

**The Decision to Go Public:**  
**Evidence from Mandatory SEC Filings of Private Firms**

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## **The Decision to Go Public: Evidence from Mandatory SEC Filings of Private Firms**

### **ABSTRACT**

We investigate a sample of private firms to determine whether they are likely to go public. While most private firms' data are not available, we take advantage of the fact that some firms are required to file with the SEC. Our sample firms are typically large and highly leveraged. Although we see some evidence of a debt overhang problem that inhibits firms from going public, our results also indicate that high leverage reflects managers' desire to avoid outside equity. Of the firms in the sample that do issue outside equity (to private equity specialists), there is a greater likelihood of attempting an IPO. This result is consistent with Black and Gilson's (1998) view of the stock market as an exit strategy.

## **The Decision to Go Public: Evidence from Mandatory SEC Filings of Private Firms**

In the U.S. people often view initial public offerings (IPOs) of equity as a natural phase in the life cycle of a firm, so that all successful start-ups eventually go public as a matter of course. Even UPS and Goldman Sachs eventually succumbed to the allure of the market.<sup>1</sup> Yet there is evidence that suggests going public is not a matter of course. Besides firms taken private in leveraged buyouts, there are some large investment grade firms, such as Cargill and the highly secretive Mars, which remain private. And a sizeable fraction of issuers in the junk bond market are firms that do not have publicly traded equity. Is it reasonable to assume that these firms will also eventually complete IPOs of equity? Or is there something inherently different in their businesses or ownership structures that will always keep them from listing their shares on an exchange? If they do go public, at what point in their corporate history will they choose to do so and what will be the deciding factors that push them in favor of going public?

There are a number of theories that address the question of why firms go public. For example, Zingales (1995) and Mello and Parsons (1998) see the IPO market as a first step in the process of selling a firm. Subrahmanyam and Titman (1999) argue that the main advantage to going public is that it allows a large fraction of the population, who encounter information about the firm's value in their everyday actions, to incorporate their "serendipitous" information into the stock price and make the price more efficient. In contrast, Chemmanur and Fulghieri (1998) view the IPO decision as a way to gain an informative public measure of valuation and diversify the venture capitalist's (VC) portfolio, but at the cost of duplicative, costly monitoring by many investors. Other theories focus on the information gained by start-ups by experiencing the IPO process (e.g.,

Benveniste, Busaba and Wilhelm (2002) and Maksimovic and Pichler (2001)).

We know very little about the predictive power of these theories, as the empirical literature on the decision to go public is relatively undeveloped. The major reason that empirical work lags theory is that privately held firms are typically not required to report their financial results. Thus there is no readily available database describing private firms that would allow a thorough investigation of the choice between going public and staying private. The only direct research on the topic to date is found in Pagano, Panetta, and Zingales (1998), hereafter referred to as PPZ, who investigate a sample of Italian firms using a data set provided by a consortium of Italian banks, and Fischer (2000) who investigates a sample of privately held German firms.

Whether the results of PPZ or Fischer can be generalized to the United States, by far the most active market in the world for IPOs, is an open question.<sup>2</sup> Only 69 of the more than 2000 eligible firms in PPZ's sample went public over 10 years, and more than 40 percent of those were equity carve-outs. In addition, the typical newly listed company in Italy is much larger and older than its counterpart in the U.S.—8 times as large and 6 times as old. Fischer analyzes a much more active market, as the number of IPOs on the Neuer Markt rose sharply during the late 1990s, but even the most active period in Germany had fewer than 100 IPOs per year, or the equivalent of a weak year in the U.S.

While such detailed information about a random sample of private firms in the U.S. is not available, it is possible to learn much more about a certain group of private firms that might go public in the U.S. In this paper, we take advantage of the fact that a number of firms whose stock is not publicly traded are required to file reports with the SEC. In most cases, the firms must file financial reports with the SEC because they have issued public bonds, but others simply have a large number of shareholders despite their private status.<sup>3</sup>

These data on private firms allow us to contribute to the literature on going public in a number of respects. Most importantly, we can examine firms in the U.S., where IPOs are not as constricted by the regulatory and tax environment (relative to Italy, for example), and where many more companies go public. While most of our firms issue bonds and thus cannot be described as small, the thriving high yield bond market allows us to study a sample that is not necessarily restricted to large safe firms. Although most firms in our sample remain private in the three years after we examine them, we do observe that about a fifth of them attempt equity IPOs. Moreover, this newer sample allows us not only to reexamine theories of the decision to go public tested in the PPZ paper, but to consider some theories that originated after their study was completed, using firm level accounting and shareholding data.

We examine a sample of 178 nonfinancial firms that were private as of December 31, 1996. We investigate these firms' financial conditions, ownership structures and ages and compare them to other samples of firms with publicly traded equity. In addition, we split the sample of private firms into those that attempt an IPO and compare them to those that seem content to remain private.

We find the firms in our sample have much higher leverage than public firms. We conjecture that the higher leverage reflects a desire by management to maintain concentrated control of the firm, relative to the other firms in the sample. Hence, they more often issue debt than equity as they grow. However, some of the firms in our sample appear to be private because they suffer from a debt overhang problem. Among the private firms that are sufficiently willing to give up control rights are some that have sold equity to private equity investors (e.g., venture capitalists (VCs) and non-venture/buyout forms of private equity (PE)). These firms are more likely to go public within our sample of private firms, a result that supports Black and Gilson's (1998) view of the IPO market as an ideal exit strategy. We find little evidence that IPOs are driven by management's desire for

diversification or even the desire to increase the shareholder base. Other factors that appear to be important in the decision to go public are the firms' ages (younger firms do IPOs) and size (larger firms go public), but these do not appear to be related to growth opportunities or reputation.

The organization of the paper is as follows: in Section II we review the existing literature and consider testable hypotheses. Section III is our empirical investigation. Section IV is the conclusion.

## **II. Motives for Going Public**

In this section we consider a number of explanations for why our sample firms may prefer to remain private, or alternatively, eventually go public. We focus on three factors that have been identified in the literature that are likely to impact the decision to go public for these 178 firms: (1) the value of having a public stock price; (2) the firm's desired ownership structure; and (3) its capital structure. Next we discuss the theories related to these three issues and relevant previous empirical research.

### *1. The Value of Having a Public Stock Price*

Subrahmanyam and Titman (1999) argue that the cost of capital is affected by the amount of serendipitous information available for a firm. The logic is that when many potential investors have contact with a firm and receive this free information, their trading in the firm's shares (if it is public) will lead to a more precise valuation figure than the stock price of a firm for which little serendipitous information is available. As a result serendipitous information lowers the cost of capital. We expect this type of information to vary with the extent to which firms in the industry are in the public eye. A similar view of the stock market is found in Chemmanur and Fulghieri (1999), which also views a stock price as a more precise firm value measure than that obtained from a VC.

Chemmanur and Fulghieri, though, emphasize the fact that the information incorporated into a stock price is costly to produce, and therefore an impediment to going public if many people produce it.

An alternative role played by a public stock price is as an objective valuation of the firm. This value may be helpful in fulfilling contracts, such as those in stock-based mergers or venture capital investments. For example, United Parcel Service stated in 1999 that it was planning to do an IPO because it wished to undertake mergers paid for with equity.<sup>4</sup> For a large fraction of our sample, the valuation provided by the IPO enhances the exit strategies of VCs and PE investors (see Black and Gilson (1998)). Myers (2000) argues that this exit strategy is particularly valuable for allowing the existence of outside equity prior to the IPO. In his theory, the IPO market's valuation reduces outside equity investors' *ex post* bargaining power. Lerner (1994) suggests not only that VC investors use the IPO market as an exit strategy, but that experienced VC investors are able to exit when valuations are highest. PPZ find that industry market-to-book ratio is significantly positively related to the likelihood of going public, which appears to be related to market timing behavior.

For private firms whose owners would like to cash out, the sale of the firm may be better conducted using the IPO as a first step because of the availability of a stock price. Mello and Parsons (1998) argue that the IPO market allows a series of steps that eventually lead to the sale of the firm and that an active secondary market maximizes the price received by owner. We discuss the evidence on this theory below with the discussion of Zingales (1995).

## *2. Ownership of the Firm*

Next we reasons for going public or remaining private that are related to who owns the firm. These are typically reasons for why a concentrated shareholder base is good or bad.

A number of theoretical and empirical studies focus on the benefits of control that accrue to majority owners. Our sample's private firms vary greatly in the potential for management to consume private benefits, as some are 100% management-owned (or family-owned) while 31 firms have no management stake at all (these often have PE investors who hire management without giving them a direct equity stake). Maug (1996) argues that a major benefit of controlling a firm is the ability to preserve investments in one's human capital (a less sanguine view of this is to say that the owner and his relatives could not earn as much in any other job), which may be sufficiently important that an entrepreneur would prefer to remain private. Other researchers do not specify the nature of the private benefits of control, but several suggest that these benefits make a firm less efficient (or at least have lower reported profits). These include Wolfenzon, Nagar and Petroni (2002), Ang, Cole and Lin (2000), Moskowitz and Vissing-Jorgensen (2002) and Zingales (1994), who examine operating profitability or returns on investments. Finally, Boehmer and Ljungqvist (2001), who analyze private German firms that are identified as likely to go public, find that firms without majority owners are more likely to complete the IPO. We can identify firms in our sample that are more likely to lose private benefits of control by undertaking an IPO: these are the firms with few shareholders and management who control all of the voting power.

Managers who consume large private benefits are able to do so because of their control of the equity votes, but they do so at the expense of a diversified portfolio. Some researchers have focused sharply on the fact that an IPO provides the benefit of diversification. Pagano (1993) argues that entrepreneurs will go public if their portfolios can be sufficiently diversified as a result, and the

outcomes of these decisions can explain the development of stock markets across countries.

For the sole shareholder firm, the decision to go public may boil down to diversification versus the loss of private benefits of control, but private firms that have several shareholders may desire a still broader shareholder base for other reasons. Pagano and Roell (1998) note that if private firms have a number of large investors they may suffer from excessive monitoring. An IPO can ameliorate this situation by allowing the firm to establish a dispersed shareholder base of atomistic shareholders who do not monitor. However, Helwege and Liang (2003) find no evidence that waves of IPOs occur because of the desire to change to a more dispersed shareholder base (institutional holdings are higher in a hot market).

Zingales (1995) presents a model where the entrepreneur wishes to sell the firm, and thus would prefer to first acquire a dispersed shareholder base. By doing an IPO before the merger, the entrepreneur creates a free rider problem in the merger negotiations that leads to a higher bid premium. Several empirical papers test this theory, as well as the merger-based theory of Mello and Parsons (1998). Rydqvist and Hogholm (1995) examine Swedish IPOs and find that 35% are sold within five years of going public, which is consistent with these ideas. Brau, Francis and Kohers (2003) compare the choice facing private firms - either be acquired or do an IPO - and they also conclude the theories have merit. However, Field and Mulherin (1999) and Field and Karpoff (2002) look at antitakeover amendments, premiums and merger activity and find that IPO firms are not involved in proportionately more mergers and they tend to take steps to avoid being acquired without any clear effect on the takeover premium.

### *3. Capital Structure Decisions*

The extensive literature on the decision to go private (undertake a leveraged buyout (LBO)) suggests another benefit to being private. That is, LBOs result in efficiency gains because of the discipline of higher debt payments and alignment of the management's incentives through increased equity holdings (Jensen (1986) and Jensen (1989)). Although our firms have never been public firms, many in the sample have been involved in transactions that are similar to LBOs or which are actually divisional LBOs (a.k.a. divestiture LBOs). The additional value arising from this transaction may be related to lower free cash flow and having the appropriate capital structure, in which case going public may undo some very desirable features of being private. In particular, the capital structure benefits of remaining private with high leverage are expected to be greatest for firms with few growth opportunities. A substantial body of evidence in the LBO literature supports this view of going private (e.g., Kaplan (1989) and Palepu (1990)). Fischer (2000) investigates private firms in Germany in the "hot" IPO period of the late 1990s (the height of the Neuer Markt). Although he does not find a significant impact for leverage on the decision to go public, he does find, among the smaller firms in his private sample, that growth opportunities (capital expenditures, sales growth, R&D and intangibles) are important determinants of the likelihood of doing an IPO. PPZ find similar results.

In addition, Myers and Majluf (1984) argue that the lemons premium associated with equity offerings may lead to a reduction in the issuance of equity to outsiders. An IPO typically involves new equity issuance, but even the sale of the existing equity in an offering of secondary shares may be hindered by the lemons premium. For firms that are very concerned with the pricing of equity offerings, raising debt capital may be preferable. Then, we would find that highly levered firms are the least likely to undertake IPOs. Busaba, Benveniste and Guo (2001) consider reasons why firms

withdraw their IPO offerings and find that leverage is a major factor. This suggests that firms often use leverage rather than equity because of the valuation of their equity, and will withdraw an offering if the price appears to be too low.

Another capital structure consideration that may affect our sample is the debt overhang situation described by Myers (1977). If firms do not yet have a debt overhang and are concerned about missed opportunities to undertake positive NPV projects, they may be more likely to raise new equity (which is easily done in an IPO). Thus, we would expect leverage as well as growth opportunities to be positively related to the likelihood of going public. An alternative situation might be that the debt overhang problem has already come to pass and the firms in our sample are so highly levered that no investor would inject equity into them for fear that it would only bail out existing bondholders. If this debt overhang situation is more common, then higher leverage could reduce the probability of going public.

Other theories in the literature on the decision to go public address explanations for doing an IPO that are more relevant for small firms. In particular, arguments put forth by Maksimovic and Pichler (2001), Benveniste, Busaba and Wilhelm (2002) and Stoughton, Wong and Zechner (2001) consider the role of the IPO process from the perspective of a start-up firm. Our sample only has a handful of start-ups, while annual sales figures for our firms average \$285 million. Thus this analysis is unlikely to show a major role for these theories, even if many IPOs are actually affected by them.

Likewise, a number of empirical papers focus on issues, which if sufficiently extreme, might motivate a small firm to remain private (e.g., Beatty and Ritter (1986) show underpricing is higher for small firms; Megginson and Weiss (1991) and Hamao, Packer, and Ritter (2000) show that third-party verification lowers underpricing; and Ritter (1987) shows that the fixed costs of an IPO might

be too high for smaller firms). Nonetheless, PPZ find the most important variable in terms of statistical and economic significance is size, even though IPO firms in Italy are not particularly young on average. We control for size and age, in the event they matter for our sample as well.

Some theories, such as those of Yosha (1995) and Maksimovic and Pichler (2001), emphasize the fact that private firms are not required to provide information that might help their competitors. As our sample firms are all required to file with the SEC despite their private status, one could scarcely argue that they remained private for the sake of secrecy. Hence we expect that R&D, patents, trade secrets and growth opportunities will be a lesser issue among these private firms. Another advantage of being private mentioned by DeAngelo, DeAngelo and Rice (1984) is that one can avoid the direct recurring costs of being a public firm, such as filing 10-Ks (they cite estimates of \$30,000 - \$100,000 annually for firms with market capitalizations averaging less than \$3 million). However, we should note that the firms in our study do not necessarily report with the SEC for long periods of time.<sup>5</sup>

### **III. Empirical Investigation of the Decision to Go Public**

#### **A. Data**

Our analysis of private firms requires that the firms in the sample provide detailed financial and ownership data to the public, which is generally not the case for private firms in the U.S. To create our sample we consider two databases that contain names of private firms that are likely to file reports with the SEC. One is the Fixed Income Database (FID), which is a dataset created by Lehman Brothers that is meant to be a comprehensive database of outstanding bonds and their prices during the period 1973-1998. We use this database not for its bond prices, but because it is a census of firms with bonds outstanding in the U.S. public bond market, including private firms that have

issued public bonds. Second, we examine the firms with data on Compustat that are not on CRSP, on the assumption that Compustat obtains the data from the SEC even though CRSP indicates the firm's stock is not publicly traded. The first database could largely be a subset of the second, except for two considerations. One, Compustat does not aim to be a comprehensive database of all firms that are required to file regular reports with the SEC. Second, it is possible for firms to provide significant amounts of information in registration statements for public bond offerings but not file the 10-K reports that constitute the Compustat database.

In order to reduce the scope of the data collection effort, we choose to examine firms that were private as of December 1996. This date is fairly recent, but still allows time to see if the firms subsequently file to do an equity IPO. The financial data and ownership data are from December 1996, or when the fiscal year ends in another month, from a date within six months of December 1996.

The list of potential firms culled from these two databases includes many subsidiaries, foreign firms, and firms for which the stock price is missing simply because of timing issues or incorrect cusip match-ups. To ensure that we are examining firms that have never been public firms, we eliminate firms that ever had publicly traded stock on CRSP prior to January 1997 as well as firms that other sources indicated had been publicly traded prior to December 1996. These sources include the Directory of Corporate Affiliations (1997), SEC filings posted on Edgar, and news stories in Bloomberg, Lexis/Nexus, and Business and Industry. Once we determine that a firm was private at year-end 1996, we obtain financial data either from Compustat or by copying data reported in Edgar filings.

Our goal is to create a sample of U.S. private firms that potentially could tap the public equity markets if they so desired. To that end we eliminate firms that do not appear to have

complete control over this decision. We exclude subsidiaries of public firms (firms that have 51% or more ownership by a public firm as of December 1996); firms that were majority-owned by a private firm that also owned a public firm in an empire that was not clearly delineated<sup>6</sup>; firms headquartered overseas; and firms that were in bankruptcy or in default as of December 31, 1996. We retain firms owned by a group of public firms as long as there was no majority owner, and we retain firms that previously had been part of a public firm as long as they were never public as independent firms.<sup>7</sup> A large number of the firms that appeared on Compustat that were not in CRSP had data for 1996 in Compustat only because they had completed an IPO in 1997 or 1998. These firms do not constitute a random sample of private firms because their data only appear because they chose to go public. Thus we eliminate them from the analysis.

For the private firms that comprise our sample, the most common reason for filing a report with the SEC is that the firm has a public bond outstanding (Table 1). The next most common reason is that the firm has more than 500 shareholders. This second group includes about 20 cooperatives. Although a cooperative may seem an unlikely candidate for undertaking an IPO, we found no evidence that these firms were sharply different from the other private firms in our sample and in some cases indications that they would consider demutualization, a change that would make going public significantly easier should the firm choose to do so.

Ownership structure data are obtained most often from SEC filings, but in rare instances where the SEC filings provided insufficient data, news stories indicate the number and type of investors. Firms for which this or other relevant data were missing were not included in the sample. We classify owners according to whether they are managers, family members, VC or PE investors, other firms or ESOPs. Typically, a VC or PE firm identifies itself as such in the SEC filings, but there are rare occasions when they do not. To assist in this classification, we conducted an internet

search of sites that list VC/PE specialists. This produced a list of more than 900 investors that we also used in the classification process.

For each private firm in our sample, we assign a matching public firm found on Compustat. We assign matches by choosing among firms in the same 4-digit sic code industry with similar sales.

If a match was not found within the 4-digit SIC code, another was found in the same 3-digit industry.

We collect data on firm age for our sample of private firms and for the firms that serve as a match. The age information is largely available in the SEC filings, but when it is not, it is either on company websites or in news stories or elsewhere on the internet (e.g., such as websites on the history of radio in the U.S.).

We determine whether the private firms in our sample subsequently go public or attempt to go public by searching the Securities Data Corporation (SDC) database on IPOs and news stories. We define an attempt at an IPO as a filing with the SEC. We limit our definition of attempted IPOs to firms that filed an IPO registration statement with the SEC, even if news stories indicate the firm was considering an IPO. However, we do include firms as attempting an IPO even if the SEC filing occurred prior to December 1996. Among our sample of 178 private firms, 42 went public or announced an intention to go public. Of these, 27 firms completed IPOs between January 1997 and December 1999 (of which 16 were in 1997). The 15 attempted IPOs include 6 firms that filed with the SEC after December 1996, but did not complete the IPO by December 1999 (most announced that the IPO was withdrawn or indefinitely postponed), and 9 firms that attempted IPOs prior to December 1996, most of which were in 1995 and 1996 (one occurred as early as July 1992 and two more were in 1993).

We provide limited comparisons to two other samples: firms in the Federal Reserve Board's

1998 Survey of Small Business Finances (SSBF) and firms that completed IPOs in the years 1997-1999. The SSBF is a survey of several thousand small firms, where small is defined as having fewer than 500 employees. Although it is not designed as a survey of private firms, in fact all but about a dozen firms are not publicly traded. The statistics we report about SSBF firms are taken directly from Cavalluzzo and Wolken (2002). Statistics for the IPO sample are created from analyzing Compustat data for IPOs firms identified on the SDC dataset (excluding financial firms, spinoffs, and reverse LBOs).

## **B. Explanatory Variables**

*Desire for Control.* We proxy for the desire to maintain control with an indicator variable for firms that have 100% ownership in the hands of the management/family (but not management that is also part of a VC/PE firm) and no more than 15 shareholders. The fact that there are no outside investors suggests the owner has had a high desire to maintain control rights.<sup>8</sup>

*Capital Structure.* We measure leverage as the ratio of long-term debt to assets. Another measure of the burden of debt payments is interest coverage, or EBITDA divided by interest expense. If the firm has no interest expense, we set interest coverage to 1000.

Although none of our firms is in default at year-end 1996 (by construction of the sample), it is possible that some of them are in distress and potential participants in the IPO do not see sufficient value to cover the debt overhang. A proxy for the effects of the debt overhang is an indicator variable for whether the firm has an investment-grade rating from Moody's Investors Service or Standard & Poor's (some firms in the sample do not have debt ratings and thus receive a zero for this indicator). Another proxy for the overhang is an indicator variable for firms that may be close to distress (an indicator for firms with "bad news"). This bad news variable is one for any firm that has both negative operating earnings

in 1996 and negative sales growth between 1995 and 1996. In addition, we set this indicator to one for Sabreliner, which in December 1996 is suffering the ill effects of a lawsuit accusing the firm of causing the Valuejet airplane crash (this is the sole firm identified as having such explicitly negative news).

Several of the capital structure theories are related to the presence of growth opportunities. Our growth opportunity proxies include capital expenditures (scaled by assets) and the rate of growth in sales over the previous year. If a firm had zero sales in 1995, we capped the growth variable at 1,000 percent (slightly above the highest finite sales growth number in the sample). We also consider whether age, size (the log of total sales) or profitability (operating profits over total sales) affect the probability of going public. We measure age as the number of years the product has been sold under its brand name. For example, if we observe a divestiture leveraged buyout where the firm was incorporated in 1993 to buy out a product from a larger firm, and that product had been sold since 1971, we count the age as 25 years, not 3 years. Likewise, if a firm incorporated in 1994 to start a riverboat casino operation, but did not have a boat on the Mississippi until June 1996, then the age is only six months. We also include an indicator variable for any firm that reports R&D expenses (most firms do not report them because they are too small, so it is not practical to measure R&D intensity as a continuous variable).

*The Size of the Shareholder Base.* We measure the need for a more dispersed shareholder base by the number of shareholders in the firm when it is private (at year-end 1996). In some cases we know only a minimum bound on the number of shareholders, which we assume is close to the actual. For example, we might see from a 10-K that a firm has 10 investors who own 97 percent of the equity. Because the remaining fraction is less than 5%, we assume there

are 11 shareholders (there could be more but we estimate it at 11). If instead, the investors mentioned in the filing only own 90 percent of the firm, we assume there are three more investors, because if there were only two more investors they would be included as five percent investors in the statement of beneficial ownership. In many instances the company actually states the number of shareholders, so this problem is relatively minor. We define a shareholder as an entity that has the ability to vote independently. Thus, an ESOP with shares held by 200 employees counts as one shareholder, not 200. Likewise, a family trust that benefits a husband and wife counts as one shareholder, not two. In our sample of private firms, as well as in the SSBF survey, the number of shareholders in the dataset is close to the actual number of shareholders, while the number of shareholders reported on Compustat is often understated because many firms report only the number of shareholders of record, and this often counts all the shareholders at one brokerage as only one shareholder.

Because a large fraction of the firms have more than one class of stock, which could affect both the measurement of outside ownership and the number of shareholders, we also include a dummy variable that equals one if there are multiple classes of shares outstanding.

*Exit Strategies for VC/PE Investors.* If the IPO market is an important exit strategy, then we should see a greater tendency to go public among firms with substantial VC/PE investments. We create an indicator variable for firms with 25% or more outside financing from VCs or PE investors.

*Serendipitous information.* Subrahmanyam and Titman (1999)'s idea that this free information drives the going public decision can be tested by examining the behavior of firms in industries with extensive public contact. To capture this effect, we include an indicator variable that equals one if the firm belongs to any of the retail trade sectors. We also try a

specification with more general industry indicator variables that also include firms in the transportation and public utilities sectors, as well as retail firms.

### **C. Characteristics of the Private Firm Sample**

Summary statistics for the sample of 178 private firms are reported in Table 2, alongside those of four other comparison samples: (1) the small firms surveyed in the Federal Reserve Board's Survey of Small Business Finances (1998); (2) firms that completed IPOs in the period 1997-1999; and (3) the universe of nonfinancial public firms on Compustat; and (4) the set of firms in the same industry that are closest in sales. For each category, medians are reported on the top line, and means are reported in parentheses below.

Our sample of 178 private firms consists of relatively large firms. The median firm in our sample is about triple the size of the median Compustat firm, measured by assets, sales or employees. The difference in size is magnified still further when compared to recent IPOs. Firms in the SSBF are tiny in comparison to our private firms, as well as to the other three control samples. Of course, the SSBF is limited to firms with fewer than 500 employees by definition, while the matched sample is constructed to be close in size. The ranking of size is also not very surprising, given that the majority of our firms have issued debt in the public bond market. Bond offerings are typically well over \$100 million in face value, and as few of the firms are entirely debt financed, this means that most of our sample firms have assets well in excess of \$100 million. In contrast, many of the firms on Compustat are firms that completed IPOs on the Nasdaq in the last decade. Firms that completed IPOs within the past several years are not usually able to tap the public bond markets (see Helwege and Liang (1996)).

Our private firms are somewhat more profitable than the typical Compustat firm, but this likely is accounted for by industry, as they do not differ significantly from the matched sample.

Considering their size and profitability, there is little to suggest that these firms could not go public if they so desired. The firms that do IPOs in the time period under analysis have sharply lower operating profits and yet are able to sell equity. The profits for the firms in the SSBF seem extraordinarily high, especially in comparison to the IPO sample that is closest in size, but two factors may explain this statistic: (1) assets are sharply smaller than sales for the SSBF firms (see Cavalluzzo and Wolken (2002)) so scaling by assets makes the profitability seem higher than it would if scaled by sales (sales are about 8 times assets for this group); and (2) small business owners may not carefully consider the imputed labor costs of their own time in calculating profits.

The one obvious drawback to the private firms as potential IPO candidates is that they tend to be very highly leveraged. By nearly every metric, the typical capital structure found among private firms appears to be much more slanted toward debt than among other firms. To a certain extent, this is not surprising, as the private firms in our sample are mostly bond issuers. However, even compared to firms in the same industry that are similar in size, the use of debt is particularly high. One explanation is that these are firms owned by people who do not want to give up control of the firm, and have relied on debt to grow rather than issue equity and lose control. Another possibility is that despite their relatively high profit levels, the excessive amount of debt creates an overhang that prevents these firms from raising public equity. Interest coverage is typically low enough that distress might be a concern for potential equity investors. The one item that does not suggest the private firms are overextended in their use of debt is interest coverage, which though lower than that of Compustat firms is comparable to that of IPO firms.

A number of indicators suggest that our private firms tend to have fewer growth opportunities than the universe of public firms. These private firms have lower industry market-to-book values (which may only reflect valuations and not investment potential), and are less likely to

have positive R&D expenditures than the public firms on Compustat or the IPOs. They also have lower sales growth figures than these two samples. However, this largely reflects industry patterns (none of these measures are significantly different from the matching sample medians). Moreover, capital expenditures are not sharply lower in the private sample regardless of the comparison sample.

The private firms are less likely to pay out their profits to shareholders in the form of dividends. We should note that some of the private firms are limited partnerships, and make distributions to partners as required by law. We count these as dividends, so the fraction of private firms paying the normal type of dividends is even less than the 26.4% figure implies. The low dividends are undoubtedly related to the high leverage. Besides the fact that the private firms have less excess cash flow to pay out as dividends, most debt covenants for highly levered firms prevent the payment of dividends in ordinary circumstances.

Table 3 compares the breakdown by industry of the private firm sample to the three samples. Relative to the firms in the SSBF and Compustat, our private firms are more oriented toward manufacturing and the transportation and public utilities sector (the latter reflecting the dominance of cable and telecom firms in the private firm sample). The small firms in the SSBF are more likely to involve construction, retailing and services. The private firms in our sample are the least likely of the three types of firms to be in the service sector. For the firms that completed IPOs in 1997-1999, the vast majority of the firms in the service sector are in the 737 sector, which is largely software. Likewise, although services are a smaller part of the Compustat sample, about half of the service sector firms are involved in software. As many as a quarter of the SSBF services firms could be software and computing services business (only the two digit codes are available), but the majority of the service firms are not “high tech,” instead more often being beauty salons, dry cleaners, lawyers, doctors, auto repair shops and day care. The 178 private firms that operate in the service

sector are more likely to be casinos and movie theatres and are rarely involved in computers.

Table 4 reveals the ownership structure of our sample, dividing the owners into three groups: (1) inside ownership (management and/or family); (2) outside ownership (private equity, venture capital, and/or minority stakes held by other companies); and (3), employee stock ownership plan (ESOP) holdings. We count ownership as the fraction of voting shares. A large fraction of the sample of private firms has inside ownership that exceeds 50 percent of shares, but 88 firms have inside ownership of less than 25%, including 31 firms that have no inside ownership whatsoever. The differences in inside ownership are mirrored by a variety in size and scale of outside ownership stakes. More than forty percent of the sample (75 firms) has no outside ownership stake. On the other end of the spectrum, however, 82 firms are majority-owned by venture capital, private equity, or other outside investors. Only 12 firms report shareholdings of an ESOP and most have relatively low ownership stakes. Nearly a quarter of the sample of private firms has multiple classes of shares outstanding, which often can be converted into voting shares under the appropriate circumstances. Many of these classes are associated with private equity investments.

As for the number of shareholders, the vast majority of the private firms have fewer than 15 shareholders and more than a third have fewer than a half dozen shareholders. Table 2 reports median and mean shareholder figures for the four samples, and these indicate that both our private firms and the mainly private set of firms in the SSBF have very few shareholders. Nonetheless, 36 of the 178 private firms have a shareholder base greater than 50, and the fact that the largest number of shareholders in this sample is more than 84,000 suggests that going public is one way, but not the only way, to obtain a dispersed shareholder base.

#### **D. Multivariate Logit Estimations of the Probability of Going Public**

Thus far, we have merely compared summary statistics of our sample to those of four other

relevant samples. In order to determine which factors affect the decision to go public, we estimate the likelihood of being a private firm versus a public firm using two types of multivariate logistic regressions (logits), the results of which are reported in Tables 5 and 6. The dependent variable in this set of estimations equals one if the firm is a public firm, or in the case of Table 6, succeeds at or attempts to become a public company, and zero if it is a private firm. In Table 5, the logit is estimated by pooling our private sample with the nonfinancial public firms found in Compustat. In Table 6, the comparison is made strictly within the sample of 178 firms. In the latter case, we approach the definition of going public in two ways: (1) we compare any firm that indicated an interest in doing an IPO (filing an IPO at any point between 1992 and 1999 or completing an IPO between 1997 and 1999) to the rest of the private sample; and (2) we compare any firm that filed for an IPO or completed an IPO after December 1996 to those private firms that never indicated an interest in going public.

The results of the logit estimations shown in Table 5 are largely consistent with the univariate analysis in Table 2, in that the significant variables in the logit have the same signs as indicated by the summary statistics. However, the only significant variables are size, leverage and the rating indicator. Leverage and credit ratings indicate that a debt-skewed balance sheet makes a firm much more likely to be private. The fact that the bad news variable is not significant despite the importance of leverage and capital structure suggests that the main difference in capital structures between the two samples owes to the avoidance of outside equity in the private sample. Although many theories indicate that growth opportunities will be important in the decision to go public, there is no evidence from this estimation that capital expenditures, R&D or sales growth are significantly different between our private firms and the public firms, once size and leverage are considered. Firms in the retail sector have no obvious propensity to go public or stay private

according to the estimates in Table 5, despite the differences between industries in Table 3.

Of our sample of 178 private firms, 42 revealed a desire to be public companies. These 42 firms include 27 companies that completed IPOs between January 1997 and December 1999, 6 companies that filed to go public between 1997 and 1999, and 9 that filed with the SEC to do an IPO prior to December 1996. Did these firms differ systematically from the other private firms that made no plans for going public?

In the first two columns of Table 6, we define going public as being one of the 42 firms that went public or planned to go public near December 1996 and compare these in a logit estimation to the 136 that seemed content to remain private. In the first column, we measure the desire for control rights by the indicator variable for whether the firm is completely insider controlled (and has fewer than 15 shareholders). This variable is highly negatively correlated with the indicator variable for more than 25% ownership by outsiders, so we only include the outside equity variable in the second specification. In the last two columns of Table 6, we are more restrictive about how we define the desire to go public. In those estimations, the dependent variable is one for the 6 firms that filed to go public and the 27 firms that completed IPOs after December 1996, while the 136 firms that receive a zero for the dependent variable are the ones that never filed to go public (which means the 9 firms that filed before 1997 are eliminated from the analysis and the estimation sample drops from 178 to 169). We find that the results are quite similar in the two sets of estimations, although the slightly smaller sample in the latter experiment sometimes results in less significance.

Compared to Table 5, what is most striking about the results in Table 6 is how unimportant capital structure is. While leverage, ratings and interest coverage were significantly different in the univariate analysis and the first two were significant in Table 5, none of these are significant in Table 6. Although the bad news indicator is significantly negative in Table 6, suggesting that a debt

overhang can hamper an IPO, we no longer see the tendency for highly leveraged firms to avoid IPOs.

The main difference in the specification of the models between Tables 5 and 6 is that the latter includes information on ownership. We do not include this information for our public firms because the data collection is difficult and because insider holdings are undoubtedly lower after an IPO than before (which would lead to uninteresting results). However, among our private firms there is considerable variation in ownership and this factor appears to be a major reason why leverage is no longer significant in the estimation. One reason for having a highly leveraged balance sheet is that a growing firm that cannot fund its growth with retained earnings and which avoids outside equity issuance will rely much more heavily on debt financing than firms that are willing to use external equity. Thus, for some firms high leverage occurs because of a strong desire to maintain control rights by the entrepreneur. Once we include proxies for the desire to maintain control, we find that leverage alone does not matter (although the debt overhang proxied for by the “bad news” indicator still appears to be an issue). Table 6 suggests that managers who place a great value on control rights are less likely to take their firms public. The inclusion of the outside equity variable also leads to a loss of significance for the number of shareholders in the logit, which suggests that the diversification motive for going public is not a dominant factor.

In the models where we include an indicator variable for firms that have 25% or more outside equity, the pseudo R-squared rises sharply. While this variable may simply be a more precise measure of the desire to maintain control, it is also possible that it captures an additional effect related to VCs and PE investors. The result is consistent with the idea that VC/PE investors play a certification role that makes an IPO more likely, although the certification by the ratings agencies (in the form of an investment-grade rating) is not significant, and we see no evidence that

younger firms have trouble going public. Likewise, the significance of the outside equity indicator is also consistent with Pagano and Roell's "overmonitoring" theory, but if this were true one would expect that the number of shareholders and capital expenditures would be significant variables. The result is most consistent with the view that the VC/PE investors have a greater interest in taking the firm public, reflecting the usefulness of the stock market as an exit strategy (Black and Gilson (1998)). These results are consistent with the evidence in Cao, Field, and Hanka (2003) that shows VCs sell a disproportionately high amount of shares at the lockup expiration.

We also find that size, age, and profits are usually significant variables. Larger firms are more likely to go public, but older, more profitable firms are not. To a certain extent, these seem to be contradictory results, as older firms are often thought of as both larger and more profitable. However, in this sample most of the firms are already fairly large. Within this group, the very largest are more likely to go public, perhaps for the same reason UPS stated – that they wanted a currency with which to pay for stock swap mergers/acquisitions - or because maintaining control rights in such a large firm is nearly impossible. Likewise, most of the firms in the sample are already fairly mature, but some have been operating only a few years. The fact that younger firms are more likely to go public highlights the substantial differences in reputation effects in the U.S. and Italian IPO markets, as PPZ find that young firms less often do IPOs.

Except for industry market to book, the variables measuring growth opportunities (i.e., R&D, sales growth, and capital expenditures) are insignificant. Industry market to book is usually significant, but in light of these other results it should be more sensibly interpreted as evidence that firms are influenced by the price at which they would sell equity. That is, windows of opportunity for equity issuance seem to matter.<sup>9</sup>

These estimates provide no support for the idea that firms in industries with a high public

presence go public more often. Expanding the definition of industries to include telecommunications or utilities (in results not shown) has no impact. These results are not consistent with the idea that an IPO offers advantages to firms with serendipitous information.

### **E. Corporate Events After 1996**

So far, we have seen little evidence that firms use the IPO as the first step in the stage of selling the firm (e.g., the number of shareholders has no effect in Table 6). Another piece of evidence concerning the IPO as the first step in the sale of the firm is shown in Table 7. According to Zingales (1995) and Mello and Parsons (1998), we should observe few mergers among the 145 firms that do not attempt or complete an IPO during 1997-1999 because they should undertake an IPO before being taken over. About 20 percent of the firms in the sample tried or succeeded in going public, which is just slightly less than the fraction of the 145 firms that were subsequently taken over. In addition, a few of the firms that had tried IPOs prior to 1996 were taken over during 1997-1999, making the merger route more popular than the strict IPO route. While it is possible that eventually many more of the IPO firms later become takeover targets, or that those that attempted an IPO after 1997 will attempt it again and then be taken over, the figures in Table 7 indicate that the frequency of IPOs followed by mergers is no greater than that of mergers that occur without IPOs.

Many of the firms taken over in mergers had private equity investors: 23 of the 37 mergers (including the three that had previously attempted IPOs) involved firms that had at least 25% outside equity ownership. This is a significantly higher fraction than the comparable figure for firms that remained private or went bankrupt. Given the significant impact of outside equity owners in the logit reported in Table 6, we conclude that VC and PE investors are more likely to undertake a merger or IPO than founders and family. A benefit to either of these exit strategies is that VC/PE

funds can obtain a third-party valuation of their investments, which is undoubtedly helpful in establishing a credible measure of returns for the LPs.

#### **IV. Conclusion**

The propensity to go public is quite high in the U.S., but many firms remain private, even among the larger firms. Little is known about the many private firms in the U.S., or indeed in virtually any country, but in this study we are able to investigate one group of private firms because they are required to file with the SEC. We consider firms that are private as of December 1996 to determine how they differ from public firms and to examine which of the private firms desire to become public firms (27 of the private firms do go public after 1996). As a reference point, we compare summary statistics on these private firms with four other groups of firms: IPOs; public firms on Compustat; public firms on Compustat in the same industry that are closest in sales; and firms surveyed in the Federal Reserve Board's 1998 Survey of Small Business Finance.

Compared to any of these groups, the private firms in our sample are quite large and are much more leveraged. By several measures, such as sales growth, R&D and industry market to book, our private firms appear to have fewer investment opportunities. However, they are comparable to public firms on Compustat in terms of profits and capital expenditures. In multivariate logit analysis though, only capital structure and size differ between the public Compustat firms and our private firms.

Among these private firms, we observe a sizeable minority of firms that either go public after 1996 or otherwise indicated a desire to issue equity to the public. There are 27 firms that complete IPOs after 1996 and another 6 that file to do IPOs between 1997 and 1999. Nine other firms attempted IPOs prior to 1996 but withdrew from the market. We find that these 42 firms differ

sharply from the remaining private firms in their ownership structure. That is, the 136 firms that never attempt an IPO are more likely to be closely held by the management of the firm or family members. We interpret this as evidence that the desire to maintain control rights is a major reason for remaining private.

Firms with significant equity stakes held by outsiders (private equity investors and venture capitalists) are more likely to attempt an IPO. We also find that mergers (without an IPO) occur more often when these investors are present in the firm, suggesting that the motivation for an IPO may be to obtain a valuation for the private equity fund's investments (Black and Gilson (1998) and Myers (2000)). We do not find a similar impact for the number of shareholders, and little evidence that the desire to change the shareholder base or diversification is a major factor in going public.

**TABLE 1**  
**Reasons for Filing with the SEC**

Reasons for filing with the SEC are determined by reading SEC filings that include data near year-end 1996 for the sample of 178 private firms.

Reason	Number of Firms	Percentage of sample
Firm has public (or widely held) debt	156 firms	88%
and files 10-K reports	104 firms	59%
that was issued close to December 1996	52 firms	29%
Firm has many shareholders	22 firms	12%

**TABLE 2****Selected Firm Characteristics: Private Firms, Small Firms, IPO Firms, Public Firms on Compustat and a Size/Industry Matched Set of Public Firms**

Medians, except where noted; means are in parentheses. Industry and size matched firms are firms in the same four digit industry (when available, otherwise three digit industry) that are closest in sales. \* denotes medians of private firms are significantly different from the comparison sample (Compustat, IPOs, or matches, not SSBF firms) at the 10% or lower level of significance or in the case of r&d or dividends, that a binomial test of differences in proportions is significantly different at the 10% or lower level of significance. Data for firms in the Survey of Small Business Finance are taken from Cavalluzzo and Wolken (2002). IPOs from 1997-1999 are identified in SDC and data are taken from Compustat for the year of the IPO.

	Private Firms	Survey of Small Business Finance	Firms that Completed IPOs during 1997-1999	Nonfinancial Firms on Compustat	Industry and Size Matched Firms
No. of Firms	178	3561	1061	5717	178
Total Assets (mm \$)	293 (682)	.1 (.6)	72* (290)	83* (1091)	250* (441)
Total Sales (mm \$)	285 (1076)	.25 (1.6)	38 (198)	90* (978)	270 (592)
Employees	1920 (6880)	4 (11.8)	285* (1029)	559* (5426)	1544 (4204)
Age	35 (49.5)	9 (11.4)	5 (9)	n.a.	41 (52.7)
Number of shareholders	10 (913)	1 (6)	239* (2606)	1293* (8638)	1035* (2823)
Profitability (over assets)	12.9% (13.3%)	23% (151%)	2.6%* (-5.2%)	11.0%* (0.0%)	13.0% (10.7%)
Profitability (over sales)	10.7% (-676)	n.a.	4.1%* (-253%)	9.1%* (-3.1%)	10.2% (1.8%)
Leverage (long-term debt over assets)	60.2% (67.9%)	n.a.	1.7%* (11.7%)	11.7%* (19.0%)	22.0%* (25.8%)
Leverage (long and short-term debt over assets)	65.9% (72.7%)	62% (204%)	4.0%* (15.2%)	20.5%* (53.9%)	31.3%* (31.2%)
Interest Coverage (EBITDA over interest expense)	1.8 (21.9)	n.a.	2.98 (68.2)	5.4* (99.8)	5.1* (217.3)
Industry Market-to-Book	1.4 (1.6)	n.a.	2.2* (2.3)	1.6* (1.8)	1.4 (1.6)
Capital Expenditures/Assets	5.1% (7.0%)	n.a.	4.5% (7.6%)	4.9% (7.3%)	5.9%* (7.8%)
R&D (% with R&D>0)	25.8%	n.a.	51.4%*	44.0%*	26.4%
Pays Dividends (% of Firms)	26.4%	n.a.	13.5%*	31.0%*	44.4%*
Sales Growth (over past year)	8.4% (45.8%)	n.a.	79.6%* (398.9%)	11.6%* (93.9%)	8.4% (17.6%)

**TABLE 3**  
**Industry Distribution of the Private Firms**  
**Compared to Small Firms, IPOs and Firms on Compustat**

\* denotes that a binomial test of differences in proportions indicates significantly different proportions in industries of private firms compared to firms on Compustat or IPOs (but not SSBF firms) at the 10% or lower level of significance. Data for firms in the Survey of Small Business Finance are taken from Cavalluzzo and Wolken (2002). IPOs from 1997-1999 are identified in SDC and data are taken from Compustat for the year of the IPO

Industry	SIC Code Range	Sample of Private Firms  N=178	Firms in the 1998 Survey of Small Business Finances  N=3561	Firms that Completed IPOs during 1997-1999	Public Firms on Compustat
				N=1061	N=5717
Agriculture, Forestry, and Fishing	0100-0971	0%	0%	0.7%	0.4%
Mining	1000-1499	1.1%	0.4%	1.0%	5.0%*
Construction	1520-1799	1.0%	10.8%	0.8%	1.5%
Manufacturing	2000-3999	47.2%	11.6%	29.0%*	50.6%
Transportation and Public Utilities	4011-4999	14.0%	4.3%	10.4%*	10.1%*
Wholesale Trade	5012-5199	8.4%	7.4%	3.7%*	5.2%*
Retail Trade	5200-5999	11.8%	21.1%	6.8%*	7.9%*
Services	7011-8999	16.9%	44.3%	47.7%*	19.4%

**TABLE 4**  
**The Ownership Structure of Private Firms**

Percent of shares outstanding is based on filings of beneficial ownership in SEC filings except in one case where it is based on a news story. Percentages are calculated as a fraction of the voting power of the shares outstanding, excluding shares that might arise in the future as a result of options. ESOP are employee share ownership programs. Venture capital, private equity, and other companies are mostly described as such in the SEC filings, but in some cases are identified as VC or PE from internet websites. Management stakes are identified as such when the equity position belongs to a name that is identical to the name of a person listed as a manager of the firm in the SEC filing, except when the person is a director of the company working for a VC or PE investor.

Percentage Holdings	Inside Ownership (Management Alone, Family alone, or Combination)	Outside Ownership (Venture Capital, Private Equity, or Other Company)	ESOP
None	31 firms (17%)	75 firms (42%)	166 firms (93%)
0-25 Percent of Shares	57 firms (32%)	8 firms (4%)	5 firms (3%)
25-50 Percent of Shares	18 firms (10%)	13 firms (7%)	2 firms (1%)
50-100 Percent of Shares	72 firms (40%)	82 firms (46%)	5 firms (3%)
Mean Percent Holding	41%	43%	3%
Median Percent Holding	26%	39%	0%

**TABLE 5****Logit Estimates of the Probability of Being Public (n=5717) vs. Being Private (n=178)**

Dependent variable is 1 if the firm is public at year-end 1996, zero otherwise. Profitability is EBITDA/sales; interest coverage is EBITDA/interest expense; r&d indicator is one for firms with positive r&d, zero otherwise; sales growth is the percent change in sales from 1995 to 1996; bad news indicator is one for firms that had negative profitability and negative growth and for Sabreliner; family/founder indicator is one if the firm is controlled solely by family or management and there are fewer than 15 shareholders; outside ownership indicator is one if the equity held by outsiders is 25% or more; multiple share class indicator equals one if the firm has more than one type of stock with voting rights. \* indicates significance at the 10% or lower level. Standard errors are White corrected.

	(1)	(2)
Log of Sales	-0.32* (0.05)	-0.31* (0.05)
Profitability	-0.0003 (0.001)	-0.0003 (0.001)
Leverage (long-term debt/assets)	-2.34* (0.84)	-2.36* (0.85)
Bad news indicator	0.10 (0.20)	0.11 (0.20)
Interest Coverage	0.0002 (0.0002)	0.0002 (0.0002)
R&D Indicator	0.27 (0.26)	0.30 (0.27)
Investment-grade Indicator	1.64* (0.46)	1.63* (0.46)
Capital Expenditure/Assets	1.14 (0.89)	1.10 (0.89)
Sales Growth	0.0004 (0.002)	0.0004 (0.002)
Retail Industry Dummy	0.07 (0.25)	-
Retail, Telecom, or Utility Industry Indicator		0.10 (0.20)
Industry Market-to-Book	0.22 (0.31)	0.21 (0.31)
Constant	5.11* (0.66)	5.08* (0.65)
Log-likelihood	-654.32	-654.00
P-value for model	.0000	.0000
Pseudo R-squared	16.4%	16.4%

**TABLE 6****Logit Estimation of the Likelihood of Going Public vs. Remaining Private**

Dependent variable in columns (1) and (2) is 1 if the firm completed/attempted an IPO near Dec. 1996, zero otherwise, while in columns (3) and (4) it is 1 if the firm completed/attempted an IPO after 1996, zero otherwise (9 firms that attempted IPOs before 1996 are dropped). Profitability is EBITDA/sales; interest coverage is EBITDA/interest expense; r&d is an indicator variable for firms with positive r&d; sales growth is the percent change in sales from 1995 to 1996; bad news indicator is one for firms that had negative profitability and negative growth and for Sabreliner; family/founder indicator is one if the firm is controlled solely by family or management and there are fewer than 15 shareholders; outside ownership indicator is one if the equity held by outsiders is 25% or more; multiple share class indicator equals one if the firm has more than one type of stock with voting rights. \* indicates significance at the 10% or lower level. Standard errors are White corrected.

	Attempt/complete an IPO (n=42) or not (n=136)		Attempt/complete an IPO after 12/1996 (n=33) or not (n=136)	
	(1)	(2)	(3)	(4)
Log of Sales	0.41* (0.18)	0.36* (0.19)	0.37* (0.21)	0.32 (0.21)
Log of Age	-0.46* (0.18)	-0.42* (0.18)	-0.35* (0.19)	-0.34* (0.19)
Profitability	-0.01* (.002)	-0.01* (.002)	-0.01* (.002)	-0.01* (.003)
Leverage (LT debt/assets)	0.63 (0.40)	0.50 (0.49)	0.63 (0.45)	0.52 (0.55)
Interest Coverage	0.005 (0.005)	0.01 (0.005)	0.01 (0.005)	0.01* (0.005)
Investment-grade Indicator	-0.96 (1.32)	0.32 (1.21)	-0.48 (1.40)	0.83 (1.19)
R&D indicator	0.48 (0.47)	0.51 (0.48)	0.37 (0.50)	0.44 (0.52)
Capital Expenditures (Cap. Ex. Over Assets)	1.90 (2.56)	3.59 (3.07)	0.55 (2.70)	1.76 (3.40)
Sales Growth	0.02 (0.10)	-0.04 (0.10)	0.04 (0.10)	-0.02 (0.10)
Bad News indicator	-1.08* (0.50)	-1.20* (0.54)	-1.44* (0.64)	-1.62* (0.65)
Industry Market-to-Book	0.50* (0.26)	0.45* (0.26)	0.43* (0.24)	0.38 (0.24)
Retail Trade Industry	0.54 (0.54)	0.37 (0.57)	0.16 (0.70)	-0.04 (0.74)
Family/founder indicator	-2.13* (0.88)	-0.06 (1.15)	-1.80* (0.86)	0.34 (1.06)
Outside Ownership indicator		2.17* (0.75)		2.28* (0.67)
Number of shareholders (log)	-0.16 (0.10)	0.03 (0.13)	-0.19* (0.11)	0.01 (0.15)
Multiple Share Class indicator	0.48 (0.48)	0.49 (0.49)	0.60 (0.53)	0.63 (0.53)
Constant	-2.73* (1.39)	-4.78* (1.68)	-2.75 (1.60)	-4.85* (1.82)
Log-likelihood	-80.66	-76.04	-69.46	-66.33
P-value for model	.0022	.0027	.0017	.0002
Pseudo R-squared	17.1%	21.8%	16.8%	21.7%

**TABLE 7**  
**Post 1996 Events for the Sample of Private Firms**

<b>Outcome</b>	<b>Number of firms</b>
Attempts or completes IPO after 12/1996	33 firms (19%)
Is acquired after 12/1996	34 firms (19%)
Goes bankrupt or defaults on debt	8 firms (4%)
Remains private	99 firms (56%)
Mergers among firms that attempted an IPO prior to 12/1996	3 firms (2%)
Defaults among firms that attempted an IPO prior to 12/1996	1 firm (1%)
Total firms	178 firms (100%)

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## Endnotes

<sup>1</sup> Goldman Sachs went public in May 1999 after 130 years of operating as a private firm while UPS went public in November 1999 after 92 years as a private firm.

<sup>2</sup> See Loughran, Ritter and Rydqvist (1994) for a comparison of IPOs in various countries.

<sup>3</sup> The SEC states on its webpage that firms with 500 or more investors and \$10 million or more in assets are required to file annual and quarterly reports.

<sup>4</sup> The Financial Times (July 23, 1999) reported “James Kelly, chairman of UPS, said the public stock generated from the offering would give his company "flexibility" in negotiating future acquisitions since both shares and cash can be included in a deal.”

<sup>5</sup> As an example, Crain Industries, a plastics manufacturer acquired by private equity investors in the mid-1990s had exactly ten filings with the SEC on Edgar between 1996 and 1998. The tenth and last filing was a 15-15D form, indicating the suspension of its duty to report. For firms that file with the SEC because of public bonds, the requirement to file could end by refinancing with a bank loan or with a bond subscribed to by a small number of investors.

<sup>6</sup> For example, we include a firm partly owned by Craig McGraw, as it seems to have no relation to other firms he has ownership stakes in. But we delete firms that are subsidiaries of holding companies when the holding company also owns several other firms, of which one is public.

<sup>7</sup> An example of this first type of firm in our sample is Sprint Spectrum, a PCS telecommunications provider owned by four public companies, of which none had more than 40% ownership. An example of the second type of firm is Clark Materials Handling Corp., which had been owned by Terex, a public company, but was never an independent firm with its own stock price. Other firms in the sample, however, were more standard private firms—starting as an independent entity and continuing in existence without an equity IPO and remaining private as of December 1996. Allbritton Communications, which owns radio stations, and Cinemark, a movie theater chain, are examples of such firms.

<sup>8</sup> Most of our outside investors are private equity investors, who often serve as directors of the firm. These firms typically will not make an investment in the firm without also gaining a substantial amount of control. See Fenn, Liang and Prowse (1997) for a discussion of the role of private equity investors in the firm.

<sup>9</sup> We should keep in mind that the period 1996-1999 was one with extraordinarily high equity valuations in many sectors of the market.