

# Financial Visibility and the Decision to Go Private

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This paper documents that a large fraction of the companies going private from 1990 to 2004 were fairly young IPO firms that chose to revert back to their original organizational form, and therefore to a more concentrated ownership structure. Consistent with the findings of the earlier literature examining leverage buyouts (LBOs), we find strong support for Jensen's free cash flow hypothesis, suggesting that one key reason for firms deciding to go private is to mitigate agency problems between insiders and outside shareholders. However, our evidence also reveals that firms with small growth in analyst coverage and institutional ownership, and low stock turnover were more likely to go private and opted to do so sooner. Thus, another potential reason for restructuring by these IPO firms may be their inability to enjoy the benefits of public ownership that come from financial visibility because of their failure to attract a critical mass of security analyst coverage and investor interest.

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# **Financial Visibility and the Decision to Go Private**

## **1. Introduction**

In the 1980s, the corporate sector witnessed a boom in leverage buyout (LBO) and going-private activities. After a number of high-profile bankruptcies, interest in LBOs cooled off considerably in the early half of the 1990s. Buyout activity, however, has begun to gradually reemerge over the last few years with the total volume of LBO and going-private transactions reaching \$53 billion in 2004. While the recent pickup in LBOs has not yet climbed to the enormous volume of the 1980s, the renewed activity suggests that interest in buyout activities is again gathering steam.

Several reasons have been proposed in the literature for the proliferation of LBOs in the 1980s. Holmstrom and Kaplan (2001) and Kaplan (1997) investigate various explanations for these buyout activities, ranging from excess capacity in the corporate sector to conglomeration. The general consensus among researchers is that buyouts are a mechanism for disciplining deficient corporate organizations. The most often accepted view is that LBOs serve to realign the interests of stockholders and management insiders. Jensen (1986) argues that agency conflicts between insiders and equity holders are more prevalent in low-growth stable firms with the potential of generating substantial cash flows (the so-called “free cash flow” hypothesis). According to this hypothesis, managers of these firms are more likely to squander these cash flows on negative net present value (NPV) projects. LBOs mitigate these agency conflicts by enabling managers to own a larger stake in the firm and enhance managerial discipline through the high-debt service imposed on the firms.

The LBO mania of the 1980s collapsed under the weight of excess risk taking that drove investors and creditors away from the market. Kaplan and Stein (1993) document that default

was very rare among the first wave of large firms that chose to engage in LBOs between 1980 and 1984. By the end of the decade, however, excess speculation and overpriced deals became quite pervasive, fueled in part by the growing junk bond market. The default rate among large LBO deals jumped to over 30 percent during the latter half of the 1980s. With the bankruptcy of many LBO firms and the demise of the junk bond market that led to the failure of Drexel Burnham Lambert, buyout activities slowed down considerably in the early 1990s.

Facing new more stringent risk-weighted capital requirement rules and more intense regulatory scrutiny, commercial banks have also contributed to the declining interest by refusing to finance buyout deals. Kaplan (1997) offers another compelling reason for the sluggish volume of LBO deals in the early 1990s, arguing that principals of the firms were able to mitigate agency conflicts internally without the need of engaging in LBOs. He argues that in this era of increased and more proactive institutional ownership, it is much easier to discipline firm management and monitor corporate boards. Kaplan also argues that managerial compensation is increasingly tied to performance as a significant portion of a CEO's pay is awarded in stock (e.g., Murphy (1999)).

Despite the stronger monitoring and increased reliance on equity-based compensation, going-private deals are making a comeback over the last ten years. The recent resurgence in firms seeking to go private has been clearly aided by private equity firms that have raised record funds over the last few years. This paper analyzes going-private transactions between 1990 and 2004. We document that a significant fraction of the firms electing to go private went public only about five years before choosing to revert back to private ownership structure.

Why are these new issuers abandoning public markets? It is reasonable to expect that agency conflicts may have again compelled some of these firms to go private. Our empirical

analysis strongly supports Jensen's free cash flow hypothesis. Thus, recent LBO takeovers continue to be mechanism for mitigating agency problems associated with undistributed cash flows. However, this paper highlights that another critical reason behind the decision to go private may be the inability of these new firms to attract a critical mass of financial visibility. We find that IPO firms failing to attract and maintain an adequate scale of financial interest (measured by analyst coverage, institutional ownership, and stock turnover) are more likely to go private and opt to do so sooner. This finding is consistent with the premise that financial visibility in public markets is a critical factor in the decision to change their organizational form.

The rest of the paper proceeds as follows. Section 2 formulates our market visibility hypothesis. Section 3 briefly summarizes LBO and non-LBO going-private activities over the last 25 years. In Section 4, we describe our data sources and sample construction. Section 5 develops a proportional hazard model for analyzing the decision to exit the public markets. In section 6, we present our empirical findings. We conclude in Section 7.

## **2. The Financial Visibility Hypothesis**

The LBO boom of the 1980s demonstrated that these transactions are an important restructuring tool for the corporate sector. Corporate raiders and buyout specialists extracted value through reorganization, seeking to streamline sluggish low-growth public firms to more efficient nonpublic companies. The potential for reorganization gains was particularly discernible in large, mature and more complex firms. In the 1990s, however, improvements in the corporate governance and better management compensation schemes diminished the incentives for changing the capital structure of corporations (Holmstrom and Kaplan (2001) and

Kaplan (1997)). Thus, if there is only limited potential for LBOs to improve firm performance by reorganizing corporate structure, why are these deals appearing to be making a comeback?

The answer to this question may in part lie in the nature of the companies that are choosing to go private. A large fraction the LBO targets after 1990 were IPO firms. While reorganization incentives are still important, investors and insiders taking these young firms private may be motivated by other factors. Typically, younger IPO firms have high insider ownership concentrated in the hands of founders and venture investors.

In the introduction, we proposed the “*financial visibility*” hypothesis. The premise of this argument is that young firms are choosing to exit the public market because they have failed to attract an adequate level of investor recognition. Despite being solid performers, often outshining their peers, these firms appear to have been overlooked by financial analysts. Having only gone public a few years before, it is very natural for IPO companies to be more cognizant of the costs and benefits of a public listing. The importance of analyst information is documented in a study by Krigman, Shaw and Womack (2001) that shows IPO companies tend to switch lead underwriters to improve research coverage. Investment analysis is also closely related with institutional ownership, as more visible firms are likely to attract greater investor interest (O’Brien and Bushan (1990) and Falkenstein (1996)).

The information intermediary role played by security analysts can impact firms in a number of ways. Inadequate analyst coverage contributes to investor uncertainty, resulting in an illiquid stock vulnerable to greater mispricing. Close monitoring by investment analyst also helps mitigate agency conflicts arising between owners and managers of the firm (Jensen and Meckling (1976)). Failure to attract adequate analyst coverage therefore can effectively lower the product value and ultimately the franchise value of the firm. Chung and Jo (1996) document a

positive relationship between analyst following and firm value (measured by Tobin's  $q$ ). The principal benefit of public listing is easier access to debt and equity markets. Without proper analyst coverage, however, access to capital markets becomes more difficult and costly (e.g., Bowden, Chen and Cheng (2004)). Lower equity prices can also adversely affect their ability to issue public debt at a fair rate.

A recent paper by Boot, Gopalan, and Thakor (2005) stresses the importance of public ownership liquidity. The paper develops a theoretical model that illustrates the benefits and costs of public ownership. On one hand, public ownership enhances liquidity, increasing the supply of capital. On the other hand, because the shareholder base can change unexpectedly, public firm managers face a greater likelihood of interference. The predictions of this theoretical model are consistent with our market visibility hypothesis. Firms with lesser investor participation will have greater incentives to go private, while greater investor participation will encourage firms to remain public or go public if they are privately owned.

The collapse of Internet stocks in 2000 and the highly publicized corporate scandals that followed have brought about several new changes in the capital markets. With the enactment of the Sarbanes-Oxley Act of 2002 (SOX), newly listed companies have to deal with more rigorous regulatory compliance rules. SOX introduced more accountability from audit committees and top executives, resulting in increased expenditures on third-party auditors and lawyers.<sup>1</sup> Recent studies by Leuz, Triantis, and Yue Wang (2004), Marosi and Ziad Massoud (2004), and Engel,

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<sup>1</sup>The Sarbanes-Oxley legislation requires firms to increase the number of independent directors serving on the audit committee. This new rule is more costly to small firms because directors must be indemnified against lawsuits by buying insurance.

Hayes and Wang (2005) argue that SOX is an important catalyst in the recent deregistering of many small public firms.<sup>2</sup>

### **3. Overview of LBOs and Non-LBOs Going-private Transactions, 1980-2004**

Before we formally investigate the decision to go private, we briefly examine the long-term experience of US corporate leveraged buyouts from 1980 to 2004. Figure 1 traces the volume of LBO activity over the entire period. SDC considers a merger transaction a LBO when the investor group includes management and is identified as such in the financial press. The aggregate yearly volume presented in the figure represents the value of all transactions that were completed or are pending, but excludes any announced deals that were eventually withdrawn because they were rejected by the board of the target firm.<sup>3</sup> The figure illustrates the boom cycle in buyouts in the latter half of the 1980s followed by the subsequent collapse of the LBO market in the early 1990s. Buyouts showed more signs of life more lately with the volume of completed deals surpassing the \$50 billion level in 2004.

Figure 1 also reveals that an increasing share of the LBO volume stems from firms that had an initial public offering.<sup>4</sup> The rise in the number of IPO firms choosing to go private is not

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<sup>2</sup>Many of the companies that deregister (or go dark) essentially continue to trade on secondary exchanges. Buyouts and other going-private transactions examined in our paper are different than the self tender offers analyzed in the going-dark literature because they are absorbed by the acquiring firm and their stock ceases to exist.

<sup>3</sup>In addition to dropping withdrawn LBO deals, we excluded a handful of so-called buyout deals with apparent discrepancies. For instance, some of these firms continued trading on a major stock exchange after being acquired. Aggregates presented in Figures 1 and 2 are based on the value of the transaction. The overall level of the aggregates may actually underestimate the actual level of LBO and going-private activity because SDC does not report the value of the deal for many of the smaller targets.

<sup>4</sup>We use the SDC New Issues database to identify companies that went public starting in the early 1970s. The remaining firms not included in the SDC database represent more established companies that went public before the 1970s or resulted from other corporate actions such as mergers and acquisitions.

totally unexpected. After all, new issues accounted for roughly 10 percent of the total market capitalization in the 1980s, compared to 20 percent during the 1990s. However, the surge in IPO firms seeking an LBO cannot be explained alone by this compositional shift. The share of LBO volume accounted by IPO targets jumped from 8 percent in the 1980s to close to 34 percent in the period 1990-2001 (Table 1). The proliferation of IPO targets is therefore a symptom of the changing character of the buyout market in the 1990s.

Figure 2 traces the volume of non-LBO going-private transactions over the same period. In contrast to leveraged buyouts where typically management and a group of investors use debt financing to acquire a target firm, these going-private transactions resemble a standard merger where the acquirer is simply a nonpublic company. As a result, non-LBO going-private transactions may be driven by the same factors that influence the M&A market. The rise in volume of going-private transactions in the latter half of the 1990s corresponds to a surge in M&A activities during this same period. The figure again reveals a similar increased propensity to go private by IPO firms that account for roughly 39 percent of the total volume.

#### **4. Data and Sample Selection**

The large number of IPO firms offers us a useful framework to investigate the recent wave of LBO and other going-private deals. To analyze the reasons behind the decision of IPO firms to go private, we collected a complete sample of these transactions from *Thompson Financial Securities Data Corporation* (SDC) M&A database. The sample selection focused on completed deals in which a public firm was a target in a LBO or was acquired and became a private company from January 1, 1990 to December 31, 2004. Although SDC includes LBO and non-LBO going-private indicators that flag these events, our selection process went through a



number of additional steps to ensure that the final sample was bona fide. The SDC list of transactions was matched with the company header information available from the *Center for Research Securities Prices* (CRSP) that provides a historical profile of all firms listed on major stock exchanges. Using CRSP information, we deleted from our sample any going-private deal that had a delisting code of 100 (indicating active issues) or any deal that was dropped from the exchange (delisting codes in the range 500 – 591).<sup>5</sup>

As shown in Table 1, our search identified 449 LBO targets and 306 non-LBO going-private transactions. This list of target firms was further trimmed down because our analysis focuses only on those firms that: (a) went public after 1988, and (b) had available financial information and analyst coverage. To identify IPOs, we use a list of new issues from SDC. We obtained firm analyst coverage from I/B/E/S, and company and stock financial information from Standard and Poor's Compustat and CRSP databases. Table 2 provides a breakdown of the final sample consisting of 126 firms with financial information (78 LBO targets and 48 non-LBO firms that were acquired by nonpublic companies). Of these 126 IPO firms, 106 were followed by security analysts.

To more effectively study the decision to go private, we also selected a control group of IPO companies that remained public throughout the period. This control sample was chosen by matching each LBO and non-LBO going-private firm with all active IPO firms that were in the

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<sup>5</sup>The codes between 500 and 591 typically correspond to negative delistings, that is, cases where the firm is dropped from the exchange because it failed to meet specified minimum listing criteria. Most delisted securities result in a total loss to shareholders. Our analysis excludes any going-private transaction that eventually had a negative delisting because many of these transactions represented a fire sale of the company.

same size group.<sup>6</sup> As before, to be included in the IPO control sample a firm needed to have analyst coverage and reported financial information.

## 5. Modeling the Decision to Go Private

The decision to go private and for that matter the decision to go public are momentous events in the life of the firm. As noted previously, the need to attract greater investor interest and enhance stock liquidity might compel firms to go private. Similarly, we argue that failure to realize these goals of greater investor participation and financial visibility might force firms to abandon the public market. Financial visibility and investor participation are therefore important factors throughout the lifecycle of the firm. We use a duration model to examine a firm's decision to exit the public market. In particular, we employ Cox's proportional hazard framework to estimate the likelihood that a firm will forego its public status in favor of an LBO or agreeing to be acquired by another private company. Hazard analysis is quite optimal in the current framework because it enables us to trace the decision of the firm over its entire lifecycle.

To formally describe the proportional hazard model, let the random variable ( $\tau$ ) represent the life of firm ( $i$ ) after going public in year ( $t$ ). The key variable in the hazard analysis is the conditional probability that the firm will decide to go private after  $\tau$  years, given that it has not done so until that point in time. In Cox's framework the hazard rate at time  $\tau$  is defined by

$$h(\tau | x_{t-1, i} \cdot \beta) = h_0(\tau) \exp(x_{t-1, i} \cdot \beta). \quad (1)$$

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<sup>6</sup>The size group was based on percentiles of market capitalization. In particular, our algorithm selected all firms belonging in the same percentile group with the LBO or going-private target. If there were no possible matches in the percentile group, the matching algorithm selected all firms in the two adjacent size groups.

Here, the vector  $(x_{t-1,i})$  represents all the explanatory variables included in the regression. Note that all variables in the explanatory vector are lagged by one year. The function  $h_0(\tau)$  is commonly referred to as the baseline hazard function. We use the partial maximum likelihood (PML) method to estimate the  $\beta$  parameter.

The proportional hazard model defined by equation (1) is estimated for firms that went public after 1988. The year 1988 is not arbitrary but was conveniently chosen because all firms after that year deciding to go private did so in the period 1990-2004. In the most general context, the sample is a yearly unbalanced panel of IPO firms. Assuming the company's financials are included in Compustat, a firm that went public in 1990 and did not change its status thereafter will have information over the entire 1990-2004 period. We opted to drop the first year for each firm (the IPO year). This first yearly observation is by definition incomplete because the time of the IPO is distributed throughout the year. This left-truncation in the time-series information can extend beyond the first year depending how quickly the firm can attract analyst coverage.

In theory, publicly traded companies can transition into a number of possible but mutually exclusive states. A listed firm may choose to merge or be acquired by another publicly traded company, liquidate, or suffer a negative delisting that is often associated with adverse outcomes such as default or bankruptcy. The proportional hazard model is fairly flexible in modeling all the termination events treating them as competing risks. The competing risks approach assumes that the occurrence of one type of event essentially eliminates all other outcomes. In a duration framework, competing outcomes such going-private transactions,

mergers, or negative delistings are treated as termination events, signifying “death”, while firms that remain public (survivals) are considered as censored observations.<sup>7</sup>

We investigate the decision to go private by estimating three variations of the hazard model. The first approach estimates a broad competing risk model where the decision of go private is evaluated against all alternative termination outcomes (e.g., merger, liquidation, negative delisting) as well as the surviving sample. Subsequently, we estimate a hazard regression for the probability of going private by excluding all other competing choices. In this case, the regression sample consists of an annual panel of observations of all IPO firms that had an LBO or were acquired by another private company and all surviving IPO firms (that is, firms that remained active in the public market). In the third version, the censored sample of survivors includes only similar-size IPO firms.

### *5.1. Discussion of Explanatory Variables*

The primary aim of the duration model is to test the market visibility hypothesis, and search for evidence supporting Jensen’s free cash flow hypothesis as well as for the presence of other agency problem incentives. Increased visibility in the public markets raises the profile of firms, enhancing legitimacy in the eyes of investors and consumers. Demers and Lowellen (2003) investigate the potential for advertising and marketing benefits for issuers. They point out that firms enjoy a considerable rise in publicity (measured by Lexis-Nexis search hits) around the

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<sup>7</sup>For going-private firms the terminal event is defined by the announcement of the buyout or acquisition deal. One could argue that the effective date of the merger (that is, the date that the acquirer formally absorbs the target) is more appropriate. As expected, however, market participants respond at the announcement date. For example, once a LBO is announced it would not be unusual for security analysts to stop coverage, although the firm may have not been formally acquired. Using the effective date of the merger would give the false impression that financial visibility is declining for going-private targets.

time of the IPO. During the Internet mania period this increased buzz in the popular press was often a useful marketing tool. The study demonstrates a significant relationship between the publicity derived from going public and the underpricing of the stock at the time of IPO.

The marketing and media exposure documented by Demers and Lowellen (1997) are good examples of the potential benefits of public ownership. We employ a number of direct and indirect measures of financial visibility. The most widely accepted empirical proxy of visibility is the number of analyst following a firm (Ackert and Athanassakos (2001)). Baker, Nofsinger, and Weaver (2002) argue that analyst reports are the primary source of information for most buy-side investors.<sup>8</sup>

O'Brien and Bushan (1990) document that firm size and other size-related factors determine the extent of analyst coverage. The implication of this close relationship of course is that the number of analyst also is proxy for firm size. Thus, the actual number of analysts covering a firm may not be the right scale for differentiating the sheer size of the firm from its ability to garner the attention of analysts. A more accurate measure of a firm's ability to attract and maintain research coverage is provided by the growth in the number of analysts (ANALYST\_GROWTH).

A number of studies in the accounting and finance literature (O'Brien and Bhushan (1990) and Falkenstein (1996)) show that institutional investors (mutual funds, pensions, trusts, and money managers) prefer to invest in firms with greater analyst following. These studies also argue that research analysis and institutional ownership are actually endogenously linked in the sense that research analysts initiate coverage and produce information responding to institutional demands. Either way, firms would like to attract greater interest from both analysts and

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<sup>8</sup>In particular, Nofsinger, and Weaver (2002) find that NYSE and London Stock Exchange listings are associated with a significant rise in firm visibility.

institutional investors. Consistent with our analyst growth measure, we use the change of institutional ownership (CHANGE\_INST\_OWNERSHIP) as an alternative proxy of market visibility.

Another way to determine investor interest is to examine the relative stock trading volume. Because investors are more inclined to trade in firms with greater information, a firm's stock turnover ratio (TURNOVER), defined by the ratio of the volume of shares traded over market capitalization, is a useful gauge capturing increased financial interest.

The regression model includes also number of indirect measures of firm visibility. We can expect that less liquid stocks that lack an adequate level of analyst following will tend to exhibit higher stock price volatility (STOCK\_VOLATILITY). The hazard regression also controls for firm size defined by the logarithm of market capitalization (SIZE). As noted above, larger market capitalization firms are followed by more security analysts and therefore attract more interest from investors.

While the main focus of this paper is to analyze the relationship between firm visibility and the decision to go private, we also test for many of the theories developed by the earlier literature on the determinants of firm buyouts. In the introduction, we noted that the LBO literature focuses primarily on the importance of agency conflicts in the decision to take a firm private. At the center of these empirical studies is Jensen's cash flow hypothesis, suggesting that conflicts of interest are more likely to take place in mature firms that generate significant net cash flows. To examine this premise most empirical LBO studies employ a variety of cash flow measures (see for example, Lehn and Poulsen (1989), Opler and Titman (1993), and Halpern, Kieschnick, and Rotenberg (1999)). We utilize a similar measure defined by net cash flow (after-tax operating income before depreciation) minus cash dividends and interest payments

(FREE\_CASH\_FLOW). This net cash flow measure is normalized by the company's total net sales.

In addition to free cash flow, several studies consider a number of alternative firm characteristics to discern the effect of agency conflicts in LBOs. Financial leverage is a very important component in LBOs enabling the transfer of wealth from bondholders to equity holders. We control for the effect of financial leverage by examining a firm's ratio of book value of long-term debt to market capitalization (DEBT\_RATIO). Jensen's free cash flow hypothesis also implies that management might tend to invest undistributed funds in negative NPV projects. We measure the propensity to waste company resources by the aggregate capital expenditures ratio, that is, cash outflow or the funds used for additions to the company's property, plant, and equipment over net sales (CAPX\_RATIO).

Growth prospects are also an important factor in the free cash flow premise as low-growth firms are potentially less able to find positive net present value projects for their funds. We use a firm's market-to-book ratio as a proxy for the capacity to grow (MARKET\_BOOK). Another plausible interpretation offered for the sharp rise in LBO activity in the 1980s was that firms were seeking to optimize tax savings. To consider these potential tax gains, we include as a regressor the company's tax expenditures defined by total income taxes (income taxes imposed by federal, state, and foreign governments) divided by net sales (TAX\_RATIO). Opler and Titman (1993) argue that the ratio research and development expenditures over sales (R&D) helps distinguish between agency and financial cost theories.

The hazard regression model controls for firm performance by including the excess stock return over the prior year (STOCK\_RETURN). It would be natural to expect that the market would reward better performing firms companies with higher income flow that are also more

likely to be buyout targets. Finally, although the coefficients of these estimates are not reported in the tables, the regression model controls for time variation by including year dummy variables.

## 5.2. Univariate Comparisons

As evidenced from the statistically significant pairwise t-statistics reported in the last column of Table 3, IPO firms choosing to go private differ substantially from the size-matched control sample of firms that remain public.<sup>9</sup> In particular, going-private IPO firms have better free cash flows, a higher debt-to-equity ratio, and significantly lower market-to-book ratios. In addition, going-private IPO companies are more profitable than their size-matched peers that generally are money-losing firms with negative return on assets (ROA).

The bottom panel in Table 3 focuses on measures of financial visibility and firm ownership. Firms choosing to go private appear to attract the same number of analysts as the control group. This similarity is not surprising because going-private firms and their control firms were chosen to have the same asset size. Firms that opt to go private, however, have negative analyst growth in comparison to their control peers that exhibit positive analyst growth. The disparity between the two groups is more noticeable in other measures of financial visibility. Control firms achieve higher levels of institutional ownership and exhibit greater stock turnover. Figure 3 traces the evolution of institutional ownership and analyst coverage for going-private firms and their controls after the IPO date. Although at the time of issue both groups are very similar, control firms are able to expand their analyst following and institutional interest at faster

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<sup>9</sup>The summary statistics measure the performance of the firms over their entire lifecycle, that is, between the IPO date and deal announcement date (or IPO date and end of 2004 for control firms). The sample is a panel of quarterly observations



pace than going-private firms. Table 4 further compares LBOs and non-LBO going-private transactions. Buyout firms are larger, more profitable, and have bigger free cash flow than those acquired by another private firm.

## **6. Hazard Regression Findings**

### *6.1. Testing Agency Conflicts*

In this section, we investigate Jensen's free cash flow hypothesis and other related explanations examining the misalignment of interests between insiders and stockholders. Most of the studies in the LBO literature focus on traditional agency problem explanations. This first phase of our analysis offers therefore a useful baseline for reassessing the importance of agency problems. The first three columns of Table 5 present the regression results for different competing risk models. Panel B compares the more tactical buyout deals with non-LBO takeovers. The likelihood ratio statistics provided at the bottom of the table indicate that parameter vector  $\beta$  is statically different than zero.

Overall, the regression results are fairly similar across the different competing risk models (Panel A). The most significant variable in these different hazard specifications is SIZE, although predictably its significance decreases in the size-matched control regression. The significance of firm size is not surprising because there are inherent impediments to acquiring larger more complex companies, especially when using debt to finance the deal. As noted earlier, firm size is also a good indicator for analyst coverage. Thus, the significant negative relationship between size and the conditional probability of going private is also consistent with the market visibility hypothesis.

The statistically significant positive coefficient of FREE\_CASH\_FLOW demonstrates that firms with larger undistributed cash flows are more likely to go private affirming Jensen's hypothesis. The impact of free cash flow is similar for buyouts and non-LBO deals (Panels B and C). While free cash flow arguments are particularly pertinent to LBO deals, they continue to be important in non-LBOs deals because acquiring firms are also seeking to reap these reorganization benefits, albeit without issuing any debt.

The regression results reveal a negative relationship between MARKET\_BOOK and the conditional probability of going private. A low market-to-book ratio signifies a firm with poor profitability prospects and low franchise value. This outcome is consistent with the free cash flow premise as management and private equity investors are more likely to take private low-growth firms. The negative coefficient on R&D is also amenable to these agency conflict interpretations. Misaligned incentives between insiders and outsider shareholders are more likely to manifest in R&D deficient low-growth firms that stand to gain the most from the realignment of incentives after the LBO.

The insignificant coefficients on TAX\_RATIO demonstrate that the decision to go private is not influenced by any tax consideration. Several of the earlier studies in the LBO literature highlighted various tax benefits. The most direct tax benefit is that firms can take advantage of the tax deductibility of interest payments on corporate debt. Kaplan (1989) also presents evidence that many of the early deals sought to take advantage of the tax code that allowed for certain depreciation deductions related to the fair value of the buyout premium. Most of these tax advantages have been eliminated with the enactment of the Tax Reform of 1986.

The weakly significant positive coefficient on the DEBT\_RATIO in the LBO regression (Panel B) appears to contradict Jensen's argument that buyout targets are not efficient users of

debt. This discrepancy is also evident from the univariate analysis showing LBO firms used more debt than the control sample. Halpern, Kieschnick, and Rotenberg (1999) also find that buyout firms with high managerial ownership exhibit greater use of debt. This finding, however, simply shows that LBO targets are more leveraged before the buyout but does not rule out the possibility that debt levels may go higher after the buyout.

## *6.2. Financial Visibility*

To analyze the impact of financial visibility, we report in Table 6 estimates the hazard regressions for the subset of firms that had analyst coverage. Overall, the coefficients on the net cash flow explanatory variable included to measure agency problems continue to be negative, albeit at lower significance levels. The decline in significance for these agency conflicts variables can be attributed to the smaller non-censored sample that diminishes somewhat the statistical power of the hazard specifications.

Considering the explanatory power of other regressors used to capture the influence of agency conflicts incentives, the effect of analyst growth (ANALYST\_GROWTH) and institutional ownership (CHANGE\_INST\_OWNERSHIP) on the conditional probability to engage in an LBO is quite striking. The proportional hazard regressions demonstrate that firms unable to maintain a positive inflow of research analysts were more likely to go private. Moreover, these market visibility proxies are also important in non-LBO takeovers (Panel B), indicating that these acquisition targets were also overlooked by market participants.

A simple way to gauge the importance of analyst coverage is to compute the hazard ratio for LBO firms with negative and positive growth in coverage.<sup>10</sup> This hazard ratio is roughly 1.5, meaning that IPO companies experiencing a decline in analyst coverage have 1.5 times the probability of going private than firms with increasing analyst coverage.

As with many economic models, the decision to go private and analyst coverage could be endogenously determined. For example, one could argue that security analysts might be more inclined to cease coverage if they suspect that the firm is seeking to go private. In reality, however, it does not make sense for analysts to stop covering potential (or suspected) takeover targets because this information is very valuable and could be highly profitable to their investor clients.<sup>11</sup> Our graphical analysis (Figure 2) shows that going-private firms are lacking analyst coverage from the onset of their IPO. Thus, a firm's decision to abandon its public listing is motivated in part by growing frustrations to attract wider analyst following and greater investor interest.

Our findings supporting the financial visibility are further strengthened by the negative relationship between TURNOVER and the probability of going private. Stock turnover is a fairly good proxy of market visibility as investors often prefer to trade in information-transparent stocks. Brennan and Subrahmanyam (1995) argue that security analysis plays a critical role in mitigating information asymmetries in trading, lowering the cost of transacting in stocks and

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<sup>10</sup>Formally, the hazard ratio is defined by  $\frac{P(\text{LBO occurs} / \text{Negative Growth in Analyst Coverage})}{P(\text{LBO occurs} / \text{Positive Growth in Analyst Coverage})}$ .

<sup>11</sup>Similarly, it would not make sense for institutional investors to sell prior to the announcement of the deal because they would forfeit the buyout premium. Of course the behavior of analysts and investors should change once the deal is formally announced. In many cases, it would make sense for analysts to drop coverage because target fundamentals and forecasts become less relevant.

enhancing market depth and stock liquidity. Stock turnover is therefore a useful indicator of information intensity and investor interest.

In addition to stock turnover and volatility, the regression controls for stock performance, measured by the difference between a firm's stock return and the equally weighted CRSP stock return index (including dividends). As reported in the first column of Panel in Table 6, the effect of STOCK\_RETURN is positive and statistically significant, indicating that stocks of going-private firms outperform their various control peers. This result is not surprising because in this model we compare going-private firms against all competing risk, including a large number of failed firms. When the censored sample (that is, the sample of firms that do not go private) is limited to better performing surviving firms, the impact of stock return performance is not significant. We also find that STOCK\_VOLATILITY and the likelihood of going-private are negatively correlated in the full competing risk model. This result is counterintuitive because lesser investor participation would tend to induce firms with low stock returns and more volatile stock prices to go private (e.g., Boot, Gopalan, Thakor (2005)). However, the negative coefficient on STOCK\_VOLATILITY is again an artifact of the censored sample in the competing risk framework that includes riskier and thus more volatile firms. When we confine the censored sample to only surviving firms, the effect of stock volatility is insignificant.

### *6.3. The Impact of Insider Ownership*

So far our empirical analysis has focused on firm and stock performance measures to identify the key factors contributing to the decision to go private. However, the nature of agency conflicts between insiders/management and shareholders may also depend on the ownership structure of the firm. This section briefly examines the role of insider ownership in the decision

to go private. Information on insider ownership is obtained from *Compact Disclosure* for the period 1990-2002. Compact Disclosure reports the ratio of insider (officers and directors) holdings of common shares over the total share outstanding.

A number of studies (see for example, Mikkelson, Partch, and Shah (1996) and Helwege, Pirinsky, and Stulz (2005)) have examined the ownership dynamics for IPO firms. These studies find that IPO firms become widely held over time with the majority of them having insider ownership below 20% after ten years. Figure 4 traces the evolution of insider ownership for the going-private firms and the size-matched control sample. Similar to the findings of the existing literature, we observe that insider ownership for the control sample approaches 20 percent after 10 years. However, firms that go private are more closely held. As shown in Table 3, the average level of insider ownership for firms choosing to go private is 38.18 percent, significantly higher than the 26.94 percent ownership of the size-matched control group.

Having gone public only recently, IPO firms are more closely held with ownership concentrated in the hands of founders, venture investors, and other insiders. Halpern, Kieschnick, and Rotenberg (1997) argue that insider stock ownership was a key determinant of the buyout process in the 1980s. They point out that LBO targets with low insider ownership before the buyout were usually led by outside private investor groups who often cashed out by selling the company or by engaging in a reverse LBO. Because high-ownership firms are less likely to be takeover targets, the LBO was often steered by the management seeking a more efficient organizational structure. In contrast to the more mature LBO transactions of the 1980s, officers and directors of going-private IPO firms are also returning to a very familiar organizational structure of private ownership that they abandoned only few years before.

The last column in Panel A of Table 6 reports estimates of the proportional hazard regression that controls for insider ownership (INSIDER\_OWNERSHIP). Because the available information from our version of Compact Disclosure ends in 2002, the sample of going-private transactions declines to 82 observations.<sup>12</sup> Despite the smaller sample, the regression findings are generally unchanged. More important, the relationship between insider ownership and the probability of going private is positive and significant. A straightforward interpretation of this result is that it is much easier for management and investors to take private more closely-held firms and costlier to them to stay public.<sup>13</sup>

## **7. Conclusion**

This paper investigates the reemergence of going-private transactions. The literature examining the large wave of buyout deals during the 1980s focused primarily on the importance reorganization benefits. According to Jensen (1986), LBO takeovers are a mechanism for lessening agency problems associated with free cash flow. Our analysis of going-private deals during 1990-2004 strongly supports the reorganization thesis. In addition to these traditional restructuring improvements, we argue that a significant force behind the decision to abandon the public markets is the inability by many of these firms to attract a critical mass of analyst coverage and investor interest and failure to reap the full benefits of public ownership.

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<sup>12</sup>In addition to the shorter time period, the sample size is smaller because we were not able to find insider ownership information for all firms in the regression panel.

<sup>13</sup>In addition to outright shares owned, firm insiders are also granted stock options. However, insider option ownership for these IPO firms is tiny compared to stock ownership. In the particular, the ratio of the number of stock options divided by the total number of shares outstanding is on average less than 1 percent. When included as an additional regressor in the hazard, the effect of the options ratio on the probability of going private is not statistically significant.

Financial visibility is particularly important for younger less well-known companies. The advantages of greater visibility for publicly traded firms might be, however, overshadowed by heightened scrutiny from shareholders and supervisors. Firms would therefore like to reach an optimal scale in financial and media exposure to compensate for the adverse costs of public ownership. We find that a significant proportion of the going-private targets were IPO firms. A proportional hazard analysis of the decision to go private supports the market visibility hypothesis. The regression results reveal that IPO firms with declining analyst coverage, falling institutional ownership, and low stock turnover, exhibit a substantially higher probability of going private.

The ability of the new public companies to compete for coverage has been recently curtailed by the declining number of analysts, as many financial advisory firms elected to cut back or entirely eliminate their research departments after the Internet debacle. While companies with inadequate analyst interest are not able to take advantage of the perceived benefits that public markets have to offer, they continue to face all the explicit costs of maintaining their listing (e.g. listing fees and disclosure costs).<sup>14</sup> The rising cost structure imposed by new legislation is likely to make it more difficult for some small or medium-size corporations competing for the limited resources of investor and consumer recognition to remain as public firms.

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<sup>14</sup>See DeAngelo, DeAngelo, and Rice (1984) for a discussion of costs associated with filing with the SEC. Linck, Netter, Yand (2005) find strong evidence that SOX has imposed a disproportionate burden on small companies. They demonstrate that director costs for these small firms have surged from \$1.98 per \$1,000 of net sales in 2001 to \$3.19 in 2004.



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**Table 1**  
LBO and Going-Private Completed Deals, 1980-2004

This table summarizes LBO and non-LBO going-private takeovers between 1980 and 2004. The total value of the deal is based on the value of the transaction as reported in SDC. For IPO firms, the age is measured by the difference between the deal announcement date and issued date (in years). For firms that do not have an official IPO date, the age is measured by the difference between the deal announcement date and the CRSP origination date (date that firm was first listed on the Exchange). The table includes only companies reported in the CRSP header file.

A. LBO Deals

Period	Number of LBO Deals	Total Value of Deals (\$ Billions)	Percent IPOs (volume of deals)	Median Age of Firm (in years)
1980-1989	442	196	8.21	14
1990-2004	448	174	33.4	8

B. Non-LBO Going-Private Deals

Period	Number of LBO Deals	Total Value of Deals (\$ Billions)	Percent IPOs	Median Age of Firm
1980-1989	166	47	4.72	12
1990-2004	306	39	38.9	8

**Table 2**

## Breakdown of the Sample of IPO Firms Choosing to Go Private (Completed Deals)

This table presents a breakdown of the sample of IPO firms that elected to go private between January 1, 1988 and December 31, 2004. Panel (A) lists all firms that were completed deals and were included in the COMPUSTAT database. Panel (B) summarizes a subset of these completed deals representing firms that had analyst coverage as reported by I/B/E/S.

Year	A. Completed Deals		B. Deals With Analyst Coverage	
	All Deals	LBOs	Total	LBOs
1991	1	0	1	0
1992	0	0	0	0
1993	0	0	0	0
1994	4	0	3	0
1995	3	1	3	1
1996	6	2	4	2
1997	7	4	5	3
1998	5	1	5	1
1999	22	20	21	19
2000	25	21	22	17
2001	19	11	13	6
2002	8	4	8	4
2003	13	59	9	3
2004	13	9	12	9
Total	126	78	106	65

**Table 3**

## Comparison of Going-Private IPO Firms with their Control Sample

The table compares going-private firms with a similar size sample of peer over the period 1988-2004. FREE\_CASH\_FLOW = Net cash flow minus cash dividends and interest payments divided by net sales. DEBT\_RATIO = Book value of long-term debt divided by market capitalization. CAPX\_RATIO = Cash outflow or the funds used for additions to the company's property, plant, and equipment over net sales. MARKET\_BOOK = Market-to-book value of the equity. TAX\_RATIO = Income taxes imposed by federal, state, and foreign governments divided by net sales. R&D = Research and development expenditures over net sales. ROA = Net income divided by total assets. SIZE = Market capitalization (measured in \$ millions) ANALYST\_GROWTH = Difference in the log (number of analyst + 1) from year (t) to year (t-1). INST\_OWNERSHIP = Institutional ownership (percent). TURNOVER = Stock trading volume divided by market capitalization (percent). STOCK\_RETURN = Firm's yearly stock return minus the CRSP equally weighted index return (including dividends). STOCK\_VOLATILITY = Yearly standard deviation of a firm's stock return. INSIDER\_OWNERSHIP = Shares owned by directors and officers divided by the total number of shares (percent). The symbols (\*), (\*\*), and (\*\*\*) indicated statistical significance at the 10-, 5-, and 1-percent level.

	LBOs/Non-LBO Going-Private Firms	Control Sample	Difference
<u>Financial Variables</u>			
FREE_CASH_FLOW	0.148	-0.276	0.425***
DEBT_RATIO	0.749	0.519	0.229***
MARKET_BOOK	1.951	2.915	-0.964***
TAX_RATIO	0.017	0.007	0.010***
CAPX_RATIO	0.127	0.125	0.0018
R&D	0.033	0.653	-0.62***
ROA	0.035	-0.125	0.160***
SIZE	196.26	200.84	-4.58
<u>Firm Characteristics</u>			
NUMBER OF ANALYST	3.64	4.07	-0.021***
ANALYST_GROWTH	-0.008	0.012	-0.021*
INST_OWNERSHIP	28.86	35.16	6.31***
CHANGE_INST_OWNERSHIP	0.66	2.01	-1.35***
TURNOVER	0.71	1.26	-0.55***
STOCK_RETURN	-0.002	0.012	-0.014***
STOCK_VOLATILITY	0.129	0.184	-0.055***
INSIDER_OWNERSHIP	38.18	26.94	11.25***
Number of Annual Observations	567	4411	

**Table 4**  
Comparison of LBO and non-LBO Firms

The table compares LBO targets with non-LBO going-private firms over the period 1988-2004. FREE\_CASH\_FLOW = Net cash flow minus cash dividends minus and interest payments divided by net sales. DEBT\_RATIO = Book value of long-term debt divided by market capitalization. CAPX\_RATIO = Cash outflow or the funds used for additions to the company's property, plant, and equipment over net sales. MARKET\_BOOK = Market-to-book value of the equity. TAX\_RATIO = Income taxes imposed by federal, state, and foreign governments divided by net sales. R&D = Research and development expenditures over net sales. ROA = Net income divided by total assets. SIZE = Market capitalization (measured in \$ millions) ANALYST\_GROWTH = Difference in the log (number of analyst + 1) from year (t) to year (t-1). INST\_OWNERSHIP = Institutional ownership (percent). TURNOVER = Stock trading volume divided by market capitalization (percent). STOCK\_RETURN = Firm's yearly stock return minus the CRSP equally weighted index return (including dividends). STOCK\_VOLATILITY = Yearly standard deviation of a firm's stock return. INSIDER\_OWNERSHIP = Shares owned by directors and officers divided by the total number of shares (percent). The symbols (\*), (\*\*), and (\*\*\*) indicated statistical significance at the 10-, 5-, and 1-percent level.

	LBO Firms	Non-LBO Firms	Difference
<u>Financial Variables</u>			
FREE_CASH_FLOW	0.155	0.138	0.017
DEBT_RATIO	0.811	0.643	0.168
MARKET_BOOK	1.954	1.944	0.0096
TAX_RATIO	0.018	0.016	0.0018
CAPX_RATIO	0.119	0.135	-0.02
R&D	0.027	0.043	-0.016
ROA	0.045	0.009	0.036***
SIZE	241	120	120***
<u>Firm Characteristics</u>			
NUMBER OF ANALYST	3.88	3.24	0.647**
ANALYST_GROWTH	-0.017	0.006	-0.023*
INST_OWNERSHIP	32.1	23.16	8.12***
CHANGE_INST_OWNERSHIP	0.454	0.977	-0.523
TURNOVER	0.78	0.57	0.21***
STOCK_RETURN	-0.0008	-0.004	0.0032***
STOCK_VOLATILITY	0.134	0.121	0.013**
INSIDER_OWNERSHIP	37.23	39.51	-2.28***
Number of Annual Observations	355	212	

**Table 5**

## A Hazard Model for the Decision of IPO firms to Go Private: The Importance of Agency Conflicts

The dependent variable in the hazard regression is the probability that the IPO firm will choose to go private (either through a LBO or agree to a takeover by another private firm) given that it has not done so until that point of time. AMEX and NYSE are binary indicators for the two major stock exchanges. The remaining explanatory variables are defined at the top of Table 3. The symbols (\*), (\*\*), and (\*\*\*) indicated statistical significance at the 10-, 5-, and 1-percent level. The regression sample is a panel of firm year observations examining the decision of IPO firms to go private from 1988 to 2004.

Independent Variables	A. <u>LBO and non-LBO Firms:</u>			B. <u>LBO Firms</u>	C. <u>Non-LBO Firms</u>
	Against All Competing Risks	Against Surviving Firms	Against Size-Matched Surviving Firms	Against Size-Matched Surviving Firms	Against Size-Matched Surviving Firms
AMEX	-0.329 (0.89)	-0.359 (1.04)	-0.322* (0.82)	-0.812 (1.80)	0.227 (0.26)
NYSE	-0.599* (3.69)	-0.528* (2.80)	-0.090 (0.08)	-0.468 (1.40)	0.595 (1.34)
FREE_CASH_FLOW	0.673*** (10.77)	0.550*** (8.04)	0.671*** (9.51)	0.628*** (5.94)	0.735* (3.63)
DEBT_RATIO	0.033 (0.25)	0.092 (1.72)	0.126* (3.01)	0.174** (3.94)	0.027 (0.06)
MARKET_BOOK	-0.129** (5.36)	-0.137** (5.42)	-0.089* (2.76)	-0.119 (2.33)	-0.043 (0.31)
TAX_RATIO	0.131 (0.08)	0.094 (0.06)	0.099 (0.04)	-0.858 (0.12)	0.077 (0.03)
CAPX_RATIO	-0.343 (0.53)	-0.528 (0.29)	-0.827 (2.36)	-0.338 (0.38)	-1.638 (1.64)
R&D	-0.028* (2.75)	-0.582 (1.35)	-0.018 (1.07)	-0.017 (0.93)	-0.213 (0.26)
Log SIZE	-0.322*** (23.73)	-0.378*** (31.48)	-0.227*** (8.05)	-0.211* (3.53)	-0.368*** (8.10)
Number Going Private	126	126	126	78	48
Number Non-Censored	2459	1291	593	322	271
Firm-Year Observations	11148	7752	4549	2233	2316
Likelihood Ratio Test	129.6***	158.2***	117.97***	100.5***	60.6***



**Table 6**

## A Hazard Model for the Decision of IPO firms to Go Private: The Impact of Financial Visibility

The dependent variable in the hazard regression is the probability that the IPO firm will choose to go private (either through a LBO or agree to a takeover by another private firm) given that it has not done so until that point of time. AMEX and NYSE are binary indicators for the two major stock exchanges. The remaining explanatory variables are defined at the top of Table 3. The symbols (\*), (\*\*), and (\*\*\*) indicated statistical significance at the 10-, 5-, and 1-percent level. The regression sample is a panel of firm year observations examining the decision of IPO firms to go private from 1988 to 2004.

Independent Variables	A. <u>LBO and non-LBO Firms:</u>			Against All Competing Risk	B. <u>LBO Firms</u>		C. <u>Non-LBO Firms</u>	
	Against All Competing Risk	Against Surviving Firms	Against Size-Matched Survivors		Against Size-Matched Survivors	Against Size-Matched Survivors		
<u>Financial Variables</u>								
AMEX	-0.229 (0.36)	-0.065 (0.03)	-0.012*** (12.05)	-0.305 (0.47)	-0.319 (0.19)	0.253 (0.24)		
NYSE	-0.629** (3.51)	-0.442** (1.69)	-0.042*** (18.32)	-0.619 (2.53)	-0.448 (1.01)	0.439 (0.71)		
FREE_CASH_FLOW	0.512** (6.09)	0.433** (4.69)	-0.339** (4.75)	0.627** (5.92)	0.671 (2.44)	0.291 (0.94)		
DEBT_RATIO	0.004 (0.01)	0.065 (0.64)	0.062 (0.55)	-0.022 (0.06)	0.043 (0.14)	0.035 (0.08)		
MARKET_BOOK	-0.062 (1.42)	-0.067 (1.48)	(1.79) -0.020	-0.023 (0.19)	-0.043 (0.25)	-0.013 (0.07)		
TAX_RATIO	-0.061 (0.005)	-0.043 (0.002)	-0.030 (0.09)	0.083 (0.007)	0.021 (0.12)	-0.012 (0.45)		
CAPX_RATIO	0.370 (1.01)	0.198 (0.25)	0.062 (0.03)	0.025 (0.002)	0.404 (0.72)	-0.743 (0.37)		
R&D	-0.042** (4.11)	-0.041* (3.38)	-0.029 (1.23)	-0.038 (1.75)	-0.012 (0.75)	-0.039 (1.18)		
Log SIZE	-0.337*** (13.55)	-0.409*** (19.23)	-0.312*** (8.12)	-0.365*** (12.78)	-0.202 (1.82)	-0.416** (5.91)		

Table 6 Continued next page

Table 6 Continued

Independent Variables	A. LBO and non-LBO Firms:			Against All Competing Risk	B. LBO Firms	C. Non-LBO Firms
	Against All Competing Risk	Against Surviving Firms	Against Size-Matched Survivors		Against Size-Matched Survivors	Against Size-Matched Survivors
<u>Financial Visibility</u>						
ANALYST_GROWTH	-0.012*** (12.85)	-0.012*** (12.05)	-0.0095*** (7.59)	-0.011** (5.71)	-0.010** (5.86)	-0.012* (3.67)
CHANGE_INST_OWNERSHIP	-0.033*** (12.45)	-0.042*** (18.32)	-0.041*** (15.51)	-0.031*** (8.04)	-0.037*** (9.16)	-0.044** (4.57)
TURNOVER	-0.418*** (7.02)	-0.339** (4.75)	-0.291* (3.35)	-0.162 (1.12)	-0.156 (0.75)	-0.773** (4.81)
<u>Stock Market Performance</u>						
STOCK_RETURN	0.041* (3.73)	0.031 (1.79)	0.265 (1.26)	0.038 (2.29)	0.026 (0.68)	0.0009 (0.001)
STOCK_VOLATILITY	-0.026*** (3.60)	-0.020 (2.28)	-0.016 (1.31)	-0.044** (5.59)	-0.030 (2.09)	0.015 (0.61)
<u>Ownership</u>						
INSIDER_OWNERSHIP				0.018*** (18.71)		
Number Going Private Firms	106	106	106	82	66	40
Number Non-Censored Firms	2302	1134	475	1729	257	218
Firm-Year Observations	9916	6624	3510	8444	2203	1507
Likelihood Ratio Test	159.9***	196.5***	143.4***	144.4***	104.6***	79.4***