross-section, at industry level, a more competitive product market has a higher proportion of private placements. Second, at firm level, more profitable firms, presumably having a stronger incentive to protect their abnormally high profitability from competition, are more likely to choose private placements. Third, in the time-series, an increase in product market competition is associated with an increase in the proportion of private placements. Finally, firms operating in multiple lines of business are more likely to choose private placements under the more stringent segment reporting regime SFAS 131.

Keywords: proprietary cost; private placements; public offerings; mandatory disclosure and reporting; segment reporting; corporate financing; privately held firms

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I. Introduction

While many studies examine how the tension between issuers and purchasers of the securities influences a firm's financing choice, there is virtually no empirical evidence on whether the tension between the issuer and its product market competitors influences financing choices. The latter tension could matter in privately held firms' financing choice between private placements and public offerings because it determines whether proprietary information revealed to investors is also available to competitors. If a privately held firm chooses to raise capital from a pubic offering, it is required by the SEC to publicly disclose a comprehensive set of information to the public. Thus, information revealed to investors, including potentially proprietary information, is also available to competitors in public offerings. In contrast, if a privately held firm chooses to raise capital from a private placement, it is not subject to the SEC mandatory disclosure and reporting requirements. Issuers in private placements usually sign confidentiality agreements with investors, which prevent investors in private placements from disseminating and trading on non-public material information. Thus, proprietary information revealed to investors is not easily available to competitors in private placements.

The SEC mandatory disclosure and reporting requirements associated with public offerings potentially impose proprietary costs. For example, one key strategic decision for an investment company is its trading and holding strategy. In a public offering, the investment company is required to disclose their top 10 holdings, which effectively

reveals the key trading strategy to competitors. Anecdotal evidence suggests that potential proprietary cost plays a significant role in the financing choice between public offerings and private placements. Renaissance Technologies, the $30bn hedge fund group run by billionaire mathematician James Simons, opted for private placements because "it would not be forced to publicly reveal significant information about its trading strategies and it would be more likely to attract long-term investors".

In this paper, I examine whether proprietary costs influence a privately held firm's financing choice between private placements and public offerings. A significant empirical difficulty, however, is the dearth of available data about privately held firms. In order to examine the research question, I hand collect information from a unique data source - Global Securities Information - which provides both financial and non-financial information for a sizable sample of privately held firms.

I find both cross-sectional and time-series evidence largely consistent with the characterizations that *privately* held firms with potentially higher proprietary costs are more likely to choose private placements instead of public offerings. In the cross-section, at industry level, more competitive product markets have a higher proportion of private placements. At firm level, more profitability firms, presumably having a stronger incentive to protect their abnormal profits and market shares, are more likely to choose private placements. The cross-sectional results are robust to controls of other economic factors. In the time-series, an increase in product market competition is associated with an increase in the proportion of private placements. Finally, firms operating in multiple lines of business are more likely to choose private placements under the more stringent segment reporting regime SFAS 131.

In order to parse out whether mandatory disclosure requirements are one of the sources that impose proprietary costs, I use a control sample of *publicly* held firms to perform robustness checks. As publicly held firms are already subject to mandatory disclosure requirements prior to the financing choice between private placements and public offerings, the associated proprietary costs are expected to have *no* influence on the choice. In the cross section, I find no association between product market competition and the proportion of private placements. In the time series, I find no increase in the frequency of private placements for multi-segment publicly held firms after SFAS 131. The *lack* of associations for publicly held firms validates the interpretation that mandatory disclosure requirements impose economically significant proprietary costs on privately held issuers at the time of public offerings and thereafter, and thus, privately held firms with higher potential proprietary costs are less likely to choose public offerings.

The findings in this paper contribute to both accounting and finance literature. First of all, this is the first empirical study, at least to my knowledge, that documents that the tension between privately held issuer and its product market competitors influences financing choice. Second, while a large number of empirical studies provide evidence that proprietary costs influences *voluntary* disclosure decisions by publicly traded firms (e.g., Harris, 1998; Berger and Hann, 2003; Leuz, 2004) , there is no empirical evidence on disclosure decisions by *privately* held firms. To the extent that a privately held firm's financing choice of public offerings implies a commitment to mandatory disclosure requirements, this is the first study suggesting that proprietary costs influence the commitment to *mandatory* disclosure requirements.

This paper also contributes to the growing finance literature on the interaction between product market attributes and capital market financing behavior. This literature has focused exclusively on the impact of leverage on product market behavior for *publicly* held firms (e.g., Chevalier, 1995, Phillips, 1995; Kovenock and Phillips, 1997; Campello, 2006). Hellman and Puri (2000) find that the stake taken by venture capital influences a firm's innovation strategy in the product market. However, the impact of product market attributes on the market to issue debt securities – private market versus public market - has received little attention. The finding that firms in more competitive product markets are more likely to choose private placements suggests an interesting interaction between product market competitiveness and the nature of the capital market to issue securities. Finally, this paper complements a number of prior studies that examine private placements by *publicly* traded firms (e.g., Hertzel and Smith, 1993; Wu, 2004; Borphy, Paige and Clemens, 2004; Gomez and Phillips, 2007). With the unique data source on private placements by *privately* held firms, this paper expands the existing literature on private placements.

The remainder of the paper is organized as follows. Section 2 describes the institutional details and develops the hypotheses. Section 3 discusses measures of proprietary costs and data source. Section 4 discusses research designs and section 5 presents empirical results. Section 6 concludes the paper.

II. Institutional background and hypothesis development

Theoretical studies by Bhattacharya and Chiesa (1995) and Yosha (1995) suggest privately held firms with higher proprietary costs are more likely to choose private

placements of debt rather than public offerings of debt. Institutional differences between private placements and public offerings also suggest that privately held firms with higher proprietary costs are more likely to choose private placements.

First, access to potentially proprietary information differs markedly at the time of the issuance. A public offering usually involves *general* investor solicitation, and thus, the IPO prospectus is easily available to the public. The issuer in public offerings cannot separate the information flow to investors from the information flow to potential and existing competitors. Thus, proprietary information that flows to investors is also available to both existing and potential competitors at the time of the public offering. In contrast, a private placement is a private sale of unregistered securities to a selected group of investors *without* general investor solicitation. Issuers in private placements usually require confidentiality agreements from existing and potential investors (mostly qualified institutional investors)[1]. Then issuers distribute private offering memoranda exclusively to the selected group of investors.[2] The confidentiality agreements prevent the selected group of investors from disseminating and trading on non-public material information contained in private offering memoranda.[3] Thus, for privately held firms, proprietary information revealed to investors is not easily available to either potential or existing competitors at the time of a private placement.

[1]A QIB is defined as an institution, such as an insurance company, a registered investment company, a pension or employee benefit plan, a bank or loan association and a registered broker-dealer, that in the aggregate owns and invests at least $100 million.

[2] The offering memorandum is a brochure describing the securities being offered, the use of proceeds, the issuer's business, operations, prospects, management, capital structure and financial performance (including financial statements), the market for the issuer's securities, the arrangements for the purchase and sale of the offered securities, relevant risk factors and other relevant matters.

[3] The offering memorandum in private placements is subject to the anti-fraud provision of the securities laws. Anecdotal evidence suggests that information provided to the selected group of investors in offering memoranda is at least as comprehensive as those in prospectuses, if not more.

Second, commitment to mandatory disclosure and reporting requirements differs significantly after the issue. For a privately held firm, the choice of a public offering implies a commitment to mandatory disclosure and reporting requirements. Under the SEC's disclosure and reporting rules, a publicly traded firm is required to disclose a comprehensive set of information on a periodic basis after the offering, some of which potentially damages a firm's competitive position. A prominent example of competitively sensitive information is the mandated disclosure of segment information about investment and profitability in separate lines of business (e.g., Hayes and Lundholm, 1996). Graham et al. (2005) find that 60% of CFOs regard proprietary costs as the most economically significant cost of disclosing information to the public. In contrast, the SEC recognizes that investors in private placements are able to "fend for themselves" and exempts privately held issuers from mandatory disclosure and reporting requirements after the private placement.[4]

Analytical models show that the relation between disclosure and proprietary costs are sensitive to the nature of competition and to the type of proprietary information. For example, the relation between voluntary disclosure and competition depends on the nature of competition. Darrough and Stoughton (1990) suggest that greater competition encourages more disclosure in an entry game, while Clinch and Verrecchia (1997) suggest that greater competition inhibits more disclosure in a post-entry game[5]. Furthermore, discretionary disclosure decisions depend on whether firms compete on quantity setting or price setting and whether the disclosure decision is ex-ante or ex-post

[4] While the privately held issuer is not subject to the SEC reporting requirements, it must make information available, upon request, exclusively to the selected group of investors after the private placement.

[5] An entry game is a game in which a firm contemplating producing a good already produced by some other firms. A post-entry game is a game in which both firms are currently producing.

(e.g., Darrough, 1993; Verrecchia, 2001). However, a commitment to mandatory disclosure requirement implies that, regardless of the nature of the competition, the firm is required to disclose *predetermined* information items, including competitively sensitive information such as segment information and major customer relationship. As the commitment to mandatory disclosure and reporting imposes a substantial proprietary cost *ex-ante*, privately held firms with potentially higher proprietary costs are likely to choose private placements to avoid the commitment.

Disclosure models generally assume that both the probability of adverse action by competitors and the potential cost of such action are known to the incumbent. In reality, these parameters are difficult, if not impossible, for a researcher to estimate directly. Hence, proxies for competitive costs are necessary. More specifically, I explore both the cross-sectional or time-series variation in potential proprietary costs.

The cross-sectional variation in proprietary costs manifests itself at both the industry level and the firm level. First, at industry level, disclosure of proprietary information is more likely to trigger adverse reactions in more competitive product markets. And if triggered, the potential cost of such adverse reactions is likely to be greater in more competitive product markets. For example, assume firm A has just developed a new drug and it has been successful in clinical trials. If the firm chooses a public offering, such news is required to be disclosed publicly in 8-K on a timely basis. In response, its competitors could launch marketing campaigns or offer substantial price discounts to weaken the potential market impact of firm A's new drug immediately. The less concentrated the drug market is, the larger number of competitors is to take adverse reactions. The more substitutable the new drug is to existing drugs in the product market,

the higher the competitive damages from competitors is. Thus, firms in more competitive product markets are more likely to choose private placements.

Second, within the same industry, disclosure of proprietary information is more likely to trigger adverse reactions for firms with high profitability. This is because competitors are more likely to replicate successful firms' operations or strategies rather than unsuccessful ones. Those firms are more concerned about protecting their abnormally high profitability from competition, and thus, are more likely to choose private placements. Prior studies also suggest that mandatory segment disclosure requirements impose higher proprietary costs on more profitable firms. For example, Harris (1998) finds that profitable operations in less competitive industries are less likely to be reported as segments. Berger and Haan (2003) find that firms with high profitability are less likely to voluntarily report multiple lines of business prior to SFAS 131. Leuz (2004) find that German firms are less likely to voluntarily provide segment information when firm profitability is high. This leads to the first hypothesis on the association between cross-sectional variation in proprietary costs and the propensity of private placements:

H1a: At the industry level, more competitive product markets have a higher proportion of private placements.
H1b: At the firm level, more profitable firms are more likely to choose private placements.

In the time-series, in response to the changes in product market structures or mandatory reporting requirements, the associated proprietary costs vary as well. First, product market structures evolve over time, which could bring out changes in market competitiveness. For example, if certain technological or regulatory entry barrier is

lifted, more firms enter the product market, leading to a more competitive environment. With increased competition, firms are more likely to choose private placements to minimize potential proprietary costs. Thus, I expect that an increase in product market competition is associated with an increase in the proportion of firms that choose private placements.

Second, mandatory disclosure and reporting standards change over time. Survey evidence by Gray and Roberts (1998) indicates that segment information is viewed as among the most competitively sensitive information by managers. Under the old segment reporting standard (SFAS 14), publicly traded firms were required to classify line-of-business segment information using the industry approach. The definition of industry allowed many firms to report less segment information than what was reported internally. In 1997, the FASB issued SFAS 131, which requires public firms to use management approach. Under the management approach, segment information is required to be presented based on how management internally evaluates the operating performance of its business units. SFAS 131 increases the number of reported segments and provides more disaggregated information (e.g., Berger and Hann, 2003). Furthermore, SFAS 131 allows users to assess the performance of individual operating segments in the same way that management does. Thus, the potential proprietary cost associated with segment reporting is expected to increase after SFAS 131. Givoly, Hayn and D'Souza (1999) find that mandatory segment disclosure requirements impose greater competitive harm on firms operating in multiple lines of business than firms operating in a single line of business. Thus, I expect that privately held firms operating in multiple lines of business are more likely to choose private placements under the more stringent

segment reporting regime SFAS 131. This leads to the second hypothesis on the association between time-series variation in proprietary costs and the likelihood of private placements:

H2a: An increase in product market competition is associated with an increase in the proportion of private placements.
H2b: Firms operating in multiple lines of business are more likely to choose private placements under SFAS 131.

The two hypotheses address the choice between private placements and public offerings from the perspective of proprietary costs only. In general, the financing decision ultimately depends on the trade off between benefits and costs. A major benefit of private placements is the ability to avoid mandatory disclosure and reporting requirements, thus separating the information flow to investors from the information flow to competitors. Private placements also facilitate a quicker access to capital market than public offerings.[6] In terms of cost, cost of capital is higher in private placements. Analytical models suggest that the difference in costs of capital is related to two economic factors. First, ownership stake in private placements is illiquid, leading to a higher cost of capital. Second, managers in private placements are willing to pay a higher cost of capital in order to enjoy a greater managerial autonomy. Empirically, Fenn (2000) and Chaplinsky and Ramchand (2004) find that the average yield spread for the investment (speculative) grade debt in Rule 144A private placements is 49 (71) basis

[6]Unlike prospectuses in public offerings, private placements are not subject to SEC guideline and reviews. As a SEC review typically takes 45 to 90 days to complete, issuers in private placements enjoy a quicker access to the capital market. According to David Ballard, managing director of private equity at Merrill Lynch in New York, "Some will want to access the markets quickly; some will want to avoid disclosure about certain assets of their business. Those are the two big drivers for private placements: speed to market and ability to limit disclosure."

points higher than public debt offerings.[7] Livingston and Zhou (2002) find that Rule 144A debt private placements have higher yield spreads even after controlling for default risk. Finally, the "upon request" disclosure model in private placements and the "periodic" disclosure model in public offerings result in differential implementation costs of disclosure. In the research design, I controls for those benefits and costs of private placements relative to public offerings.

III. Sample, data and variable measures

I use SDC Platinum's private placement and Rule 144A new issue database to identify private placements of debt and its public new issue database to identify public debt offerings. Securities issued are limited to debt securities because one important motivation for issuing equity is for founders and major shareholders to cash out their holdings at a future date (e.g., Ritter and Welch, 2002).[8] Given that this paper examines the financing choice from the perspective of the company rather than the entrepreneur, the incentive to cash out through equity financing confounds the investigation. The issuers in the sample are limited to privately held firms. The initial sample from SDC Platinum consists of 8,780 private debt placements and 2,981 public debt offerings by privately held issuers from 1993 to 2007.

[7]On April 1990, the SEC adopted Rule 144A which provides safe harbor from the registration requirements for certain securities issued to "qualified institutional buyers" (QIBs) only. Private placements conducted according to Rule 144A are called Rule 144A private placements. One of the principal effects of Rule 144A has been its influence on the structure of private placements. Traditional private placements are usually done on an agency basis, typically with only one placement agent. With the adoption of Rule 144A, private placements may be structured in a way where a group of underwriters will commit to purchase all of the offered securities and offer them for resale to their customers of qualified institutional buyers. However, the confidentiality agreements are still required at the time of the Rule 144A private placements. Rule 144A private placements are also exempt from mandatory disclosure and reporting requirements.

[8] Exclusion of equity financing not only eliminates the need to investigate the cash out incentive but also eliminates the need to investigate the pecking order theory in financing (e.g., Myers and Majluf, 1984).

The most widely used measure of product market competition is industry concentration ratio. I hand collect information from the Economic Consensus to measure industry concentration (CONCENTRATION). Ali, Klasa and Yeung (2008) find that COMPUSTAT based industry concentration measures are poor proxies of actual industry concentration because of the exclusion of privately held firms, which often account for an economically significant proportion of industry sales. Ali et al. (2008) also find that more concentrated industries, using the Consensus based measures, are populated by fewer and larger firms that enjoy higher price-cost margins due to their greater market power, which is consistent with theoretical predictions on more oligopolistic industries. Some recent studies suggest that concentration ratio alone is a poor proxy of product market competition (e.g., Demsetz, 1973; Raith, 2003; Karuna, 2007). For example, industrial organization theory suggests that product price is set far above the marginal cost in less competitive product market. Thus, I also include industry price to cost margin (PRICECOSTMARGIN) to capture another dimension of industry competition.

I use the 6-digit North American Industry Classification System (NAICS) code to classify a product market because Bhojraj et al. (2003) suggests that the NAICS yield grouping of firms that are more economically related and homogenous than the SIC system.[9] The Economic Consensus provides total sales, total capital expenditure, total costs of raw materials, total costs of shipments and total payroll expenses at the 6-digit NAICS level. The Economic Consensus also provides the aggregate sales generated by

[9] NAICS uses a six-digit hierarchical coding scheme to classify all product markets into twenty product sectors, five of which are goods-producing sectors and fifteen of which are services-providing sectors (see Appendix I for the list of sectors). Despite numerous revisions to the SIC system, it has received increasing criticism about its ability to handle rapid changes in the economy. Recent developments in information services, new forms of health care provision, expansion of services, and high tech manufacturing are examples of structural changes that cannot be studied under the SIC system. The NAICS was developed recently in response to structural changes in the economy. Nine new service sectors and two hundred and fifty new service industries are recognized under the NAICS.

the largest firms at the 6-digit NAICS level. The industry concentration ratio (CONCENTRATION) is measured as the proportion of revenues earned by the four largest firms relative to the total revenues at the aggregate industry level. The industry price to cost margin (PRICECOSTMARGIN) is measured as total revenue earned at the aggregate industry level divided by the sum of total costs of raw materials, total costs of shipment and total payroll expenses at the aggregate industry level.

Based on the issuer's primary 6-digit NAICS code provided by SDC, I merge the product market information from the Economic Consensus with the initial sample from SDC. The Economic Consensus is conducted every five years and the most recently ones were conducted in 1997 and 2002. It is worth noting that the Economic Consensus data conducted in a given year is not only used as competition proxies for that year, but also for a few years surrounding it. More specifically, I use the 1997 Economic Consensus for the 1993 to 1999 sub-sample period, and use the 2002 Economic Consensus for the 2000 to 2007 sub-sample period. Then I delete all firm-year observations where explanatory variables, such as the industry concentration ratio or the cost of debt, are not available. This procedure yields 1,853 private debt placements and 974 public debt offerings in the final SDC sample. These debt offerings are distributed across 150 industry-year combinations.

Although SDC Platinum yields a large sample of private placements by privately held firms, it provides no financial information on privately held issuers. The lack of financial information makes it impossible to measure the firm-level proprietary cost. To overcome the empirical difficulty, I use a unique data source, Global Securities Information (GSI), which provides original offering memoranda for a sample of 104

privately held firms, of which 4 firms issue equity, and thus, are excluded from the hand-collected sample.[10] I hand collect financial information such as net income and total assets from the financial statements presented in those offering memoranda. All financial statements in those offering memoranda are prepared in conformity with U.S. GAAP. Firm-specific profitability (ROA) is measured as net income before interest expenses deflated by total assets in the fiscal year prior to the issue. I also hand collect information about the terms of and proceeds from private placements from the offering memoranda. I am able to collect financial information of the issuers for 82 debt private placements, which are distributed across 43 6-digit NAICS product markets.

Although this hand-collected GSI sample is far from comprehensive, the availability of financial data for privately held firms provides a unique opportunity to examine the association between firm-level profitability and privately held firms' financing decision. To control for product market competition, I identify 432 public debt offerings in the same 43 6-digit NAICS industries and collect financial information for 258 issuers in public debt offerings. The initial hand-collected sample consists of 82 private placements and 258 public offerings of debt. I delete all observations where the explanatory variables are either at the top 1% or the bottom 1% in order to mitigate the influence of outliers on the inference. The final sample for firm-level analysis consists of

[10] All private placements documents obtained from Global Securities Information are Rule 144A private placements. Depending on the structure of private placements, private placements can be broadly classified into traditional private placements and Rule 144A private placements. Traditional private placements are typically placed with only one placement agent. On April 1990, the SEC adopted Rule 144A which allows a group of underwriters commit to purchase all of the offered securities and offer them for resale to qualified institutional buyers (QIBs). Thus liquidity is enhanced in a typical Rule 144A private placement relative to traditional private placements through the ability to resell to QIBs. A QIB is defined as an institution, such as an insurance company, a registered investment company, a pension or employee benefit plan, a bank or loan association and a registered broker-dealer, that in the aggregate owns and invests at least $100 million.

65 private placements and 251 public offerings of debt. The sampling procedures for the hand-collected GSI sample are summarized in Table 6.

IV. Research Design

4.1. Proprietary costs and the financing choice at the industry level

The first sub-section describes the research design using the large sample from the SDC Platinum to examine the association between proprietary costs and the financing choice at the industry level. To capture the cross-sectional variation of proprietary costs, I include both industry concentration ratio (CONCENTRATION) and the industry price to cost margin (PRICECOSTMARGIN) as explanatory variables. To the extent that the SFAS 131 imposes greater proprietary costs on firms with multiple lines of business only, I use lines of business information provided by SDC to classify firms into two groups: firms operating in a single line of business and firms operating in multiple lines of business. The variable, MULTIPLE, is measured as the proportion of firms with multiple lines of business at the industry level.

I also control for other benefits and costs of private placement relative to public offerings within the data limitations of SDC. First, if private placements and public offerings have different cost of debt and maturity structure of debt, it's necessary to control for the terms and structures of debt offerings. Cost of debt (YIELD) is measured as the average market yield of all debt securities issued by firms in the same industry during a particular year. Maturity of debt (MATURITY) is measured as the average year of maturity of all debt securities issued by firms in the same industry during a particular year. Second, to the extent that SOX significantly increases implementation costs of

mandatory disclosure requirements in the Unites States (e.g., Engel, Hayes and Wang, 2007), I include the indicator variable POST_SOX to capture direct implementation cost of mandatory reporting requirements. POST_SOX is coded as 1, if the issue occurs after July 2002; 0, otherwise. Finally, absent from the reporting requirements under SEC, the amount of publicly available information differs between firms in regulated and in non-regulated industries. For example, all firms in highly regulated industries, both publicly and privately held firms, are required to report certain amount of information to their respective regulators and the public in general, such as profitability and rate of return on assets.[11] Thus, the marginal proprietary cost associated with reporting requirements under SEC is likely to be lower for those firms. I include the indicator variable REGULATED for firms in highly regulated product markets. Following Demsetz and Lehn (1985), REGULATED is coded as 1 if a company is a utility firm or a company is a bank, saving and loan institutions, insurance company, or securities firm (the first 2-digit NAICS code is 52 or 22), and, 0 otherwise.

The proportion of private placements at the industry-year level is measured as the number of private placements as a percentage of all financing activities (PROPORTION). As proportional-type variables typically do not have uniform variance patterns, following Draper and Smith (1998), I perform log odds transformation of PROPORTION. The dependent variable in the regression is the log odds ratio (LOG_ODDS), which is measured as Ln [PROPORTION / (1-PROPORTION)]. Summarizing, I use the

[11] Another reason to include the indicator variable for regulated industries is because many entrepreneurs prefer private placements because private placements provide more control benefits and managerial autonomy (e.g., Boot, Gopalan and Thakor, 2006). The potential control benefits are expected to be smaller in regulated industries because systematic regulation restricts the options available to entrepreneurs. However, this effect is less relevant in this context because the securities are limited to debt only.

following model to test whether proprietary costs play a significant role in a privately held firm's decision to choose private placements:

$$LOG\_ODDS_{it} = \alpha + \boldsymbol{\gamma_1 CONCENTRATION_{it}} + \boldsymbol{\gamma_2 PRICECOSTMARGIN_{it}} + \boldsymbol{\gamma_3 MULTIPLE_{it} * SFAS131_t} + \beta_1 POST\_SFAS131_{it} + \beta_2 MULTIPLE_{it} + \beta_3 YIELD_{it} + \beta_4 MATURITY_{it} + \beta_5 REGULATED_{it} + \beta_6 POST\_SOX_{it} + \varepsilon_{it} \quad \text{where i is industry and t is year} \qquad \textbf{(Model 1)}$$

The coefficient on CONCENTRATION is expected to be negative and statistically significant. The sign on the coefficient on industry price to cost margin is uncertain ex-ante because a low price to cost margin could either imply a more competitive industries or an industry with no good investment opportunities. If it is the latter, firms in industries with low price to cost margin have less incentives to choose private placements to facilitate a quicker access to capital markets (e.g., Fenn, 2000). Finally, the coefficient on the interaction term between MULTIPLE and POST_SFAS131 is expected to be positive and statistically significant.

I employ a difference-in-difference design to examine the association between the change in product market competition and the change in the proportion of private placements to mitigate the concern that an industry's competition structure is endogenous to other omitted variables. More specifically, I divide the sample into two sub-sample periods: the first sub-sample period centers around 1997 and spans 1993 to 1999 and the second sub-sample period centers around 2002 and spans 2000 to 2007. To capture the association between the temporal change in product market competition and the temporal change in incidences of private placements, I divide all product markets into two groups: the group of product markets that become more competitive over time and the group of product markets that become less competitive over time. For each group, I calculate CHG_PRIVATE%, which is the change in the proportion of firms in private placement

from the first to the second sub-sample period. I use Z test to examine whether CHG_PRIVATE% is larger for the group of product markets that have become more competitive.

4.2. Proprietary costs and the financing choice at the firm level

This section describes the research design using the hand-collected sample to address the association between proprietary costs and the financing decision at the firm level. In addition to firm-level profitability, I control for other economic factors in the research design.

First, the information asymmetry between the issuer and the purchaser of the securities plays an important role in the financing choice between private placements and public offerings (e.g., Gomez and Phillips, 2007). For example, both Carey et al. (1993) and McCkie-Mason (1990) find firms with higher research and development expenditures are more likely to choose private placements. Following prior studies, I include the research and development expenditure (RD), which is measured as the research and development expenditure scaled by total sales prior to the issue. Second, conventional wisdom suggests that public offerings are too expensive or time-consuming if a firm raises a small amount of external capital. To address this concern, I include the amount of proceeds (PROCEEDS), which is measured as the amount of proceeds raised from the issuance deflated by total assets prior to the issue. Third, private placements also facilitate quick access to capital market. Thus, firms with more urgent needs for external cash flows are more inclined to engage in private placements to speed up the financing. Following Harford (1999), I use excess cash as a measure of the urgency for external

financing (EXCESSCASH). EXCESSCASH is measured the excess of liquid assets (cash plus marketable securities) over capital expenditure, interest expense and tax expenses deflated by total assets prior to the issue.

To the extent that there is a fixed component of implementation cost associated with mandatory disclosure requirements, I include SIZE, measured as the natural log of total assets prior to the issue, to control for direct implementation cost. I also include the indicator variable POST_SOX to control for direct implementation cost. Finally, from investors' perspective, investors in public offerings prefer debt issues with investment grade ratings than debt issues with junk ratings or issues without ratings. Thus, I include the variable for debt issues with investment grades (INVESTMENTGRADE). INVESTMENTGRADE is coded as 1 if the issue carries an investment grade from Moody's, and 0, otherwise.

In summary, I use the following model to examine whether proprietary cost is associated with the decision of private placements at the firm level:

$$PROB\ (PRIVATE\ PLACEMENT)_{it} = F\ (\alpha + \boldsymbol{\beta_1 ROA_{it}} + \beta_2 POST\_SFAS131_t + \beta_3 RD_{it} + \beta_4 EXCESSCASH_{it} + \beta_5 PROCEEDS_{it} + \beta_6 SIZE_{it} + \beta_7 POST\_SOX_{it} + \beta_8 INVESTMENTGRADE_{it})$$

where ROA is net income before interest expense deflated by total assets prior to the issue

(Model 2)

The variable of interest is the coefficient on ROA and the coefficient is expected to be positive and statistically significant.

V. Empirical results

5.1. Descriptive statistics

Table 1 presents the distribution of debt financing activities and the descriptive statistics of industry competition measures across major business sectors. Firms in

financing and insurance sector with 1,388 debt offerings and firms in manufacturing sector with 767 debt offerings dominate the SDC sample. Transportation and warehousing sectors have the highest concentration ratios with an average concentration ratio of 0.456 and 0.671 respectively. Construction and education service sectors have the lowest concentration ratios with an average concentration ratio of 0.064 and 0.082 respectively.

Table 2 presents the descriptive statistics of all variables at the industry level. The mean concentration ratio is 0.286 and the median concentration ratio is 0.221.[12] The average proportion of private placements across all industries is 72.1%. For more than half of the industries, issues are limited to private placements.

5.2. Proprietary costs and the financing choice at the industry level

Table 3 presents the correlations between proprietary costs and the proportion of private placements at the industry level. The Pearson and the Spearman correlations between the log odds ratio and industry concentration ratio is -0.336 and -0.225 respectively, and are statistically significant. The Pearson and the Spearman correlations between the log odds ratio and industry price to cost margin is -0.202 and -0.300 respectively, and are statistically significant. Furthermore, firms operating in multiple lines of business are more likely to engage in private placements after SFAS131, as

[12] Given that COMPUSTAT is another widely used data source to measure competition, I compare the two sets of numbers in order to provide some useful guidelines for future research. The median concentration ratio from COMPUSTAT is 0.61, which is almost three times of the number from the Economic Consensus. The difference suggests that using COMPUSTAT substantially overstates the concentration ratio, which is consistent with the findings from Ali et al. (2008). The median industry price to cost margin from COMPUSTAT is 3.23, while the median from the Economic Consensus is 5.302. The difference is likely due to the exclusion of advertising expenditure, research and development expenditure, interest expense and tax expense in the Economic Consensus.

evident in the negative correlation between the log odds ratio and the interaction term between MULTIPLE and POST_SFAS131 (p-value < 0.05).

Table 4 reports the multivariate results. The first column presents the baseline regression results where no proxies for cross-sectional and time-series variations on proprietary costs are included. The adjusted R-squared is 35.6% for the baseline model. The next three columns present the regression results where each measure of proprietary costs is included separately. Per the second column, the coefficient on concentration ratio is -4.632 and statistically significant (p-value = 0.001). The adjusted R-squares increases to 39.8%, which is about 10% increase from the baseline regression. The second column suggests that more competitive industries (industries with a lower concentration ratio) have a higher proportion of private placements. Per the third column, the coefficient on industry profitability is -0.027 but statistically insignificant (p-value = 0.654). The adjusted R-squares increase to 35.2%, which is virtually identical to the baseline regression. Per the fourth column, the coefficient on the interaction term between MULTIPLE and POST_SFAS131 is 2.007 and statistically significant. The adjusted R-squares of this specification increases to 39.6%, which is about 10% increase from the baseline regression. The fourth column suggests that industries with a higher proportion of multi-segment firms have a higher proportion of private placement. However, the main effect on POST_SFAS131 is -3.179 and statistically significant (p-value = 0.001) and the main effect on MULTIPLE is -0.476 and statistically insignificant (p-value = 0.683). The evidence combined suggests that SFAS131 increases the potential proprietary costs associated with mandatory financial reporting for *multi*-segment firms.

In last column, I include all three proxies of proprietary costs jointly and examine the robustness of the results. When other proxies are included, the coefficient on CONCENTRATION continues to be negative and statistically significant (p-value = 0.001). Remarkably, the adjusted R-squared of this specification increases to 43.6%, which is a 25% from the baseline regression. Overall, the multivariate results are largely consistent with the interpretation that firms operating in more competitive industries are more likely to choose private placements to avoid the obligation of mandatory disclosure. The result is also consistent with the second hypothesis that firms operating in multiple lines of business are more likely to choose private placements after SFAS131.

Table 5 presents the results on whether an increase in product market competition is associated with an increase in the proportion of private placements. Per Panel A of Table 5, for the group of product markets that have become less competitive, where the change in concentration ratio is above the median, the proportion of private placements from 1993 to 1999 is 92.1% and the proportion from 2000 to 2007 is 82.0%, a decline of 10.1% across the two sub-sample periods. The corresponding change for the group of product markets where the change in concentration ratio is below the median is a decline of 3.9%. A decrease in product market competition is associated with a more pronounced decline in the proportion of private placements, and the difference of 7.2% is both economically and statistically significant (p-value = 0.001). Per Panel B of Table 5, when the change in competition is measured as the change in industry price to cost margin, a decrease in product market competition is associated with a decline of 10.4% in the proportion of private placements, whereas an increase in product market competition is associated with an increase of 2.6% in the proportion of private placements. The cross-

period difference of 14.0% is both economically and statistically significant (p-value = 0.001). The results confirm the second hypothesis that an increase in product market competition is associated with an increase in the proportion of private placements.

5.3. Results from the hand-collected sample with available financial information

The hand-collected sample with issuer-level financial information has 316 debt offerings, which is significantly smaller than the SDC sample. Panel A of Table 7 presents the descriptive statistics at the firm level. The average market yield on public offerings of debt is 630 basis points and the average market yield on private placements of debt is 980 basis points, consistent with prior findings that private placements are associated with a higher cost of capital. Panel B of Table 7 presents the Pearson and Spearman correlations among all variables in model (2).

Table 8 presents the regression results from model (2). After controlling for other firm characteristics, more profitable firms are more likely to engage in private placements. This is consistent with the characterization that more profitable firms presumably have a stronger incentive to protect their abnormal profits, and thus, are more likely to choose private placements to avoid dissemination of proprietary information.

As to other economic factors, firms are also more likely to choose private placements under the more stringent segment reporting regime SFAS 131. [13] Firms with more excess cash flows are less likely to choose private placements, which is consistent with the characterization that firms that need quick access to capital are more likely to choose private placements to speed up the capital-raising process (e.g., Fenn, 2000).

[13] The indicator variable MULTIPLE for multi-segment firms is not included in model (2) because the information provided in offering memoranda is not adequate to classify the issuer's lines of business. Thus, the coefficient on POST_SFAS131 needs to be interpreted with caution.

Firms with higher research and development expenses are more likely to choose private placements. This result is consistent with the interpretation that firms with more research and development projects have greater information asymmetry between the issuer and the purchaser, and thus, are more likely to choose private placements. Finally, larger firms are less likely to choose private placements, even after controlling for bond ratings. The negative association between size and the likelihood of private placements is consistent with the findings in Pagano, Panetta, and Zingales (1998), which finds that Italian firms in public offerings of equity are larger than firms that do not go public.

To examine whether the firm-specific results are robust to the inclusion of issue-specific cost of debt, I include all observations where market yields on debt issues are available and re-run model (2) with the market yield of debt as an additional explanatory variable. After taking into account the cost of debt explicitly, firms with higher return on assets are still more likely to choose private placements.

5.4. Robustness checks

This paper documents a negative association between product market competition and the proportion or propensity of private placements and an increase in the proportion or propensity of private placements for multi-segment firms after SFAS131. I interpret the results collectively as evidence that mandatory disclosure requirements under SEC impose economically significant proprietary costs on issuers at the time of public offerings and thereafter, and thus, firms with higher potential proprietary costs are more likely to choose private placements. I perform several robustness checks to parse

out the source of proprietary costs and shed some light on the relevance of some alternative explanations.

First, in order to examine whether mandatory disclosure requirements under SEC is the source of proprietary costs, I use a control sample of *publicly* held firms that choose either private placements or public offerings. As publicly held firms are subject to mandatory disclosure requirements, the associated proprietary costs are expected to have *no* influence on their choice between private placements and public offerings. I partition the sample of publicly held firms into two sub-samples based on their debt ratings because debt rating influences a publicly held issuer's access to private placements or public offerings (e.g., Fenn, 2000). One sub-sample consists of all offerings with investment grades, and the other sub-sample consists of all offerings with junk ratings or no ratings.

Table 9 presents the empirical results for the two sub-samples for publicly held issuers. Per the first two columns of Table 9, the sample of investment-grade offerings by publicly held firms has 401 industry-year observations. The coefficient on concentration ratio is -0.365 but is statistically insignificant (p-value = 0.225) and the coefficient on the interaction between MULTIPLE and POST_SFAS131 is 0.247 but is also statistically insignificant (p-value = 0.499). Per the last two columns of Table 9, the sample of offerings with junk ratings or no ratings by publicly held firms has 258 industry-year observations. The coefficient on concentration ratio is -2.041 but is statistically insignificant (p-value = 0.179). The coefficient on the interaction between MULTIPLE and POST_SFAS131 is -2.981 but is also statistically insignificant (p-value

= 0.153). Furthermore, the increase in explanatory power from the baseline model to the regression model with proxies for proprietary costs included is negligible.

In summary, for the sample of *publicly* held firms, in the cross section, I find no association between product market competition and the proportion of private placements. In the time series, I find no increase in the frequency of private placements for multi-segment publicly held firms after SFAS 131. The *lack* of association for publicly held firms validates the interpretation of the main results that mandatory disclosure requirements impose economically significant proprietary costs on privately held issuers at the time of public offerings and thereafter. Consequently, privately held firms with higher potential proprietary costs are less likely to choose public offerings.

The lack of association between product market competition and the proportion of private placements also helps rule out the alternative explanation that firms in more competitive markets have a greater difficulty in planning their future external capital needs, and thus, are more likely to choose private placements to speed up their access to the capital market. If this alternative explanation is true, it should hold for both publicly held issuers and privately held issuers. However, the insignificant association as tabulated in Table 9 suggests that this alternative explanation is unlikely to hold.

Second, in addition to mandatory reporting requirements, debt rating agencies are another source of public information about the privately held issuer, especially for those issues where debt ratings are available. Thus, I partition the sample of privately held firms into two sub-samples: one sample consists of issuances with debt ratings and the other sample consists of issuances without debt ratings. For the sub-sample of issuances with debt ratings, the coefficient on industry concentration ratio is -10.543 and

statistically significant (p-value = 0.059). For the sub-sample of issuances without debt ratings, the coefficients on industry concentration ratio is -2.969 and statistically significant (p-value = 0.032). The multivariate results as presented in Table 4 are robust to control of other information source.

Third, about 10% of private placements in the SDC sample carry registration rights where the issuers are required to register with SEC between 12 and 18 months after the private placement of debt. After registering with SEC, the privately held firm is required to comply with the SEC's periodic disclosure and reporting requirements, such as 10-Ks, 10-Qs and 8-Ks. Thus, if periodic mandatory reporting requirements impose proprietary costs, private placements with registration rights should be classified as offerings with potential proprietary costs. Under the new classification scheme, the empirical results are qualitatively similar, if not stronger. The coefficient on industry concentration ratio is -4.843 and statistically significant (p-value = 0.001), and, the coefficient on MULTIPLE *POST_SFAS131 is 2.393 and statistically significant (p-value = 0.096). The overall adjusted R-squared is 45.9%, which is a 33% increase from the 33.8% from the baseline regression.

Finally, the marginal impact of mandatory reporting requirements on the financing choice is expected to be smaller for firms in manufacturing sectors than firms in service sectors. This is because some manufacturing firms purchase and dissect their competitors' new products to uncover proprietary information about product design or materials. Thus, I expect that the negative association between the product market competition and the proportion of private placements is more pronounced in service sectors than manufacturing sectors. I rerun the results for service sectors and

manufacturing sectors respectively and find results consistent with the expectation. For service sectors, the coefficient on concentration ratio is -7.048 and is statistically significant (p-value=0.001). For manufacturing sectors, the coefficient on concentration ratio is 0.467 and statistically insignificant (p-value = 0.863).

In summary, the robustness checks suggest that mandatory disclosure and reporting requirements imposes potential proprietary costs and that the empirical results are robust to other alternative explanations.

V. Conclusions

This paper examines whether product market competition influences privately held firms' choices between private and public financing. The evidence is consistent with the interpretation that firms with potentially high potential proprietary costs are more likely to choose private placements instead of public offerings.

A natural extension of the paper is to perform a content analysis on disclosed content in private placement memoranda because it provides interesting insights in the broad context of benefits and costs of disclosure. While a more forthcoming disclosure policy towards investors has the benefit of increased market liquidity and/or a lower cost of capital, the policy *simultaneously* imposes greater competitive harm on the firm. In contrast, a privately held firm is able to enjoy the benefit of a more transparent disclosure policy towards investors *without* releasing the information to competitors. Thus, it is likely that firms in private placements disclose more and timely value-relevant

information to investors than firms in public offerings.[14] Furthermore, the financing choice examined in this paper is limited to debt securities because of confounding cash-out and control effects. A more careful and detailed examination of private placements versus public offerings of equity after taking those confounding effects into account will yield additional insights into the association between product market competition and capital market financing choices.

[14] A cursive reading of 10 private offering memoranda suggests that all financial statements comply with generally accepted accounting standards and are audited.

References

Aghion, P., Bloom, N., Blundell, R., Griffith, R., Howitt, P., 2005. Competition and innovation: An inverted-U relationship. The Quarterly Journal of Economics 120(2): 701-728.

Ali, Ashiq, Klasa, Sandy and Yeung, Eric, 2008, The Limitations of Industry Concentration Measures Constructed with Compustat Data: Implications for Finance Research. Working paper.

Bain, J., 1956. Barriers to New Competition. Harvard University Press, Cambridge, MA.

Bhattacharya, S. and Chiesa, G., 1995. Proprietary Information, Financial Intermediation, and Research Incentives. Journal of Financial Intermediation, 4: 328-357.

Berger, P. and Hann, R. (2003), The Impact of SFAS 131 on Information and Monitoring, Journal of Accounting Research 41: 163-223.

Brophy, D., P. Ouimet, and C. Sialm, 2006. Hedge Fund Investors as Last Resort? The Review of Financial Review, Advance Access.

Boot, A., Radhakrishnan,G., A. Thakor, 2006. The Entrepreneur's Choice between Private and Public Ownership. The Journal of Finance 61 (2), 803–836

Bhojraj, S., C. Lee, and D. Oler, 2003. What's My Line? A Comparison of Industry Classification Schemes for Capital Market Research. Journal of Accounting Research 41(5): 745-774.

Campello, M., 2006, "Debt Financing: Does It Hurt or Boost Firm Performance in Product Markets?" *Journal of Financial Economics*, 82, 135-172.

Carey, M., Prowse, S., Rea J., and Udell, G., 1993. The Economics of Private Placements: a new look. Financial Markets Institutional Instruments 2(3).

Chaplinsky, S., and L. Ramchand, 2004, The Impact of SEC Rule 144A on Corporate Debt Issuance by International Firms, The Journal of Business 77: 1073-1098.

Chemmanur, T., and P. Fulghieri, 1999, A Theory of the Going-public Decision. Review of Financial Studies 12: 249-279.

Chevalier, J., 1995. Capital Structure and Product-Market Competition: Empirical Evidence from the Supermarket Industry. The American Economic Review 85 (3): 415-435.

Clinch, G., and R.E. Verrechia, 1997. Competitive disadvantage and discretionary disclosure in industries. Australian Journal of Management 22, 125-137.

Darrough, M. N. and N. M. Stoughton, 1990. "Financial disclosure policy in an entry game," Journal of Accounting and Economics 12, 219-243.

_____, 1993, Disclosure Policy and Competition: Cournot vs. Bertrand. Accoutning Review 68, 534-561.

DeFond, M., Park, C., 1999. The effect of competition on CEO turnover. Journal of Accounting and Economics 27, 35–56.

Demsetz, H., 1973. Industry structure, market rivalry, and public policy. Journal of Law and Economics 16, 1–10.

_____and K. Lehn, 1985. The Structure of Corporate Ownership: Causes and Consequences. Journal of Political Economy 93 (6): 1155-1177.
.

Draper, N. and H. Smith. Applied Regression Analysis (the 3rd ed.). New York: Wiley, 1998.

Engel, E., Hayes, R., Wang, X., 2007, The Sarbanes–Oxley Act and firms' going-private decisions, Journal of Accounting and Economics 44 (1-2):116-145.

Fenn, George W., 2000, Speed of issuance and the adequacy of disclosure in the 144A high-yield debt market, Journal of Financial Economics 56, 383-405.

Frankel, R., M. McNichols, and G. Wilson, 1995. Discretionary Disclosure and External Financing, Accounting Review 70, 135-150.

Givoly, D., Hayn, C, and J. D'Souza, 1999, Measurement Errors and Information Content of Segment Reporting, Review of Accounting Studies 4(1): 15-43.

Gomes, A and Phillips, G., 2007. Why Do Public Firms Issue Private and Public Securities. Working paper, Washington University and University of Maryland.

Graham, J., C. Harvey, and S. Rajgopal, 2005. The economic implications of corporate financial reporting. Journal of Accounting and Economics 40, 3-73.

Gray, S. and Roberts, C. (1988), Voluntary information disclosure and the British multinationals: Corporate perceptions of costs and benefits, in: International pressures for accounting change, Hopwood, A. G. (ed.), London (Prentice Hall).

Guo, R., LEV B., and Zhou, N., 2004, Competitive Costs of Disclosure by Biotech IPOs. Journal of Accounting Research 42, 319-355.

Harford, J., 1999, Corporate Cash Reserves and Acquisitions. Journal of Finance 54, 1969-1997.

Harris, M., 1998. The association between competition and managers' business segment reporting decisions. Journal of Accounting Research 36, 111–128.

Hayes, R. and Lundholm, R. (1996), Segment Reporting to the Capital Market in the Presence of a Competitor, Journal of Accounting Research, Vol. 34, Autumn, p. 261-279.

Healy, Paul, Amy Hutton, and Krishna Palepu, 1999, Stock Performance and Intermediation Changes Surrounding Sustained Increases in Disclosure, Contemporary Accounting Research 16, 485-520.

Healy, P. and Palepu, K., 2001, Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature, Journal of Accounting and Economics 31, 405-440.

Hellman, T. and M. Puri, 2000, The interaction between product market **and** financing strategy: the role of venture capital, Review of Financial Studies *13*, 959-984.

Hertzel, Michael, and Richard L. Smith, 1993, Market discounts and shareholder gains for placing equity privately, Journal of Finance 48, 459-485.

Karuna, Christo, 2007, Industry Product Market Competition and Managerial Incentives, Journal of Accounting and Economics 43, 275-297.

Kovenock, D., and G.M. Phillips, 1997, "Capital Structure and Product Market Behavior: An Examination of Plant Exit and Investment Decisions," *Review of Financial Studies*, 10,767-803.

Lang, Mark, and Russell Lundholm, 1993, Cross-Sectional Determinants of Analyst Ratings of Corporate Disclosures, Journal of Accounting Research 31, 246-271.

Lerner, Josh, 1994, Venture capitalists and the decision to go public, Journal of Financial Economics 35, 293-316.

Livingston, M. and L. Zhou, 2002. The impact of Rule 144A debt offerings upon bond yields and underwriter fees. Financial Management 31, 5-28.

Leuz, Christian, 2004, Proprietary versus Non-Proprietary Disclosures: Evidence from Germany, in: C. Leuz, D. Pfaff, and A. Hopwood eds.: The Economics and Politics of Accounting. Oxford University Press, Oxford, 164-197.

McCkie-Mason, J., 1990. Do Firms Care Who Provide Financing? In "Asymmetric Information, Corporate Finance, and Investment" (R.G. Hubbard, Ed.). University of Chicago Press, Chicago.

Pagano, Marco, Fabio Panetta, and Luigi Zingales, 1998, Why Do Companies Go Public? An Empirical Analysis, *The Journal of Finance*, Vol. 53, Issue 1, pp. 27–64.

Phillips, G., 1995. Increased debt and industry product markets: an Empirical Analysis. Journal of Financial Economics (37), 189- 238.

Raith, M., 2003. Competition, risk and managerial incentives. American Economic Review 93 (4), 1425–1436.

Ritter, Jay R., Ivo Welch, 2002, A Review of IPO Activity, Pricing, and Allocations, The Journal of Finance, Vol. 57, Issue 4, pp. 1795–1828.

Subrahmanyam, Avanidhar, and Sheridan Titman, 1999, The Going-Public Decision and the Development of Financial Markets, *The Journal of Finance* 54 (3), 1045–1082.

Yosha, O., 1995. Information Disclosure Costs, and the Choice of Financing Source. Journalof Financial intermediation, 1995(4):3-20.

Verrecchia, R., 1983, Discretionary disclosure, Journal of Accounting and Economics 5, 179-194.

_____, 2001, Essays on Disclosure, Journal of Accounting and Economics 32, 97-180.

Wagenhofer, A., 1990, Voluntary disclosure with a strategic opponent, Journal of Accounting and Economics12, 341-363.

Wu, YiLin, 2004, The Choice of equity-selling mechanisms, Journal of Financial Economics 74, 93-119.

Table 1
Distribution of Debt Financing Activities &
Descriptive statistics on Competition Measures across Major Business Sectors

BUSINESS SECTORS	Number of debt financing	Mean CONCEN_ TRATION	Median CONCEN_ TRASTION	Mean PRICECOST_ MARGIN	Median PRICECOST_ MARGIN
Mining	65	0.115	0.115	2.795	2.797
Utilities	141	0.255	0.191	9.155	9.632
Construction	52	0.064	0.046	1.803	1.938
Manufacturing	767	0.220	0.184	1.544	1.487
Wholesale Trade	53	0.211	0.223	12.908	13.167
Retail Sale	83	0.221	0.228	8.397	9.225
Transportation	86	0.456	0.513	7.530	6.593
Warehousing	11	0.671	0.844	2.346	2.829
Information	66	0.325	0.322	4.092	3.365
Finance and Insurance	1,388	0.372	0.391	6.330	3.801
Real Estate and rental and leasing	125	0.158	0.102	7.690	8.477
Professional, Scientific, and technical services	69	0.234	0.235	2.982	2.545

Table 1
(Continued)

BUSINESS SECTORS	Number of debt financing	Mean CONCEN_ TRATION	Median CONCEN_ TRASTION	Mean PRICECOST_ MARGIN	Median PRICECOST_ MARGIN
Administrative and Support and Waste Management and Remediation Services	34	0.246	0.160	2.917	2.460
Education Services	9	0.082	0.084	2.978	2.966
Health Care and social Assistance	30	0.291	0.286	2.997	2.962
Arts, Entertainment, and Recreation	45	0.178	0.142	3.089	3.101
Accommodation and Food Services	55	0.265	0.220	3.577	3.669
Other Services, except Public Administration	6	0.186	0.197	4.207	4.061

I use the 6-digit North American Industry Classification System (NAICS) to define a product market, and thus, the associated major business sectors. The industry concentration ratio (CONCENTRATION) is measured as the proportion of revenues earned by the four largest firms relative to the total revenues at the aggregate industry level. The industry price to cost margin (PRICECOSTMARGIN) is measured as total revenue earned at the aggregate industry level divided by the sum of total costs of raw materials, total costs of shipment and total payroll expenses at the aggregate industry level.

Table 2
Descriptive Statistics at the Industry Level

Variable	N	Mean	Std	Median	Min	10th percentile	25th percentile	75th percentile	90th percentile	Max
PROPORTION	150	72.1%	37.9%	100%	0%	0%	44.4%	100%	100%	100%
CONCENTRATION	150	0.286	0.188	0.221	0.020	0.075	0.161	0.414	0.414	0.835
PRICECOSTMARGIN	150	6.641	4.532	5.302	1.109	1.777	3.004	9.540	9.540	21.205
POST_SFAS131	150	0.727	0.447	1.000	0.000	0.000	0.000	1.000	1.000	1.000
MULTIPLE	150	0.626	0.461	1.000	0.000	0.000	0.000	1.000	1.000	1.000
YIELD	150	6.515	1.807	6.597	1.510	4.599	5.437	7.444	7.444	13.000
MATURITY	150	9.633	3.561	10.352	2.188	3.970	7.122	12.292	12.292	15.821
REGULATED	150	0.900	0.301	1.000	0.000	0.500	1.000	1.000	1.000	1.000
POST_SOX	150	0.451	0.484	0.000	0.000	0.000	0.000	1.000	1.000	1.000

An industry is defined at the 6-digit NAICS code level. The industry concentration ratio (CONCENTRATION) is measured as the proportion of revenues earned by the four largest firms relative to the total revenues at the aggregate industry level. The industry price to cost margin (PRICECOSTMARGIN) is measured as total revenue earned at the aggregate industry level divided by the sum of total costs of raw materials, total costs of shipment and total payroll expenses at the aggregate industry level. PROPORTION is the proportion of private placements at each industry-year observation. The indicator variable POST_SFAS131 is coded as 1 if the issue occurs after 1997, and 0, otherwise. MULTIPLE is the proportion of firms operating in multiple liens of business in an industry. YIELD is the average market yields for all debt securities issued in an industry. MATURITY is the average length of maturity in years for all debt securities issued in an industry. REGULATED is coded as 1 if a company is a utility firm or a company is a bank, saving and loan institutions, insurance company, or securities firm, and 0 otherwise. The indicator variable POST_SOX is coded as 1 if the offering occurs after July 2002, and 0, otherwise.

Table 3
Correlation Table at the Industry Level (Pearson Lower Diagonal and Spearman Upper Diagonal)

	LOG _ODDS	CONCEN _ TRATION	PRICECOST_ MARGIN	MULTIPLE* POST_SFAS131	POST_SFAS131	MULTIPLE	INDUSTRY_ MARKETYIELD	MATURITY	REGULATED	POST_SOX
LOG _ODDS		**-0.225**	**-0.300**	**0.164**	**-0.043**	**0.205**	**0.316**	**0.518**	**0.025**	**0.140**
		0.006	*0.001*	*0.045*	*0.603*	*0.012*	*0.001*	*0.001*	*0.759*	*0.087*
CONCEN _TRATION	**-0.336**		**0.336**	**0.056**	**-0.042**	**0.075**	**-0.078**	**-0.159**	**0.097**	**-0.139**
	0.001		*0.001*	*0.497*	*0.607*	*0.359*	*0.343*	*0.053*	*0.236*	*0.089*
PRICECOST _MARGIN	**-0.202**	**0.161**		**-0.133**	**-0.198**	**-0.046**	**0.075**	**-0.020**	**-0.272**	**-0.280**
	0.013	*0.048*		*0.105*	*0.015*	*0.577*	*0.361*	*0.809*	*0.001*	*0.001*
MULTIPLE *POST_SFAS131	**0.179**	**0.010**	**-0.164**		**0.559**	**0.662**	**-0.303**	**-0.015**	**-0.095**	**0.453**
	0.028	*0.906*	*0.045*		*0.001*	*0.001*	*0.000*	*0.856*	*0.250*	*0.001*
POST_SFAS131	**-0.071**	**0.023**	**-0.248**	**0.545**		**-0.107**	**-0.528**	**-0.144**	**-0.055**	**0.581**
	0.391	*0.781*	*0.002*	*0.001*		*0.191*	*0.001*	*0.080*	*0.505*	*0.001*
MULTIPLE	**0.237**	**-0.050**	**-0.019**	**0.665**	**-0.135**		**0.076**	**0.116**	**-0.107**	**0.068**
	0.004	*0.543*	*0.818*	*0.001*	*0.101*		*0.357*	*0.156*	*0.192*	*0.411*
YIELD	**0.369**	**-0.161**	**0.082**	**-0.257**	**-0.500**	**0.120**		**0.426**	**-0.058**	**-0.562**
	0.001	*0.048*	*0.319*	*0.002*	*0.001*	*0.143*		*0.001*	*0.483*	*0.001*
MATURITY	**0.559**	**-0.196**	**0.059**	**-0.022**	**-0.173**	**0.129**	**0.463**		**-0.268**	**-0.027**
	0.001	*0.016*	*0.473*	*0.791*	*0.035*	*0.116*	*0.001*		*0.001*	*0.740*
REGULATED	**-0.012**	**0.159**	**-0.216**	**-0.092**	**-0.055**	**-0.098**	**-0.079**	**-0.258**		**0.011**
	0.880	*0.052*	*0.008*	*0.261*	*0.505*	*0.234*	*0.338*	*0.001*		*0.891*
POST_SOX	**0.136**	**-0.079**	**-0.265**	**0.431**	**0.573**	**0.048**	**-0.508**	**-0.021**	**0.001**	
	0.098	*0.337*	*0.001*	*0.001*	*0.001*	*0.557*	*0.001*	*0.800*	*0.995*	

Correlations are in bold and p-values are in italic.

Table 3
(Continued)

An industry is defined at the 6-digit NAICS code level. The industry concentration ratio (CONCENTRATION) is measured as the proportion of revenues earned by the four largest firms relative to the total revenues at the aggregate industry level. The industry price to cost margin (PRICECOSTMARGIN) is measured as total revenue earned at the aggregate industry level divided by the sum of total costs of raw materials, total costs of shipment and total payroll expenses at the aggregate industry level. PROPORTION is the proportion of private placements at each industry-year observation. LOG_ODDS is measured as Ln [PROPORTION /(1-PROPORTION)]. The indicator variable POST_SFAS131 is coded as 1 if the issue occurs after 1997, and 0, otherwise. MULTIPLE is the proportion of firms operating in multiple liens of business in an industry. YIELD is the average market yields for all debt securities issued in an industry. MATURITY is the average length of maturity in years for all debt securities issued in an industry. REGULATED is coded as 1 if a company is a utility firm or a company is a bank, saving and loan institutions, insurance company, or securities firm, and 0, otherwise. The indicator variable POST_SOX is coded as 1 if the offering occurs after July 2002, and 0, otherwise.

Table 4
Proprietary Costs and *Privately* Held Firms' Financing Choice at the Industry Level

Regression results from the model: $LOG\_ODDS_{it} = \alpha + \gamma_1 CONCENTRATION_{it} + \gamma_2 PRICECOSTMARGIN_{it} + \gamma_3 MULTIPLE_{it} * SFAS131_t + \beta_1 POST\_SFAS131_{it} + \beta_2 MULTIPLE_{it} + \beta_3 YIELD_{it} + \beta_4 MATURITY_{it} + \beta_5 REGULATED_{it} + \beta_6 POST\_SOX_{it} + \varepsilon_{it}$

	Dependent variable: *LOG_ODDS*					
Explanatory Variables	Predicted Sign	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)
INTERCEPT		-5.455 (0.002)	-3.621 (0.038)	-5.154 (0.006)	-2.796 (0.006)	-0.299 (0.891)
CONCENTRATION	***(-)***		***-4.632 (0.001)***			***-4.721 (0.001)***
PRICECOSTMARGIN	***(?)***			***-0.027 (0.654)***		***-0.029 (0.634)***
MULTIPLE*POST_SFAS131	***(+)***				***2.007 (0.106)***	***3.051 (0.024)***
POST_SFAS131	*(?)*				-3.179 (0.007)	-3.668 (0.002)
MULTIPLE	*(?)*				-0.476 (0.683)	-1.518 (0.195)
YIELD	*(+)*	0.745 (0.001)	0.675 (0.001)	0.736 (0.001)	0.595 (0.001)	0.541 (0.001)
MATURITY	*(?)*	0.039 (0.001)	0.038 (0.001)	0.039 (0.001)	0.040 (0.001)	0.039 (0.001)
REGULATED	(-)	-0.586 (0.589)	-0.329 (0.753)	-0.632 (0.562)	-1.009 (0.375)	-0.703 (0.533)
POST_SOX	(+)	2.606 (0.001)	2.363 (0.001)	2.479 (0.001)	3.242 (0.001)	2.786 (0.001)
Adjusted R-Squared		35.6%	39.8%	35.2%	39.6%	43.6%
N of industry-years		150	150	150	150	150

Table 4
(Continued)

An industry is defined at the 6-digit NAICS code level. The industry concentration ratio (CONCENTRATION) is measured as the proportion of revenues earned by the four largest firms relative to the total revenues at the aggregate industry level. The industry price to cost margin (PRICECOSTMARGIN) is measured as total revenue earned at the aggregate industry level divided by the sum of total costs of raw materials, total costs of shipment and total payroll expenses at the aggregate industry level. PROPORTION is the proportion of private placements at each industry-year observation. LOG_ODDS is measured as Ln [PROPORTION /(1-PROPORTION)]. The indicator variable POST_SFAS131 is coded as 1 if the issue occurs after 1997, and 0, otherwise. MULTIPLE is the proportion of firms operating in multiple liens of business in an industry. YIELD is the average market yields for all debt securities issued in an industry. MATURITY is the average length of maturity in years for all debt securities issued in an industry. REGULATED is coded as 1 if a company is a utility firm or a company is a bank, saving and loan institutions, insurance company, or securities firm, and 0, otherwise. The indicator variable POST_SOX is coded as 1 if the offering occurs after July 2002, and 0, otherwise.

Table 5
Change in Product Market Competition &
Change in the Proportion of Private Placements at the Industry level

Panel A: Proportion of private placements by change in industry concentration

Change in competition measures across periods	**Interpretation of the change in competition across periods**	**Proportion of private placements between 1993 and 1999**	**Proportion of private placements between 2000 and 2007**	**Change in the proportion of private placements across periods**
Change in CONCENTRATION is **above** the median	Less competitive over time	92.1%	82.0%	- 10.1%
Change in CONCENTRATION is **below** the median	More competitive over time	75.1%	71.2%	-3.9%
Difference in the change in the proportion of private placements across periods (p-value)				-7.2% (0.001)

Panel B: Proportion of private placements by change in industry price to cost margin

Change in competition measures across periods	**Interpretation of the change in competition across periods**	**Proportion of private placements between 1993 and 1999**	**Proportion of private placements between 2000 and 2007**	**Change in the proportion of private placements across periods**
Change in PRICECOSTMARGIN is **above** the median	Less competitive over time	75.4%	65.0%	-10.4%
Change in PRICECOSTMARGIN is **below** the median	More competitive over time	89.6%	92.2%	2.6%
Difference in the change in the proportion of private placements across periods (p-value)				-14.0% (0.001)

Table 5
(Continued)

An industry is defined at the 6-digit NAICS code level. The industry concentration ratio (CONCENTRATION) is measured as the proportion of revenues earned by the four largest firms relative to the total revenues at the aggregate industry level. The industry price to cost margin (PRICECOSTMARGIN) is measured as total revenue earned at the aggregate industry level divided by the sum of total costs of raw materials, total costs of shipment and total payroll expenses at the aggregate industry level. The values for CONCENTRATION and PRICECOSTMARGIN for the subs-sample period from 1993 to 1999 are hand-collected from the 1997 Economic Consensus and the values for CONCENTRATION and PRICECOSTMARGIN for the subs-sample period from 2000 to 2007 are hand-collected from the 2002 Economic Consensus.

Table 6
Formation of the Hand-collected Sample for the Firm-level Analysis

	Number of observations
Private placements for which offering documents are available	104
Private placements with equity components	4
Private placements where financial information about the issuer is missing	18
Private placements of debt with financial information available about the issuer	82
Private placements of debt in the hand-collected sample	82
Matched public offerings of debt in the same 6-digit NAICS product	432
Matched public offerings of debt where financial information about the issuer is missing	184
Matched public offerings of debt with financial information available about the issuer	258
Public offerings of debt in the hand-collected sample	258
Private placements and public offerings of debt in the hand-collected sample	340
Private placements and public offerings of debt after deleting outliers at both bottom and top 1% of all financial variables	316

Table 7
Descriptive Statistics and Correlations at the Firm Level

Panel A: Descriptive statistics on financial characteristics of the issuers at the firm level

	Overall hand-collected sample						Public offerings			Private placements		
Variables	**N**	**Mean**	**Median**	**Std**	**Min**	**Max**	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**
ROA	316	0.087	0.083	0.092	-0.329	0.293	251	0.090	0.093	65	0.074	0.087
POST_SFAS131	316	0.753	0.432	1.000	0.000	1.000	251	0.717	1.000	65	0.892**	1.000**
RD	316	0.001	0.004	0.000	0.000	0.041	251	0.000	0.000	65	0.003*	0.000**
EXCESSCASH	316	0.154	0.425	0.066	0.000	5.184	251	0.169	0.073	65	0.094*	0.047*
PROCEEDS(M$)	316	305.6	280.2	224.6	5.0	1992.0	251	328.8	248.8	65	216.0**	160.0**
ASSETS(M$)	316	8876.0	16037.0	3153.0	28.9	104104.0	251	11013.0	4633.0	65	621.5**	405.9**
POST_SOX	316	0.509	0.501	1.000	0.000	1.000	251	0.462	0.000	65	0.692**	1.000**
INVESTMENT _GRADE	316	0.614	0.488	1.000	0.000	1.000	251	0.713	1.000	65	0.231**	0.000**
ISSUEYIELD	296	0.068	0.032	7.125	0.010	0.141	251	0.063	0.068	45	0.098**	0.098**

**Difference is significant at 0.01 level; * Difference is significant at 0.05 level

Table 7
(Continued)

Panel B: Pearson correlation (below diagonal) and Spearman correlations (upper diagonal) at the firm level

	PRIVATE _PLACEMENT	ROA	POST_ SFAS131	RD	EXCESSCASH	PROCEEDS	SIZE	POST _SOX	INVESTMENT _GRADE
PRIVATE_ PLACEMENT		**-0.091**	**0.164**	**0.355**	**-0.110**	**0.592**	**-0.570**	**0.186**	**-0.401**
		0.105	*0.003*	*0.001*	*0.051*	*0.001*	*0.001*	*0.001*	*0.001*
ROA	**-0.076**		**0.045**	**-0.047**	**0.069**	**-0.156**	**0.154**	**0.175**	**0.124**
	0.176		*0.426*	*0.409*	*0.222*	*0.006*	*0.006*	*0.002*	*0.028*
POST_SFAS131	**0.164**	**-0.009**		**-0.025**	**-0.284**	**-0.024**	**0.199**	**0.583**	**-0.107**
	0.003	*0.876*		*0.664*	*0.001*	*0.671*	*0.001*	*0.001*	*0.057*
RD	**0.275**	**0.016**	**-0.081**		**0.013**	**0.179**	**-0.218**	**0.030**	**-0.191**
	0.001	*0.774*	*0.151*		*0.824*	*0.001*	*0.001*	*0.590*	*0.001*
EXCESSCASH	**-0.071**	**0.002**	**-0.176**	**-0.023**		**0.058**	**-0.126**	**-0.303**	**0.014**
	0.206	*0.977*	*0.002*	*0.689*		*0.308*	*0.026*	*0.001*	*0.803*
PROCEEDS	**0.418**	**-0.239**	**-0.042**	**0.189**	**0.070**		**-0.872**	**-0.026**	**-0.547**
	0.001	*0.001*	*0.461*	*0.001*	*0.212*		*0.001*	*0.643*	*0.001*
SIZE	**-0.573**	**0.197**	**0.200**	**-0.183**	**-0.097**	**-0.613**		**0.179**	**0.519**
	0.001	*0.001*	*0.001*	*0.001*	*0.084*	*0.001*		*0.001*	*0.001*
POST_SOX	**0.186**	**0.188**	**0.583**	**-0.048**	**-0.177**	**-0.064**	**0.182**		**-0.102**
	0.001	*0.001*	*0.001*	*0.399*	*0.002*	*0.254*	*0.001*		*0.070*
INVESTMENT_ GRADE	**-0.401**	**0.161**	**-0.107**	**-0.153**	**-0.143**	**-0.266**	**0.500**	**-0.102**	
	0.001	*0.004*	*0.057*	*0.007*	*0.011*	*0.001*	*0.001*	*0.070*	

Table 7
(Continued)

Correlation coefficients are in bold and p-values are in italics in the correlation table. The indicator variable *PRIVATE_PLACEMENT* is coded as 1 if the debt offering is a private placement, and 0, otherwise. *ROA* is net income before interest expenses deflated by total assets in the year prior to the issue. *ASSETS(M$)* is the dollar amount of total assets in millions. The indicator variable POST_*SFAS131* is coded as 1 if the issue occurs after 1997, and 0, otherwise. *RD* is research and development expenses deflated by total assets. *EXCESSCASH* is cash balance minus the sum of capital expenditure, interest expense and tax expense deflated by total assets. *PROCEEDS(M$)* is the dollar amount of proceeds raised from the issue in millions. *PROCEEDS* is the amount of proceeds raised from the issue deflated by total assets prior to the issue. *SIZE* is the natural log of total assets in the year prior to the issue. The indicator variable *POST_SOX* is coded as 1 if the offering occurs after July 2002, and 0, otherwise. INVESTMENTGRADE is coded as 1 if the issue receives investment grade from Moody's, and 0, otherwise. ISSUEYIELD is the market yield on the specific debt issue.

Table 8
Proprietary Costs and the Likelihood of Private Placements at the Firm Level

Probit regression results from the model: $PROB\ (PRIVATE\ PLACEMENT)_{it} = F\ (\alpha + \boldsymbol{\beta_1 ROA_{it}} + \beta_2\ POST\_SFAS131_t + \beta_3 RD_{it} + \beta_4\ EXCESSCASH_{it} + \beta_6 PROCEEDS_{it} + \beta_7\ SIZE_{it} + \beta_8 POST\_SOX_{it} + \beta_9 INVESTMENTGRADE_{it})$

	Dependent variable = 1 if the issue is a private placement and 0 if the issue is a public offering		
Explanatory variables	Predicted Sign	Coefficients (p-value)	Coefficients (p-value)
INTERCEPT		8.455 (0.001)	-1.070 (0.753)
ROA	**(+)**	**4.015** **(0.091)**	**5.696** **(0.051)**
POST_SFAS131	(+)	2.507 (0.004)	2.113 (0.029)
RD	(+)	4.028 (0.832)	4.347 (0.831)
EXCESSCASH	(-)	-3.438 (0.020)	-6.824 (0.018)
PROCEEDS	(-)	0.115 (0.937)	0.029 (0.964)
SIZE	(-)	-1.780 (0.001)	-1.156 (0.007)
POST_SOX	(+)	1.338 (0.021)	1.159 (0.086)
INVESTMENTGRADE	(-)	-0.479 (0.368)	0.666 (0.002)
ISSUEYIELD	(-)		-0.988 (0.266)
N		316	293
Likelihood ratio		194.48 (0.001)	149.12 (0.001)

Table 8
(Continued)

The indicator variable *PRIVATE_PLACEMENT* is coded as 1 if the debt offering is a private placement, and 0, otherwise. *ROA* is net income before interest expenses deflated by total assets in the year prior to the issue. The indicator variable POST_*SFAS131* is coded as 1 if the issue occurs after 1997, and 0, otherwise. *RD* is research and development expenses deflated by total assets. *EXCESSCASH* is cash balance minus the sum of capital expenditure, interest expense and tax expense deflated by total assets. *PROCEEDS* is the amount of proceeds raised from the issue deflated by total assets prior to the issue. *SIZE* is the natural log of total assets in the year prior to the issue. The indicator variable *POST_SOX* is coded as 1 if the offering occurs after July 2002, and 0, otherwise. INVESTMENTGRADE is coded as 1 if the issue receives investment grade from Moody's, and 0, otherwise. ISSUEYIELD is the market yield on the specific debt issue.

Table 9
Robustness Check: Proprietary Costs and *Publicly* Held Firms' Financing Choice at the Industry Level

Regression results from the model: $LOG\_ODDS_{it} = \alpha + \gamma_1 CONCENTRATION_{it} + \gamma_2 PRICECOSTMARGIN_{it} + \gamma_3 MULTIPLE_{it} * SFAS131_t + \beta_1 POST\_SFAS131_{it} + \beta_2 MULTIPLE_{it} + \beta_3 YIELD_{it} + \beta_4 MATURITY_{it} + \beta_5 REGULATED_{it} + \beta_6 POST\_SOX_{it} + \varepsilon_{it}$

		Issues with investment grade ratings		Issues with junk ratings or no debt ratings	
Explanatory Variables	Predicted Sign	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)
INTERCEPT		-7.002 (0.002)	-8.912 (0.001)	11.818 (0.001)	12.774 (0.001)
CONCENTRATION	***(insignificant)***		***-0.365 (0.224)***		***-2.042 (0.179)***
PRICECOSTNMARGIN	***(insignificant)***		***-0.019 (0.212)***		***-0.106 (0.132)***
MULTIPLE*POST_SFAS131	***(insignificant)***		***0.246 (0.499)***		***-2.981 (0.153)***
POST_SFAS131	*(?)*		-0.068 (0.830)		3.661 (0.031)
MULTIPLE	*(?)*		0.001 (0.997)		2.928 (0.108)
YIELD	*(+)*	-0.078 (0.256)	0.205 (0.028)	-2.744 (0.001)	-3.303 (0.001)
MATURITY	*(?)*	0.005 (0.016)	0.006 (0.011)	0.086 (0.001)	0.099 (0.001)
REGULATED	(?)	0.085 (0.765)	-0.037 (0.906)	-3.772 (0.040)	-2.568 (0.176)
POST_SOX	(+)	1.606 (0.001)	0.763 (0.001)	1.689 (0.001)	-3.303 (0.002)
Adjusted R-Squared		3.79%	4.55%	48.22%	50.06%
N of industry-years		401		258	

Table 9
(Continued)

An industry is defined at the 6-digit NAICS code level. The industry concentration ratio (CONCENTRATION) is measured as the proportion of revenues earned by the four largest firms relative to the total revenues at the aggregate industry level. The industry price to cost margin (PRICECOSTMARGIN) is measured as total revenue earned at the aggregate industry level divided by the sum of total costs of raw materials, total costs of shipment and total payroll expenses at the aggregate industry level. PROPORTION is the proportion of private placements at each industry-year observation. LOG_ODDS is measured as Ln [PROPORTION /(1-PROPORTION)]. The indicator variable POST_SFAS131 is coded as 1 if the issue occurs after 1997, and 0, otherwise. MULTIPLE is the proportion of firms operating in multiple liens of business in an industry. YIELD is the average market yields for all debt securities issued in an industry. MATURITY is the average length of maturity in years for all debt securities issued in an industry. REGULATED is coded as 1 if a company is a utility firm or a company is a bank, saving and loan institutions, insurance company, or securities firm, and 0, otherwise. The indicator variable POST_SOX is coded as 1 if the offering occurs after July 2002, and 0, otherwise.

Appendix I: Sector Aggregation Titles under NAICS

Goods-Producing
- Natural resources and mining
  - Sector 11 (Agriculture, forestry, fishing and hunting)
  - Sector 21 (Mining)
- Construction
  - Sector 23 (Construction)
- Manufacturing
  - Sector 31-33 (Manufacturing)

Service-Providing
- Trade, transportation, and utilities
  - Sector 42 (Wholesale trade)
  - Sector 44-45 (Retail trade)
  - Sector 48-49 (Transportation and warehousing)
  - Sector 22 (Utilities)
- Information
  - Sector 51 (Information)
- Financial activities
  - Sector 52 (Finance and insurance)
  - Sector 53 (Real estate and rental and leasing)
- Professional and business services
  - Sector 54 (Professional, scientific, and technical services)
  - Sector 55 (Management of companies and enterprises)
  - Sector 56 (Administrative and support and waste management and remediation services)
- Education and health services
  - Sector 61 (Education services)
  - Sector 62 (Health care and social assistance)
- Leisure and hospitality
  - Sector 71 (Arts, entertainment, and recreation)
  - Sector 72 (Accommodation and food services)
- Other services
  - Sector 81 (Other services, except public administration)
- Public administration
  - Sector 92 (Public administration)
- Unclassified
  - Sector 99 (Unclassified)