

Why Do Firms Go Dark?
Causes and Economic Consequences of
Voluntary SEC Deregistrations

Christian Leuz, Alexander Triantis, and Tracy Wang¹

First Version: June 2004

This Version: November 2004

¹Christian Leuz is at University of Pennsylvania's Wharton School. Alexander Triantis and Tracy Wang are at University of Maryland's Robert H. Smith School of Business. We thank Utpal Bhattacharya, Brian Bushee, Soeren Hvidkjaer, D. Scott Lee, Paul Mahoney, Bill Tyson, and seminar participants at University of Virginia and University of Washington for their helpful comments.

Abstract

We examine public companies that choose to “go dark”, i.e., cease reporting to the SEC by deregistering their common stock, but continue to trade in the over-the-counter market. Such firms must satisfy certain criteria, most notably having fewer than 300 holders of record (or 500 holders for smaller firms). Approximately 200 companies went dark during 2003 alone, raising concerns that recent changes to U.S. securities regulation are driving some firms to exit the reporting system. Among our findings, we document a large negative abnormal return at the announcement and filing of deregistration, which is more pronounced for smaller firms, and for firms that deregistered after the passage of the Sarbanes-Oxley Act. This evidence suggests that while cost savings may be a motivating factor for deregistration, shareholders infer from the going-dark decision negative information about the firm’s future prospects, and/or view the decision as principally serving insiders’ interests. Exploring these hypotheses in a probit analysis, we find evidence consistent with the notion that firms deregister as a response to bad news about their future growth opportunities, but also evidence that the deregistration has less benign motivations when governance structures are weak and agency problems are present. We also delineate distinctions between firms that go dark and those that go private during our 1998-2003 sample period.

1 Introduction

The choice between private and public financing is a fundamental corporate decision. Companies must weigh factors such as less costly access to capital and increased liquidity of shares against direct and indirect costs of public trading and increased disclosure. These tradeoffs play out not only in the binary decision to be public or private, but also along a spectrum of choices reflecting varying degrees of liquidity and disclosure. Of particular recent interest is the surge of public companies that have decided to dramatically decrease their disclosure to the public by deregistering their common stock, and in so doing suspending their obligation to make periodic filings to the SEC. The increased disclosure and related internal control requirements introduced by the Sarbanes–Oxley Act of 2002 are frequently cited as catalysts in this recent movement to “go dark” (see McKay, 2003 and Frigo and Litman, 2004). In 2003 alone, 198 U.S. companies deregistered their common stock for reasons other than a liquidation, merger, acquisition, or going-private transaction.

Public companies may voluntarily file for deregistration if they have fewer than 300 shareholders of record, or fewer than 500 holders of record and less than \$10 Million of assets in each of the prior three years. Many companies that meet these criteria have thousands of beneficial shareholders, most of whom have their shares held in street name by financial institutions, each of which represents only one holder of record. In a petition sent to the SEC on July 3, 2003 (Nelson, 2003) a group of institutional shareholders asked the SEC to amend Rule 12g5-1 of the Securities Exchange Act of 1934 (which was added in 1965 in response to legislation enacted by Congress) to include as “held of record” each account for a beneficial owner holding the security in street name.¹ They argue that the recent wave of deregistrations has left many shareholders without access to accurate, publicly available information about companies in which they have ownership stakes, and go further to claim that amending the definition of holders of record will help tide the “current widespread manipulation of the capital markets by some unprincipled issuers”.

¹In another petition sent to the SEC on November 1, 2002 (Goldstein (2002)), an institutional investor claims that the burden of Sarbanes–Oxley will “soon streamroll into an avalanche of companies removing themselves from SEC regulation.” This petition asks the SEC to consider an exemption for small businesses from rules and regulations dictated by Sarbanes–Oxley. The outcome of these petition review processes are still pending as of the date of writing.

This article is one of the first to look at the effect of a significant and voluntary decrease in the commitment to disclosure (see also Healy and Palepu, 2001; Miller, 2002). Using information on thousands of security deregistrations during the 1998-2003 period, we identify close to 400 firms that have deregistered all their securities so as to suspend reporting to the SEC. We document important economic consequences of deregistration, including price and liquidity effects. In addition, by using a probit analysis to compare going-dark firms to those that could deregister but chose to continue reporting, we are able to shed light on the rationales underlying the decision to go dark.

In press releases announcing the decision to deregister the firm's stock, managers typically cite the high costs of reporting as the key motivation for going dark. We do find that smaller and distressed firms, for which reporting costs may be particularly burdensome, are more likely to go dark. We also find that firms that have fewer growth opportunities and lower trading volume are more prone to deregister, indicating that a rational tradeoff between costs and benefits of reporting may be at least in part driving the deregistration decision for many firms in our sample. However, we find a large negative market reaction to the firm's decision to go dark. The abnormal return at the announcement date is particularly negative for smaller firms, and for firms that deregistered after the passage of the Sarbanes-Oxley Act, where the cost savings rationale should be even more pertinent.

There are two plausible explanations for the market's negative reaction to deregistration. First, investors may view the announcement as providing new information about diminished growth prospects and lower profitability for the firm. While managers likely recognize that their decision to go dark will reveal their assessment of the firm's future and of the benefits of reporting, this information would have come out eventually if the firm continued reporting. Thus, accelerating this revelation and saving the reporting costs could be in shareholders' best interest by maximizing shareholder value. While this asymmetric information hypothesis is difficult to test, we do find that many going-dark firms are distressed, and several of our results are consistent with the notion that the market views the going dark decision as conveying further information about the firms' weak future growth prospects.

Second, outside shareholders may view the going dark decision as being only in insiders' best interests. At the very least, controlling insiders may not be internalizing the loss of stock

liquidity when deciding to go dark, given that managers may view their holdings as being relatively illiquid regardless of whether the firm continues to report or not. Shareholders may be even more skeptical, viewing deregistration as a mechanism for management to hide poor performance that might otherwise lead to their dismissal, to protect themselves from legal liability (especially post Sarbanes-Oxley), or to more easily increase private benefits of control (compensation, perks, etc.). By looking at variables such as accounting accruals, free cash flow, and ownership concentration, we do find some support for the hypothesis that deregistration is more common when there are managerial agency problems in the company.

Our study also draws some clear distinctions between going-dark deregistrations and two related events, namely delisting and going-private. While a company's stock will be delisted following deregistration if it is not already traded in the over-the-counter market, deregistration and delisting are different issues, with separate consequences. Delistings tied to voluntary deregistration decisions, are implicitly voluntary. Other studies that examine the effect of delistings, including recent studies by Macey et al. (2004) and Angel et al. (2004), focus on involuntary (regulatory) delistings, and thus our sample of delistings is unique.² We separate out the announcement effects of deregistration and delisting, and find a significant negative impact attributable to each event. Interestingly, we find a significant share price decrease at the time of delisting, even if the market should have been able to foresee the impending delisting at the time of the earlier deregistration announcement.

Firms that deregister to go dark are often casually viewed in practice as having gone private. Going dark and going private both remove the obligation to provide information to public investors. However, there are important distinctions between these actions, the most notable being that going-dark firms continue trading after the date of deregistration. To contrast going-dark and going-private firms, we study a parallel sample of firms that went private during the 1998-2003 period. We find that companies that go dark tend to have smaller size, lower recent stock return, lower free cash flow, lower investment in future growth opportunities, and fewer institutional owners than firms that go private. Interestingly, we find that while the number of going-dark firms has surged following the passage of Sarbanes-Oxley, the incidence of going-

²In a concurrent paper, Marosi and Massoud (2004) analyze a sample of 42 firms that voluntarily deregister and delist from major exchanges. Since all of the firms in their sample delist following deregistration, they cannot separate out the effects of deregistration and delisting.

private transactions has not significantly increased recently. Taken together, this suggests that going private may be primarily driven by motivations other than the costs of reporting, and that for the firms that end up going dark, going private is either not an alternative open to them given their size or performance, or it does not achieve the objectives of management, including their continued employment at the company. This conclusion is further supported by the large positive difference between going private and going dark event window returns.

From a policy perspective, our results are consistent with firms appearing to respond to Sarbanes-Oxley by exercising their option to exit the SEC reporting system. While the reduced disclosure may be a unintended consequence of the new regulation, firms that go dark are generally small, and often distressed, and thus the overall impact on the informational efficiency of the market is rather limited. Placing further restrictions on the ability of such firms to exit SEC reporting (for instance, using the number of beneficial owners rather than holders of record) may increase shareholder protection in many instances, but has the detrimental effect of imposing additional expected costs on firms that consider going public. An alternative to restricting exit is to decrease the incentive to exit by providing relief to smaller companies through more scaleable versions of governance and reporting regulations that better match costs with size. Managers seeking to avoid the market's scrutiny would no longer be able to pool together with those deregistering purely to reduce reporting costs.

The next section details the deregistration process from a legal and procedural perspective. In Section 3, we discuss the costs and benefits associated with both going-dark and going-private decisions, and present our research design. Section 4 describes our sample selection and presents some descriptive statistics. Section 5 documents our findings. Section 6 provides concluding remarks.

2 The Deregistration Process

Under SEC rules, a company with a class of securities registered under the Securities Exchange Act of 1934 may choose to terminate the registration of any such class of securities if the securities have fewer than 300 holders of record, or fewer than 500 holders of record if the company's total assets have not exceeded \$10 million at the end of the company's three most

recent fiscal years, and if the company satisfies some additional criteria to be discussed below. Rule 12g5-1 under the Securities Exchange Act defines “holders of record” for purposes of Sections 12(g) and 15(d) of the Securities Exchange Act in such a way that a group of beneficial owners are counted as a single holder of record if their shares are held in street name by a single financial institution.³ The company deregisters a class of securities by filing Form 15, a simple one-page form that requires the company to report how many holders of record there are for the class of securities, and to indicate under which Section(s) of the 1933 and 1934 Acts it qualifies for deregistration. If a company deregisters all of its securities, its duty to file any reports under Section 13(a) of the 1934 Act (which include Forms 10-K, 10-Q and 8-K) is effectively suspended, and the company is no longer subject to the Sarbanes-Oxley Act and the SEC rules promulgated thereunder.

A company that is interested in deregistering its securities in order to go dark, but has more than 300 record holders, can follow one of two approaches in order to reduce its holders of record below the threshold. First, the company could orchestrate a reverse stock split with a sizable split ratio (e.g. 1 for 1000 shares). This would result in significant fractional interests that could then be cashed out. Such a split is affected by a charter amendment and requires shareholder approval. This approach requires filing a proxy statement together with a Schedule 13E-3 filing, and SEC review must precede the solicitation of shareholder consent.

The second approach involves an issuer self-tender offer, whereby the company offers to repurchase its shares pursuant to particular SEC rules. Though this approach also involves filing Schedule 13E-3, this process tends to be faster to execute than the reverse split, and is more favorably viewed given that outside shareholders choose whether to tender their shares, as opposed to being squeezed out by a majority vote in the case of a reverse split. However, there is no guarantee that the number of record holders will fall below 300 under this approach, particularly if a significant number of small investors holding shares in bearer form ignore the offer.

³In contrast, Rule 12g3-2, which applies to the deregistration of foreign companies’ securities, looks through to beneficial owners, counting the number of separate accounts for which brokers, dealers, or banks hold the securities. Interestingly, while Nelson’s (2003) petition asks the SEC to amend Rule 12g5-1 to reflect beneficial owners, a petition filed by European interests seeks to change Rule 12g3-2 to reflect holders of record. Foreign firms that have realized little benefit from cross-listing in the US now feel trapped in the SEC reporting system, particularly post-SOX, given that it is extremely difficult for these firms to satisfy the deregistration requirements of having fewer than 300 (or 500) beneficial owners.

In addition to having fewer than 300 (or 500 for smaller firms) holders of record, there are several other requirements that a firm must satisfy to qualify to deregister its securities. A company is not allowed to suspend its reporting obligations with respect to a class of equity securities during the fiscal year in which a registration statement related to this class of securities was declared effective under the Securities Act of 1933 or is required to be updated pursuant to Section 10(a)(3) of the Act.⁴ The company must also not have any contractual obligations (such as registration rights granted to investors or vendors), or restrictions in its certificate of incorporation (or bylaws), that require the company to continue filing reports with the SEC.

Before filing to deregister its common stock, a company may first have to apply to delist its stock from an exchange. The exact process depends on where the company's stock is traded, and in turn what Section(s) of the Securities Exchange Act the company is registered under. Companies whose securities are listed on a national securities exchange are registered pursuant to Section 12(b) of the Securities Exchange Act. These companies must first apply to the exchange to remove the company from listing at the exchange. Each exchange stipulates its own rules regarding voluntary delisting. For instance, the NYSE requires the company to obtain approval of the company's audit committee and board of directors, to publish a press release announcing the proposed delisting, and to send to at least the largest 35 shareholders of record written notice of the proposed delisting and expected effective date. The company need not, however, obtain formal stockholder approval. If the exchange approves the company's request for delisting, the company will then submit an application to the SEC pursuant to Rule 12d2-2 under the Securities Exchange Act to get the SEC's approval. After a 21-day comment period following publication of the application in the Federal Register, the SEC then decides whether to approve the application to deregister under Section 12(b).

Companies whose securities are quoted on the Nasdaq National Market, the Nasdaq Small Cap Market, or the OTC Bulletin Board, or companies that have more than 500 holders of record and \$10 Million in assets at the end of the previous calendar year, have their securities registered pursuant to Section 12(g) of the Securities Exchange Act. Nasdaq companies need only provide written notice to Nasdaq of their request for voluntary delisting, stating the reason

⁴A two year restriction applies to firms with fewer than 500 shareholders and less than \$10 Million in assets. See Rule 12h-3 of the Securities Exchange Act of 1934.

for such an action. The OTC Bulletin Board has no formal requirements related to voluntary delisting.

Section 15(d) of the Securities Exchange Act creates reporting obligations for companies not registered under either Section 12(b) or 12(g), but that have registered a distribution of securities under the 1933 Act. Companies that terminate their registration under Section 12 will become subject to a filing requirement under Section 15(d). However, under Rule 12h-3, this obligation can be suspended by checking the appropriate box on Form 15 (together with the box for the applicable subsection of Rule 12g-4 if appropriate).

If the company's stock has been quoted on Nasdaq or the OTC Bulletin Board, the stock will no longer be quoted in these markets once Form 15 is filed, but will be eligible for quotation on the Pink Sheets, an automated, real time electronic quotation service with a web portal for quote dissemination (see Bushee and Leuz, 2004). The SEC has up to 90 days to approve or deny the termination of registration, and the company may withdraw its filing during this period.⁵ Once the deregistration is approved, all reporting requirements of the SEC are formally suspended as long as the company's holders of record remain below the threshold of 300 (or 500).⁶

3 Hypothesis Development and Research Design

3.1 The Benefits and Costs of Going Dark

The most often cited benefit of going dark, as reported in press releases, 8Ks and 13E-3 filings, is the cost saving from suspending SEC reporting. Periodic reporting to the SEC consumes considerable internal resources and requires retaining auditors and lawyers. Since there are some scale economies associated with these costs, smaller firms claim to find compliance to be particularly burdensome. The new requirements introduced by the Sarbanes–Oxley Act of 2002 have significantly increased the direct costs of reporting due to higher audit and legal fees, improvements to internal control systems, higher D&O insurance premiums, and

⁵For example, on August 22, 2003, Dotronix withdrew its request to end registration originally made on June 27, 2003, at the request of a firm that indicated its interest in acquiring Dotronix.

⁶A company wishing to reenter the Exchange Act reporting system once the SEC has approved its Form 15 filing would need to file Form 10s and other suspended reporting requirements for the period since the deregistration, for review by the SEC.

other compliance expenses.⁷ Some press releases also point to certain indirect cost savings from deregistration. For instance, companies are able to avoid disclosing information that may be of value to their competitors.⁸ Furthermore, management can focus its attention on the company's strategy and operations, rather than on managing short-term shareholder expectations.⁹

The costs associated with going dark are numerous. A company that goes dark destroys the bonding it created when it began its presumably long-term commitment to SEC reporting. Various studies have documented the significant value increase that is attributable to bonding, most notably in the context of US listings of foreign firms' shares (see Doidge, Karolyi, and Stulz, 2003). Thus, removing this bonding is likely to have a substantial negative impact on the firm's value.

The loss of transparency that results from going dark dramatically increases the asymmetry in information between insiders and outsiders. Easley and O'Hara (2000) and Wang (1993) argue that uninformed traders require a higher premium for holding stocks where there is greater private information, and Easley et al. (2002) provide empirical evidence that stocks with higher probabilities of information-based trading indeed have higher average rates of return. The investor base may also shrink as access to information becomes severely limited, and as various restrictions on who can recommend, hold, and margin stocks become relevant for these stocks. As Merton (1987) and Basak and Cuoco (1998) argue, a smaller, and thus less diversified, base of investors will in turn require a higher risk premium. Furthermore, Barry and Brown (1984), and Coles et al. (1995) show that as investors become less confident in their estimates of the stock return distribution of the stock, expected returns should increase.

Without the careful monitoring of shareholders and the enforcement mechanisms of the

⁷According to a recent survey of CFOs (Nyberg (2003)), 48% of their companies will spend at least \$500,000 on Sarbanes-Oxley compliance. Nearly 40% of the CFOs surveyed see the increased burden as having "very little" or "no effect" on the efficiency of their current processes, and only 30% believe the benefits outweigh the costs. In addition to the direct costs associated with compliance, one CFO states that "the fear of personal liability is so great that managers are afraid to take risks on innovation." Other CFOs note that compliance has left them with less time to spend on strategic decisions, and 33% of the CFOs stated that projects or initiatives have been delayed or cancelled as a result of Sarbanes-Oxley compliance.

⁸Campbell (1979) and Yosha (1995) use this argument to explain why firms may not want to go public. Other indirect costs of disclosure are discussed in the literatures on going-public and going-private decisions, e.g., Pagano et al. (1998), Roell (1996) and Lehn and Poulsen (1989).

⁹This argument is discussed in Frigo and Litman (2004) and Jensen (2002). Graham et al. (2004) report that 78% of the 401 financial executives they surveyed would give up economic value - for example not investing in positive NPV projects - in order to smooth earnings or meet earnings targets.

SEC that lead to more reliable reporting, creditors will be forced to increase their monitoring of the firm, thus increasing the cost of debt. The company may also lose its bargaining power with banks if it loses its access to other sources of external capital (Rajan (1992) develops this argument of competition in sourcing capital as a rationale for going public). Taken together with an increase in the company's cost of equity, the resulting higher cost of capital reduces the market's valuation of the company, and may result in the company foregoing profitable investments, particularly if they require external financing or using stock as a currency for potential acquisitions. Corporate profitability may also decline if the company's trade relationships with suppliers and customers, as well as its ability to hire and structure effective compensation packages for employees, suffer as a result of the lack of corporate visibility and transparency.

Finally, the company's stock is likely to suffer a decrease in liquidity when the firm goes dark. If the stock is not already traded in the Pink Sheets prior to deregistration, and thus will be delisted as a result of going dark, a loss of liquidity is to be expected based on empirical evidence provided in Macey et al. (2004), Angel et al. (2004) and Bushee and Leuz (2004) for stocks delisted to the Pink Sheets from the NYSE, Nasdaq, and the OTCBB, respectively. For stocks already trading in the Pink Sheets prior to deregistration, liquidity is still likely to decline as a result of the smaller investor base that deregistration would produce and the restricted information flow. Amihud and Mendelson (1986) argue that traders require higher returns to compensate for lower liquidity, and Amihud and Mendelson (1986), Brennan and Subrahmanyam (1996), and Eleswarapu (1997) present empirical evidence supporting this hypothesis. Thus, the expected liquidity loss should be a key factor when deciding whether to go dark.

For most public companies, it would appear that the costs associated with being dark are likely to outweigh the benefits of suspending SEC reporting. However, positive shocks to the benefits, or negative shocks to the costs, of going dark can tip the balance in favor of going dark, much in the same way as shocks to financing needs or other factors can trigger a private firm to go public (e.g., Roell, 1996). Positive shocks to the benefits of going dark may include a change in regulation, such as the passage of the Sarbanes-Oxley Act, that greatly increases the costs of being a reporting company. On a firm-specific level, the company's profitability

may decrease significantly, making the cost of reporting an increasingly higher proportion of income, potentially driving the company further into distress if it is already sustaining losses. Regarding the indirect costs associated with deregistration, if a company's shareholder base has decreased (for instance if analysts no longer cover the stock, or if there is little institutional ownership) and if liquidity has already dried up substantially, then the downside associated with going dark may be somewhat limited. These motivations for going dark are those most frequently cited by management in press releases. In deciding to go dark, management may also have taken into account that their company's growth opportunities, and thus need for external financing, have decreased. Though this decision input is unlikely to be shared with the public, investors may consider this possibility when reassessing the company's value.

Investors may also suspect that, in deciding whether to go dark, management considered factors that are of concern only to insiders of the firm. For instance, by going dark, insiders can more easily hide activities that increase their private benefits, including loans on favorable terms, generous compensation packages, or special deals with companies in which the insiders hold stakes. Going dark increases the expected value of these private benefits, and reduces the expected costs associated with preventing detection and suffering the consequences should these activities be uncovered. Even for those firms that generate little cash to directly or indirectly expropriate, management may be concerned about keeping their jobs, and a dark environment might better protect them.¹⁰ Insiders also assess the costs of going dark quite differently than do outside shareholders. There is no loss of transparency, and while liquidity decreases following the deregistration, insiders that have a significant ownership stake in the company perceive their holdings to be rather illiquid in any case.

The extent to which the insiders' perspective on the going dark decision overshadows the outside shareholders' perspective will be influenced by the strength of the firm's corporate governance. The presence of outside directors and large outside blockholders such as institutions may ensure that shareholders' interests are more fairly represented in the decision of whether to go dark. The outside shareholders' interests will also be better protected if the company

¹⁰Boehmer and Ljungqvist (2004) find that firms whose controlling shareholders enjoy large private benefits of control are less likely to go public, which is consistent with this argument. In modelling the IPO timing decision, Benninga et al. (2004) provide a model in which an entrepreneur trades off control benefits that are enjoyed only if the firm remains private against the higher valuations that diversified outside investors are willing to pay.

has more than 300 holders of record (or 500 for smaller firms), since the transaction that needs to be executed to bring down the holders of record below the maximum threshold will involve shareholder input: a reverse split requires majority shareholder approval; a tender offer gives each shareholder the option to sell his or her shares back to the company.

3.2 Going Private vs. Going Dark

Companies that go dark are often viewed as becoming “quasi-private” in the sense that, as with companies that go private, there is no longer a requirement to provide information to the SEC, and in turn to the market at large. If going private and going dark decisions were purely motivated by the direct and indirect cost savings from suspending SEC reporting, then these actions would be interchangeable but for the fact that shares of dark firms continue to be publicly quoted, and at least occasionally traded, whereas there is no public trading of the equity of private firms. This distinction is important to firms that wish to preserve some liquidity in their stock.

Evidence from past studies of going private transactions indicate that the motivations for going private go beyond the cost savings from avoiding the reporting requirement. Specifically, going private transactions are often initiated by affiliated parties who believe the company is inefficiently managed, underleveraged, or undervalued by the market.¹¹ These transactions involve restructuring the company, with concentrated ownership in the hands of management and private equity investors, and often a high level of debt. Given the necessity of raising new capital, and the legal complexities that are involved, such transactions are worthwhile only if the company has significant potential that can be more fully realized under highly incentivized management, and if the size of the firm can produce efficiency and tax benefits that outweigh the costs associated with the transaction.¹²

¹¹Lehn and Poulsen (1989) find that high free cash flow and low growth opportunity firms are more likely to go private, and that the size of the premiums are positively related to the level of free cash flow, particularly when insider ownership is low, which provides support for the free cash flow agency hypothesis of Jensen (1986). Kaplan (1989a) and Lichtenberg and Siegel (1990) also show that accounting profits increase significantly following going private transactions. Kaplan (1989b) finds that tax savings from higher interest tax shields can be an additional and significant source of value in going-private transactions. The frequently mentioned asymmetric information hypothesis, namely that affiliated shareholders may initiate going-private transactions when they view the shares as undervalued by the market, is examined by Scott (1992), who finds no support for it.

¹²Going private transactions require compliance with more stringent SEC regulations and face an increased risk of shareholder litigation, since the interests of management often conflict with those of outside shareholders.

Firms for which the costs of reporting exceed the benefits, but that are not sufficiently attractive for affiliated parties to orchestrate a going private transaction, are thus likely to go dark. Thus, relative to companies that go private, we expect that going dark firms might be smaller, more highly leveraged, and perhaps have substantially poorer operating performance that may be due to general economic or firm-specific conditions that are beyond the ability of well-incentivized management to turn around.

If we also consider these decisions from the perspective of insiders, low quality managers may have little incentive to initiate, or to help facilitate, a transaction that might in the end lead to their dismissal. Thus, even if the firm is an attractive going private target, managers who wish to entrench themselves will choose to go dark. By making their firm less visible and transparent, these managers may even reduce the likelihood of becoming a future target, though if the company's share price drops as a result of going dark, the company may become a more attractive going private candidate. The balance between the control of a firm's insiders on the one hand, and the influence of outside blockholders on the other, may thus affect the propensity of a company to go dark as opposed to go private. It is interesting to note that many firms execute a complex transaction such as a reverse-split or a tender offer to get their holders of record below 300, but yet do not go fully private. It is possible that the additional complexity and capital required to take the firm private are quite substantial. However, managerial entrenchment, private benefits, or more generally agency conflicts, might also explain this phenomenon.

Finally, our arguments suggest that a company's going dark decision should be less favorably received by the market than if it were to go private, since shareholders will infer that either the firm is not an attractive target for a going-private transaction, or that management may be keeping the firm out of the hands of new equity blockholders who might be able to increase the value of the firm.

3.3 Research Design

Our discussion above suggests two main perspectives for why firms go dark. Managers may seek to maximize long-term shareholder value by saving on the direct and indirect costs of

Allegations of breach of fiduciary duty frequently arise, and safeguards such as appraisals and an independent board committee to represent outside shareholders are often put in place to minimize the litigation risk.

SEC reporting when these costs exceed the benefits of registration. In contrast, the decision may reflect insiders' desire to protect their private benefits. We design tests that help us understand whether either, or both, of these rationales explain why firms go dark, and generally to document various economic consequences of going dark.

We first focus on deregistration induced changes in price and liquidity. We conduct an event study analysis to capture the market's reaction to firms going dark. We examine the extent to which the event returns depend on particular key variables, including changes in compliance costs and market value which measure shocks to the costs of reporting, as well as the trading venue of the stock prior to going dark. We separate out the effects of deregistration and delisting by conducting a pooled time-series regression with dummies for different event dates. We also measure changes in liquidity in the year before versus the year after deregistration, and again disentangle the separate effects attributable to going dark and delisting given that prior literature has already shown that liquidity drops as a result of delisting to the Pink Sheets.

A probit analysis is used to identify the characteristics of going-dark firms that differentiate them from those that continue reporting to the SEC even though their holders of record are low enough to qualify for deregistration. The economic arguments presented earlier in this section suggest a set of drivers that may affect the propensity to go dark, including firm size, leverage, past return, volume, growth opportunities, and variables such as insider and insitutional ownership, free cash flow, and size of accruals that can shed light on whether firms that go dark are those that are more likely to be subject to agency problems. We also use these variables to examine the key differences between going-dark and going-private firms.

4 Sample Selection and Descriptive Statistics

4.1 Going Dark Sample

Form 15 filings are available from LiveEdgar on a five-year rolling basis. Our data capture covers the period January 1998 - December 2003. Form 15 requests the filer to specify the title of each class of securities covered by the form, the title of all other classes of securities for which the filing responsibility remains, and the appropriate rule provision(s) relied upon to deregister. Based on the above information, we exclude the following three types of filers: (1)

firms that deregistered securities other than their common stock; (2) firms that deregistered their common stock, but have other public securities that are still subject to public reporting requirement; and (3) foreign companies (firms that filed Form 15 based on rule 12g-4a(2)(i), 12g-4a(2)(ii), 12h-3b(2)(i), or 12h-3b(2)(ii)). These exclusions leave us with 3915 Form 15 filings by U.S. companies.

A company may deregister its common stock for various reasons: it is acquired by or merged into another company; it is liquidated; it withdraws a security registration; it goes private; or, it can and wants to be exempt from the duty to report to the SEC. The last category of Form 15 are the “going-dark” firms that make up the core sample in our study. These firms no longer report to the SEC after filing Form 15, but they continue to have their common equity publicly traded. In addition to using information available on LiveEdgar, we used the webpages of Pink Sheets, Yahoo Finance, and OTC-Portal, as well as deletion codes in Compustat and CRSP to ensure that all firms categorized as going-dark continued trading after the Form 15 filing, that there were no other securities of the firm registered that would have required the firm to continue reporting, and that firms weren’t incorrectly categorized as having gone private by LiveEdgar.¹³ During 1998 to 2003, 380 companies filed to go dark. We used Compustat, CRSP, Compact Disclosure and Datastream to extract stock prices, volume and corporate financial and ownership information. Cusips were used to identify each company’s stock across the different databases, and database-specific identifiers, tickers and company names were used within databases. Price data was available for 287 firms in our sample (at least on and after the filing date), and financial information was obtained for 332 companies.

For every Form 15 filer in our going-dark sample, we obtain the date of the Form 15 filing. For firms that filed multiple Form 15s, we record the date of the first filing.¹⁴ In order to properly measure the stock market reaction to firms’ Form 15 filings, we search for announcements of the deregistrations in companies’ 8K filings, and in Lexis-Nexis and

¹³We check whether any financial information for these companies is posted at PinkSheets.com. Financials are available for only 11 firms in our sample. For a subsample of 50 randomly selected companies in our sample, financial statements appear on corporate websites for only six of these companies (and three of these are unaudited statements). It thus appears that little reliable financial information is provided by the companies in our going-dark sample.

¹⁴Subsequent Form 15 filings by the same company typically make minor corrections, such as slightly altering the holders of record, changing the box specifying the section code under which the deregistration is being made, or checking off an additional one of these boxes.

Bloomberg. We are able to identify announcements for 189 of the firms in our going-dark sample, as well as what we categorize as “contingent announcements” for another 30 firms that are indications (in 8K or Schedule 13E-3 filings) that a deregistration will take place under particular contingencies, such as the successful execution of a transaction to bring down the holders of record below the maximum threshold for deregistration. 49 companies in our going-dark sample file a Schedule 13E-3 prior to a Form 15.

4.2 Control Sample

We create a control sample to use in our probit analysis that consists of Compustat firms during fiscal years 1998-2003 that have fewer than 300 holders of record of their common equity, or fewer than 500 holders if the company’s total assets have not exceeded \$10 million at the end of the company’s three most recent fiscal years. Firms are required to report their number of equity holders in item 5 of 10K reports. While most report their holders of record, some appear to report an estimate of their beneficial, rather than record, holders. Thus, there are some firms that should be in our sample that are excluded given incorrect reporting in their 10K. However, there is no reason to believe that this would induce any bias in our probit analysis. We exclude firms that are less than one year old because they are not eligible to deregister, and firms with fewer than 500 holders of record if asset value information was not available for each of the previous three fiscal years.¹⁵ Our control sample consists of 2182 firms.¹⁶

While firms that do not satisfy the holder of record criteria could potentially qualify for deregistration by executing a transaction such as a reverse-split to reduce their holders of record, they are much less likely to be in a position to deregister than firms within our control sample given the complexity and costs associated with such transactions. Thus, our control sample allows us to better analyze what firm characteristics appear to be associated with the going-dark decision for those firms that can deregister.

¹⁵We also exclude firms with SIC code equal to 99, and assets less than \$100,000. These firms are shell holding companies that are vehicles for acquiring companies, and thus whose asset size and other firm characteristics change dramatically in years in which a transaction takes place, yielding extreme outliers whose economic interpretation may be misleading.

¹⁶Some firms satisfy the holders of record criteria for more than one year during the 1998-2003 period, so there are a total of 7380 firm-year observations in our probit analysis associated with the control sample.

4.3 Going Private Sample

There does not appear to be a universally accepted definition of “going private” as the term is used in the academic literature and in practice. Existing going-private studies appear to use different selection criteria for constructing their samples, including announcements of going-private deals in the press, or classification as going-private transactions by third parties with unreported criteria. Going private typically denotes a transaction initiated by employees and/or existing investors that concentrates ownership in the hands of a few sets of investors who do not seek to have their equity publicly traded (at least in the short run). This broadly corresponds to cases where Schedule 13E-3 filings are made in connection with “transactions initiated by affiliates of the company.” We follow more closely the SEC’s definition of going-private based on Rule 13e-3, as do DeAngelo et al. (1984) and Engel et al. (2004).

We use LiveEdgar to identify companies that file a Schedule 13E-3 followed by a Form 15, indicating apparent completion of the going-private transaction culminating in deregistration of the stock (Engel et al. (2004) appear to follow a similar procedure). However, our sample selection process is unique in two respects. First, we recognize that there are cases where companies file Schedule 13E-3s in connection with a transaction such as a reverse split that reduces its holders of record below 300, but yet the affected companies keep their stock traded in the Pink Sheets. There are 49 such firms that are part of our going-dark, rather than going-private, sample since the company’s intention appears to be to suspend reporting rather than to take the company fully private. Second, some companies already have fewer than 300 holders of record and do not trade on a national exchange (nor are they quoted in Nasdaq), and thus need not file a Schedule 13E-3 in connection with a transaction that takes the company fully private. Based on information available on LiveEdgar, we identify 10 such going-private firms that file Form 15 yet do not need to file Schedule 13E-3. Using this selection process, we construct a sample of 406 going-private firms. Price data is available for 267 of these firms for at least the day of and the days after the filing date (and for 312 firms for at least the day of and the day before the filing date). Financial information is available for 358 of the firms in our going-private sample.

4.4 Descriptive Statistics

Univariate statistics describing our going-dark, going-private and control samples are shown in Tables 1, 2 and 3. Panel A of Table 1 shows the frequency of going-dark and going-private deregistrations over the years in our sample. Note that approximately half of the going-dark deregistrations in the six-year sample period occurred in 2003. The Sarbanes–Oxley Act may be the catalyst for this increased deregistration activity, either because of the additional costs associated with compliance, or because of the additional responsibilities, monitoring, and legal consequences it imposes on executives and directors. However, this clustering may also be affected by the weak stock price performance during the preceding three years, a relation that we will investigate later through the probit analysis. Note that while the going-dark deregistrations spike during 2003, there does not appear to be a similar increase in the incidence of going-private transactions during that year.¹⁷

Panel B of Table 1 describes the trading history of dark firms after their date of deregistration, based on information from webpages of Yahoo Finance, Pink Sheets, and OTC-Portal, as well as from Datastream. The last trading date was not available for 32 of our 380 firms. The table shows that most dark firms trade for many years after filing their deregistration. For instance, 283 of the 380 going-dark firms were still traded after June 30, 2004. Another 34 companies appear to have their stock quoted in the OTC markets as of August 31, 2004, but did not trade during the June 30 to August 2004 period, and thus some of these may effectively be no longer traded. Of those companies that ceased trading altogether at some point after deregistration, 9 were acquired, 3 went private, 9 were liquidated, 6 underwent a bankruptcy reorganization, and 5 were deleted because of inactive trading.

Table 2 shows the distribution of firms across different industry SIC codes for the going-dark and going-private samples. There is broad representation across major industry groups, and there does not appear to be any significant clustering of firms within a given industry that might affect the interpretation of our results.

Some key characteristics of the firms in our going-dark sample are compared against those of the going-private and control samples in Table 3. The variables are based on financial

¹⁷The frequencies shown are based on the date of the first filing of Form 15. Therefore, some of the going-private transactions that were initiated in 2003, but that were not completed to the point of deregistering the firm's common stock, are not included in the count for 2003.

information obtained from the last 10K filing of each firm (in the case of the control sample, this is the 10K for the fiscal year for which the holders of record satisfied the maximum threshold criterion required for inclusion in our sample). Definitions of the variables are provided in the table description.

The univariate statistics suggest that going-dark firms appear to be significantly smaller than control sample firms as measured by both total assets and market value of equity. They seem to have underperformed relative to the control sample firms as measured by past-year stock return. They have higher leverage, and appear to face a recent increase in short term debt. Growth opportunities, as measured by R&D intensity, are small for going-dark firms. In contrast, free cash flow for going-dark firms is larger than for the control sample. Institutional ownership is much lower for the going-dark firms, perhaps given that these are smaller companies, while insider ownership is higher.

Going-private firms are much larger companies, and have significantly higher recent market returns than going-dark firms. However, note from Panel A of Table 1 that the time distribution of these two samples is different, and the clustering of going-dark firms in 2003 may at least partially explain this performance differential. We will control for this timing difference in the probit analysis. Insider holdings for going-private and going-dark firms are comparable, but going-private firms have significantly higher institutional holdings.

5 Results

5.1 The Effects of Going Dark on Stock Price

If the decision to go dark induces a change in the company's value, a stock price change should be observed when investors learn of the company's decision. We conduct an event analysis to study the stock price reaction to going dark, looking at stock price reactions on the date the firm files Form 15, and the date it announces its decision to deregister.¹⁸ We align our sample in event time based on three possible events: the Form 15 filing; the earlier of the announcement or the filing; and the earliest of the contingent or firm announcement or the filing. While we focus primarily on the event that captures the earlier of the announcement

¹⁸Since the SEC seems to routinely approve qualified deregistration applications, the date at which the SEC approves the company's deregistration filing is not particularly noteworthy.

and filing dates, the alternative event dates provide some robustness checks.

In Table 4, we report cumulative returns for three different windows around each event date: the standard $[0,1]$ window; the slightly longer $[0,2]$ window to allow for slower dissemination of information for these less visible and infrequently traded stocks; and a two-week window surrounding the event date, again to more broadly capture lagged reactions, possible leakage of information prior to the event date, and the relatively low liquidity of these stocks. For the $[0,1]$ window, we report the raw cumulative return, and also calculate cumulative abnormal returns using a simple market adjusted return based on the equally-weighted CRSP market index, and using the corresponding size decile portfolio returns. Both the market and size adjusted returns are found to be very close to the raw returns (for all three event windows), and further refinements of the abnormal returns calculation (e.g. adjusting for the beta of each stock) yield negligible differences in the CAR computations. Given the low capitalization of the firms in our sample, cumulative returns are calculated based on a buy and hold strategy (see MacKinlay (1997) and Blume and Stambaugh (1983)). Since some of the stocks in our sample have very low prices which yield extreme return observations on both tails, we exclude firms trading for prices below \$.001 on a particular day, and truncate the top and bottom .5% tail of the return distribution. We follow a similar procedure in our time-series regressions reported below.

The event window returns are highly significant and economically large. For the event that captures the earlier of the announcement and filing dates, the cumulative abnormal return (using the size adjustment) is -8.7% for the $[0,1]$ window, -11.3% during the $[0,2]$ window, and -12.5% over the $[-5,5]$ window. The percentage of event returns that were negative across all going-dark firms was approximately 70% for each of the three events examined. Given that many of the stocks in our sample are relatively illiquid, we explore whether price pressure might explain the highly negative returns, though the fact that returns become more negative over the longer event periods ($[-5,5]$ vs. $[0,1]$) indicates that the negative returns do not get quickly reversed. While we find (in unreported results) that the trading volume spikes during the event windows relative to the stocks' baseline levels of volume, there is no evidence of significantly positive returns in the days following the event windows which would reverse the negative returns surrounding the event date.

The highly negative event window returns indicate that shareholders do not react favorably to the news of deregistration. Shareholders may believe that the decision to deregister is in the best interests of insiders, who focus on protecting their benefits of control, and do not internalize all the costs imposed on outside shareholders, such as the expected drop in liquidity and transparency. An alternative explanation is that the decision to deregister is triggered by a change in the cost-benefit tradeoff to reporting, such as a decrease in the firm's growth opportunities, and that this change in the underlying fundamentals of the company comes as news to the market. If insiders believe that this information will be revealed through their continuing disclosure, they may decide to save on costs of reporting even if investors will immediately infer the negative news.

To try to gain deeper insight into the potential causes of the negative stock price reaction surrounding deregistration, we bifurcate our sample using different criteria, as shown in Panel B of Table 4. Firms going dark after the passage of SOX suffer a larger negative price drop (significant at the 5% level) than firms going dark prior to SOX. Judging from the higher incidence of going dark deregistrations following the passage of SOX, coupled together with a seemingly benign explanation given for this activity in the form of increased cost savings from deregistering, one would expect to see a significantly smaller stock price drop than in the pre-SOX period.¹⁹ The fact that we find exactly the opposite relation suggests that shareholders believe that managers may be seeking refuge in a "lights-out" environment that permits increased control benefits and decreased exposure to legal liability.

We observe that firms with lower stock price (below the \$1 threshold) are more negatively impacted by going-dark. This result again seems to run counter to the argument that deregistrations are driven by public companies trying to avoid the high costs of reporting. If that were indeed the key driving force, then one would expect firms with lower stock price - a proxy for low value - to benefit more from deregistering given that the cost savings are proportionately higher for such firms.²⁰ Deregistration by low-priced firms may also be viewed by the market

¹⁹There also appears to be at least casual evidence that the Pink Sheets market has become more active in recent years (e.g. Bushee and Leuz (2004)). This suggests that the liquidity drop associated with deregistration for those firms not already traded on the Pink Sheets should be less severe during the post-SOX period, and thus the post-SOX price reaction should be less negative, which makes our finding of more negative returns even more striking.

²⁰Using two subsamples of firms sorted by market value of equity, we found an almost identical result.

as a signal that the firm anticipates that it will not remain listed, or will not become eligible to be listed, outside the Pink Sheets, and, given this prospect, has little incentive to continue reporting. In contrast, the deregistration decision of firms whose stock price does not preclude them from being listed on exchanges outside the Pink Sheets may be viewed as being more discretionary. While the decision may still benefit insiders at the expense of outside shareholders, and thus negatively impacts the stock price, it may not convey as much of a negative signal regarding the firm's financial health.

We find that companies that are in bankruptcy proceedings at the time of deregistration have a somewhat attenuated negative stock price reaction relative to other firms in our sample (though, given the size of our bankruptcy subsample, the difference is not statistically significant). This could be due to the fact that managers of bankrupt firms are carefully monitored, and thus shareholders believe that it is unlikely that going dark will enable insiders to increase their control benefits. The significantly negative return for the bankruptcy firms indicates, however, that the decision to go dark conveys to the market that the firm's situation is not turning around for the better.

The subsample of firms that file Schedule 13E-3 prior to deregistering experience only a small stock price drop at the earlier of the announcement and filing dates. The insignificant price reaction may reflect that the 13E-3 transactions involved, such as a reverse split or tender offer, require shareholder consent, and thus provide shareholders with some protection.

Finally, while 208 firms in our sample trade in markets other than the Pink Sheets prior to going dark, 78 firms are already trading in the Pink Sheets at the time of deregistration. Panel B of Table 4 reports that the market's reaction to going dark is quite similar for firms already trading in the Pink Sheets compared to those that are not. If a loss in liquidity from being delisted were the only major concern of shareholders of going-dark firms, one would expect firms already trading in the Pink Sheets to be rewarded by the market, rather than penalized, for going dark.

This last result from Table 4 provides some indication that deregistration is not "just" a signal of a future delisting (for the majority of firms that are not already traded in the Pink Sheets), but rather that deregistration has a distinct effect from delisting. To more carefully address the separate effects of going dark and delisting, we conduct a set of pooled

cross-sectional time-series regressions to capture price effects associated with our going dark sample on specific dates of interest. In Panel A of Table 5, we set *Dereg.* equal to one for the day of, and the day after, the earlier of the filing and announcement date of deregistration. Similarly, *Delist* is set equal to one for the day of, and the day after, a company delists from one exchange to another during the year before, and the 50 days following, the deregistration date. *Delist to PS* and *Delist to OTCBB* are similarly defined for delisting to the Pink Sheets and OTC Bulletin Board, respectively. In Panel B, we separately identify price effects on the announcement and filing dates of deregistration. All regressions in Table 4 control for the daily returns to the corresponding size decile portfolio for each firm in our sample. We report Newey-West (1987) corrected standard errors using up to 5 lags to account for pooling, potential serial correlation in returns, and heteroscedasticity. We also check whether our inferences are affected by clustering of event days in calendar time. In untabulated regressions, we find that the significance levels are very similar and the inferences are unchanged if we cluster standard errors by calendar date.

The results clearly demonstrate that going dark and delisting have separate, and significantly negative, price effects. Panel A shows that firms that delist to the Pink Sheets suffer a larger price decline at the time of delisting than those delisting to the OTCBB, as expected given the relative standing of these markets in the trading hierarchy. While some of these delistings may be involuntary, occurring before the announcement or filing dates, others occur after, and as a result of, deregistration. Since these delistings (to the Pink Sheets) are anticipated, it is interesting that there is a significantly negative price reaction on those dates. Panel B shows that there is a price reaction on the filing date as well as both contingent and final announcement dates. These results point to the fact that investors may become aware of the deregistration (and associated delisting for some firms) at different times as these firms are not widely or carefully followed. Interestingly, the reaction at the 13E-3 filing date is positive (significant at the 10% level), which may again reflect that shareholders are protected through these transactions, and will benefit if, for instance, there is a tender offer at a price premium.

Given that firms that wish to avoid direct and indirect costs of reporting may choose to go private rather than go dark, it is useful to document the stock market's reaction to firms' going-private decisions during the same time period as for our going-dark sample. In Table

6, we show the cumulative returns around a compound event day which is the earliest of the first Schedule 13e3 filing date, the announcement date (if there is one), and the Form 15 filing date. As expected, the cumulative returns across all event windows (and using either raw, market- or size-adjusted returns) are significantly positive.²¹ For the subsample of firms that have announcements, the cumulative return in the [0,1] window is approximately 10% (not reported in Table 5). Since outside holders' shares are typically bought out at a premium in a going-private transaction, as reflected in the event window returns we observe, shareholders of firms that go dark are comparatively disadvantaged. This appears to be particularly the case after SOX, where returns for going-private firms become more positive (though the difference is not statistically significant), while returns for going-dark firms become more negative.

5.2 The Effects of Going Dark on Liquidity

The effect of deregistration on liquidity is reported in Table 7. In Panel A, we compare the mean daily turnover (volume of shares traded / shares outstanding) in the year before versus after the Form 15 filing date (more specifically, the means during the [-250, -6] and [6, 250] windows).²² Inverting prior disclosure studies, we expect that a lower commitment to disclosure should result in decreased liquidity (e.g., Leuz and Verrecchia (2000)). Consistent with this conjecture, we find an economically and statistically significant drop in liquidity as a result of deregistration, even if we control for firms' market capitalization ($\text{Log}(MV)$) and stock price volatility (Std.Dev.).

To investigate whether this drop may be due to a contemporaneous delisting effect, we analyze (in Model 4) whether the effect of deregistration on turnover is the same whether or not the firm is already traded on the Pink Sheets at the time of deregistration ($\text{Pink}=1$ if the firm is already traded on the Pink Sheets). Given that the two variables in the regression involving Pink are insignificant, the deregistration effect appears to hold regardless of whether the stock changes trading venue or not.²³ In Panel B of Table 7, we report that measuring

²¹The cumulative return during the [-1,0] window is approximately 3%, based on a slightly larger sample of 312 firms, given that some firms are no longer traded the day after the filing.

²²The top .5% of the volume data has been truncated.

²³We also conduct a panel time-series regression of turnover on each day in the [-250,250] sample against separate deregistration and delisting event dummies, as well as a time trend variable. The results (not reported here) are consistent with those in Table 7, in that liquidity drops significantly as a result of deregistration, even after controlling for delisting.

liquidity by the percentage of days in which trading occurred during the periods before and after deregistration leads to similar results as using turnover.²⁴

5.3 Probit Analysis of the Going Dark Decision

Table 8 reports results of probit regressions that identify characteristics associated with firms that go dark, relative to the control sample of firms (in Panel A), and going-private firms (in Panel B). Industry controls based on the classification in Campbell (1996) and year controls are included in all the regressions, but coefficients for these dummies are not reported. A positive (negative) coefficient for a particular firm characteristic means that going-dark firms have a higher (lower) value of the characteristic relative to firms in the control sample. Panel A shows that going-dark firms are significantly smaller than firms that choose to continue reporting despite satisfying the threshold rule for deregistration.²⁵ Going-dark firms also appear to have weaker recent stock market performance relative to the control sample firms. Going-dark firms also have significantly higher leverage, and higher increases in the short-term component of debt. Growth opportunities, as measured by R&D intensity, appear to be less promising for going-dark firms than for the control sample firms.²⁶

These findings point to a large number of going-dark firms exhibiting signs of economic and financial distress. Such firms would be least able to deal with the economic burden of reporting. However, given the negative announcement and filing date returns reported earlier, shareholders are hardly relieved by the company's decision to go dark. While they understand the benefits of the reporting cost savings, they also infer that the level of distress may be greater than they had anticipated.

Whether distressed or not, the firms' insiders may also have ulterior motives, which may dominate other considerations, in particular if the company has weak governance. To explore this agency problem hypothesis, we examine the effect of several financial and ownership vari-

²⁴In unreported tests, we find similar results when using median turnover rather than mean turnover, and also if we use (the log of) share and dollar volume. When using dollar volume, we also control for stock price performance as a robustness check, and find that the results are unchanged, other than size becoming insignificant in some of the regressions.

²⁵Total Assets is used in the main regressions to measure size since the sample firms differ considerably in terms of their capital structure, and Market Value and Return may capture similar effects. In unreported regressions, however, we have found consistent results using $\text{Log}(\text{MV})$ rather than the book value of assets.

²⁶In unreported regressions, we find consistent (and more significant) results using externally financed asset growth and R&D intensity as alternative proxies for growth.

ables. We find that higher accruals are associated with the propensity to go dark. Given the association that has been established between higher accruals and poor earnings quality (Leuz - cite), this suggests that managers who use accounting flexibility to paint a healthier image of their company are more likely to pursue an alternative way of obscuring poor performance, namely going dark. Free cash flow also has a positive relation to going dark. Extending the standard agency view of free cash flow, managers seeking to misuse free cash flow would have a stronger incentive to go dark the larger the level of this cash flow. This is particularly the case when future growth opportunities are small, which is consistent with the negative coefficient of the cross-variable $FCF * R\&D$. Finally, we also find that the presence of stronger governance, as measured by the size of block ownership, reduces the relationship between high free cash flow and the likelihood of going dark. This too suggests that there is an agency problem underlying the going-dark decision, which can be mitigated by stronger governance. Unfortunately, the low level of institutional ownership among going-dark firms contributes to the lack of strong monitoring by outside shareholders.²⁷

The probit analysis in Panel B indicates that there are some systematic differences between firms that choose to go dark and those that go private. Going-dark firms are significantly smaller than going-private firms. As mentioned earlier, there needs to be sufficient scale in the transaction for the efficiency and potential tax gains to outweigh the substantial costs associated with taking a company private. The past return of going-dark firms is also much lower than that of the going-private firms. To the extent that this poor performance is driven by firm-specific problems which are hard to resolve simply by restructuring the company and providing stronger incentives to management, then these firms may simply not be as attractive candidates as the going-private firms. In contrast, firms that may have substantial free cash flow, but are not employing it efficiently, might be taken private as a mechanism to improve efficiency. Consistent with the earlier literature on going-private transactions, we do find that going-private firms have high free cash flow, significantly higher than that of the going-dark firms.

The probit regressions also show that stronger presence of institutional holders tends to

²⁷The very low levels of institutional ownership in going-dark firms may also be symptomatic of a lack of liquidity in the stock, suggesting that the further decline in capital market activity from going dark may not be viewed by management as an important consideration when deciding to go dark.

lead firms to go private rather than go dark. Institutions likely perceive that cashing out in a going-private transaction, or continuing to invest in the restructured firm, will be preferable to holding on to illiquid stock of a dark firm. The fact that the coefficient of the Institution variable is significantly negative indicates that institutions may influence the firm’s decision to go private rather than go dark. Finally, note that firms with more shareholders appear to go private rather than go dark. Companies with more than 300 (or 500 for smaller firms) holders of record will need to reduce their record holders through a transaction such as a tender offer before deregistering. This requires the approval of shareholders, who will be more supportive in the case of a going-private transaction since they will likely benefit from the transaction.²⁸

6 Conclusions

We analyze what motivates firms to go dark, and how markets respond to this action. While it is difficult to rule out the often-cited benign explanation that companies are simply trying to cut costs, we find results that cast doubt on this rationale. Stock prices react quite negatively to firms’ decisions to go dark, and smaller firms and firms deregistering after the passage of the Sarbanes–Oxley Act experience even sharper drops due to going-dark filings. While these results do not preclude cost savings as one of the rationales for going dark, there appear to be less benign forces at work.

At a minimum, insiders may not be fully internalizing the impact of decreased liquidity and transparency on the outside shareholders when deciding to go dark. Of greater concern, insiders may be using the veil of deregistration in order to increase their private control benefits and decrease their legal risk. While the Sarbanes-Oxley Act doesn’t appear to be pushing out stronger firms from the reporting system, it may be leading managers of poorly performing firms to go dark, having the perverse effect of decreasing transparency, and exacerbating agency problems, at least for a segment of the market. A further indication that going-dark may be related to insiders’ control benefits is our finding that firms that are subject to the increased

²⁸While not reported in Table 8, the time dummies in the Panel B regressions have insignificant coefficients, in contrast to corresponding coefficients in Panel A. This is consistent with the observation made earlier in the context of Panel A of Table 1 that the frequency of going-private deregistrations is relatively constant through time during our sample period, in contrast with going-dark registrations that have become much more common recently, likely as a result of SOX.

scrutiny of institutional owners are more likely to go private rather than go dark.

An alternative explanation for the negative share price reaction surrounding deregistrations may be that shareholders infer a negative signal about the firm's future growth prospects. If managers recognize that shareholders will soon become aware of the firm's diminished prospects through its reporting, then it may decide to save on reporting costs, even if investors will immediately infer the negative news. We do find that stronger performing firms appear to go private rather than go dark during our sample period. Thus, to the extent that investors view firms as having the choice to go dark or go private, the choice of the former may well explain the associated negative price reaction.

References

- Amihud, Y. and Mendelson, H. (1986). Asset pricing and the bid-ask spread. *Journal of Financial Economics*, 17:223–249.
- Angel, J., Harris, J., Panchapagesan, V., and Werner, I. (2004). From pink slips to pink sheets: Market quality around delisting from Nasdaq. *Ohio State University Working Paper*.
- Barry, C. and Brown, S. (1984). Differential information and the small firm effect. *Journal of Financial Economics*, 13:283–294.
- Basak, S. and Cuoco, D. (1998). An equilibrium model with restricted stock market participation. *Review of Financial Studies*, 11:309–341.
- Benninga, S., Helmantel, M., and Sarig, O. (2004). The timing of initial public offerings. *Journal of Financial Economics*.
- Blume, M. and Stambaugh, R. (1983). Biases in computed returns: An application to the size effect. *Journal of Financial Economics*, 12:387–404.
- Boehmer, E. and Ljungqvist, A. (2004). On the decision to go public: Evidence from privately-held firms. *NYU Working Paper*.
- Brennan, M. and Subrahmanyam, A. (1996). Market microstructure and asset pricing: On the compensation for illiquidity in stock returns. *Journal of Financial Economics*, 41:441–464.
- Bushee, B. and Leuz, C. (2004). Economic consequences of SEC disclosure regulation. *Journal of Accounting and Economics*, forthcoming.
- Campbell, J. (1996). Understanding risk and return. *Journal of Political Economy*, 104:298–345.
- Campbell, T. (1979). Optimal investment financing decisions and the value of confidentiality. *Journal of Financial and Quantitative Analysis*, 14:913–924.
- Coles, J., Loewenstein, U., and Suay, J. (1995). On equilibrium pricing under parameter uncertainty. *Journal of Financial and Quantitative Analysis*, 30:347–364.

- DeAngelo, H., DeAngelo, L., and Rice, E. (1984). Going private: Minority freezeouts and stockholder wealth. *Journal of Law and Economics*, 27:367–401.
- Doidge, C., Karolyi, G., and Stulz, R. (2003). Why are foreign firms listed in the U.S. worth more? *Ohio State University Working Paper*.
- Easley, D., Hvidkjaer, S., and O’Hara, M. (2002). Is information risk a determinant of asset returns? *Journal of Finance*, 57:2185–2221.
- Easley, D. and O’Hara, M. (2000). Information and the cost of capital. *Cornell University Working Paper*.
- Eleswarapu, V. (1997). Cost of transacting and expected returns in the Nasdaq market. *Journal of Finance*, 52:2113–2127.
- Engel, E., Hayes, R., and Wang, X. (2004). The Sarbanes-Oxley act and firms’ going-private decisions. *University of Chicago Working Paper*.
- Frigo, M. and Litman, J. (2004). Give my regrets to Wall Street. *Harvard Business Review*, February:43–51.
- Goldstein, L. (2002). Letter to SEC: File No. S7-40-02.
- Graham, J., Harvey, C., and Rajgopal, S. (2004). The economic implications of corporate financial reporting. *Duke University Working Paper*.
- Healy, P. and Palepu, K. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics*, 31:405–440.
- Jensen, M. (1986). The agency costs of free cash flow: Corporate finance and takeovers. *American Economic Review*, 76.
- Jensen, M. (2002). Just say no to Wall Street. *Journal of Applied Corporate Finance*, 14:41–46.
- Kaplan, S. (1989a). The effects of management buyouts on operating performance and value. *Journal of Financial Economics*, 24:217–254.

- Kaplan, S. (1989b). Management buyouts: Evidence of taxes as a source of value. *Journal of Finance*, 44:611–632.
- Lehn, K. and Poulsen, A. (1989). Free cash flow and stockholder gains in going private transactions. *Journal of Finance*, 44:771–787.
- Leuz, C. and Verrecchia, R. (2000). The economic consequences of increased disclosure. *Journal of Accounting Research*, 38:91–124.
- Lichtenberg, F. and Siegel, D. (1990). The effect of leveraged buyouts on productivity and related aspects of firm behavior. *Journal of Financial Economics*, 27:165–194.
- Macey, J., O’Hara, M., and Pompillo, D. (2004). Down and out in the stock market: The law and finance of the delisting process. *Cornell University Working Paper*.
- MacKinlay, A. (1997). Event studies in economics and finance. *Journal of Economic Literature*, 35:13–39.
- Marosi, A. and Massoud, N. (2004). Why do firms go dark? *University of Alberta Working Paper*.
- McKay, P. (2003). Though their stock is publicly held, companies adopt a private mentality. *Wall Street Journal*, July 28:C1.
- Merton, R. (1987). A simple model of capital market equilibrium with incomplete information. *Journal of Finance*, 42:483–510.
- Miller, G. (2002). Earnings performance and discretionary disclosure. *Journal of Accounting Research*, 40:173–205.
- Nelson, S. (2003). Petition for commission action to require Exchange Act registration of over-the-counter equity securities. July 3.
- Nyberg, A. (2003). Sticker shock: The true cost of Sarbanes-Oxley compliance. *CFO*, September:51–62.
- Pagano, M., Panetta, F., and Zingales, L. (1998). Why do companies go public? An empirical analysis. *Journal of Finance*, 53:27–64.

- Rajan, R. (1992). Insiders and outsiders: The choice between informed and arm's-length debt. *Journal of Finance*, 47:1367–1400.
- Roell, A. (1996). The decision to go public: An overview. *European Economic Review*, 40:1071–1081.
- Wang, J. (1993). A model of intertemporal asset prices under asymmetric information. *Review of Economic Studies*, 60:249–282.
- Yosha, O. (1995). Information disclosure costs and the choice of financing source. *Journal of Financial Intermediation*, 4:3–20.

Table 1: Descriptive Statistics

Panel A: Time Trend of Deregistration Filings

This panel reports the yearly frequency of going-dark and going-private Form 15 filings. Going-dark firms subsequently trade on the OTC markets, while going-private firms do not. The penultimate column shows the number of firms for which we have daily price data on and after the Form 15 filing date. The last column shows the number of firms for which we have annual financial data at the fiscal year end before deregistration.

Year	1998	1999	2000	2001	2002	2003	1996-2003	Daily Price	Financial
Going-Dark	28	30	14	43	67	198	380	287	332
Going-Private	27	60	83	91	70	75	406	267	358

Panel B: Trading After Going-Dark Deregistrations

This panel presents trading information of going-dark firms after deregistration. We use the webpages of Pink Sheets, Yahoo Finance, and the OTC-portal, and daily price and volume data from Datastream and CRSP to identify the last available trading date for our going-dark firms. Active Firms are those which appear to be quoted for trading in an OTC market as of 8/31/2004, based on information in the webpages or in Datastream.

Year	Total # of Firms	Last Trade # of Firms	# of Firms With Last Trade After							Active Firms	
			12/31/98	12/31/99	12/31/00	12/31/01	12/31/02	12/31/03	6/30/04	6/30/04	# of Firms
1998	28	23	23	23	22	22	22	20	19	23	23
1999	30	25	25	25	25	23	21	17	15	19	19
2000	14	14	14	14	14	14	14	12	12	13	13
2001	43	41	41	41	41	39	33	30	30	35	35
2002	67	67	67	67	67	67	67	59	53	60	60
2003	198	178	178	178	178	167	167	167	154	167	167
Total	380	348	348	348	348	308	308	283	283	317	317

Table 2: Industry Distributions

This table reports the distribution of deregistration events across industry segments. Firms in the going-dark sample and in the going-private sample are classified into 23 industry segments based on 2-digit or 3-digit SIC codes, as detailed in the table. For each industry, we report both the number of firms and the percentage in the total sample (in parentheses).

Industry Segments	Going-Dark	Going-Private
Agriculture (100-900)	0	3
Mining (1000-1400)	3	8
Construction (1520-1731)	9	6
Food & Tobacco (2000-2111)	1	12
Fabrics & Textile Products (2200-2390)	4	10
Wood & Furniture (2400-2590)	2	6
Paper & Printing (2600-2790)	9	10
Chemicals (2800-2990)	12	13
Materials & Related Products (3011-3490)	14	11
Industry Manufacturing (3510-3569, 3578-3590, 3711-3873)	26	26
Computer-related Hardware (3570-3577)	8	6
Electronics (3600-3695)	15	6
Miscellaneous Manufacturing (3910-3990)	10	6
Transportation (4011-4731)	5	7
Telecommunications (4812-4899)	6	9
Utilities (4900-4991)	1	6
Wholesales (5000-5190)	21	27
Retails (5200-5990)	25	31
Financial Services (6021-6799)	66	65
Services (7000-7361, 7380-7997, 8111-8744)	43	47
Software & Programming (7370-7377)	41	31
Healthcare Services (8000-8093)	8	9
Others (8880-9995)	3	3
Total	332	358

Table 3: Descriptive Statistics

This table presents summary statistics describing characteristics of the going-dark sample, the control sample, and the going-private sample. Every firm in the control sample has holders of record below 300 (or 500 if the firm's assets were below \$10 million at the end of the three previous fiscal years). All variables are measured as of firms' last fiscal year available prior to going dark or private (and as of the fiscal year in which control firms are included in the sample). The table shows the median and mean (in parentheses) of each characteristic variable. *Assets* is the total book value of assets of the firm. *Market Value* is the company's equity market capitalization. *Past-year Return* is the return to the company's common stock over the last fiscal year. $\Delta(Volume)$ is percentage change in the number of shares traded over the last fiscal year. *R&D Intensity* is R&D expenditures over assets. *Leverage* is the ratio of long-term debt to assets. $\Delta(ST Debt)$ is the change in short-term debt (current portion of long-term debt over total assets) during the last fiscal year. *Free Cash Flow* is operating income before depreciation net of income tax, interest expense and dividend payment. *Scaled Accruals* is three-year median accruals (change in non-cash current assets minus change in current liabilities (excluding short-term debt) minus depreciation), scaled by operating cash flow. *Holdings of Record* is the number of holders of record reported by the company in their 10K. *Insider* is the percentage ownership of officers and directors. *Block* is the percentage ownership of shareholders who own at least 5% of outstanding equity. *Institution* is the percentage ownership of institutional owners. We report the z statistics for Wilcoxon tests that compare characteristics of the going-dark sample with those of the control and going-private samples. **, *, † indicate significance levels of 1, 5, and 10%, respectively.

	Going-Dark	N	Control Sample	N	Wilcoxon z	Going-Private	N	Wilcoxon z
<i>Financials</i>								
Assets (\$M)	13.94 (155.78)	332	46.95 (316.19)	7380	-7.98**	105.63 (805.92)	358	-12.36**
Market Val (\$M)	3.36 (16.52)	305	44.24 (258.55)	7300	-18.77**	42.16 (357.17)	325	-14.62**
Past-year Return	-0.40 (-0.08)	286	-0.07 (0.38)	7085	-7.92**	-0.13 (0.06)	316	-5.75**
Δ (Volume)	-0.22 (0.36)	252	0.06 (0.75)	6983	-5.66**	-0.11 (0.03)	309	-1.25
R&D Intensity	0.00 (0.05)	325	0.00 (0.08)	7305	-6.86**	0.00 (0.03)	358	1.15
Leverage	0.05 (0.18)	301	0.03 (0.17)	7302	1.44	0.12 (0.22)	342	-3.05**
ST Debt	0.01 (0.08)	304	0.00 (0.04)	7337	3.68**	0.00 (0.04)	346	2.33*
Δ (ST Debt)	0.00 (0.02)	297	0.00 (0.01)	7086	2.53*	0.00 (0.01)	344	2.15*
Free Cash Flow	-0.08 (-0.27)	291	0.01 (-0.33)	6505	-5.80**	0.04 (-0.02)	307	-9.69**
Scaled Accruals	0.89 (1.47)	289	0.59 (1.23)	6562	4.22**	0.76 (1.52) [†]	306	0.58
<i>Ownership</i>								
Holders of Record	304 (737)	292	154 (166)	7380	12.94**	700 (291480)	339	-6.67**
Insider (%)	19.05 (27.77)	262	15.23 (23.30)	5525	2.07*	19.41 (29.42)	308	-0.17
Block (%)	47.52 (46.46)	264	46.95 (46.80)	5537	-0.33	58.89 (54.66)	311	-3.17**
Institution (%)	0.82 (6.93)	255	18.77 (28.28)	5508	-13.65**	12.77 (21.35)	308	-9.03**

Table 4: Cumulative Deregistration Returns

Panel A: Full Sample Event Returns

This panel reports cumulative returns around three different event dates and over three different event windows. In addition to Raw cumulative returns, we report size-adjusted and market-adjusted cumulative abnormal returns. Filing date denotes the date of the Form 15 filing. Min(Ann., Filing) means the earlier between the Form 15 filing date and the deregistration announcement date. Min(Ann., Ann.-C, Filing) means the earliest of the Form 15 filing date, the deregistration announcement date, and the contingent announcement date (if one exists). All the 380 firms in the going-dark sample have Form 15 filing dates. 189 firms have final deregistration announcement dates, and 30 firms have contingent deregistration announcements. The numbers of observations used to compute mean cumulative returns are shown in the second-last column. The number of size-adjusted cumulative abnormal returns that are negative for the [-5,5] event window is shown in the last column. The Brown-Warner t-statistics for two-sided tests are presented in parentheses. **, *, and † indicate significance levels at 1, 5, 10%, respectively.

	Raw	Market-Adj.	Size-Adjusted	N	# of Negative
	[0,1]	[0,1]	[0,2]		[-5,5]
Filing Date	-0.064 (-6.98)**	-0.065 (-7.21)**	-0.093 (-7.69)**	286	206
Min (Ann., Filing)	-0.085 (-8.46)**	-0.087 (-8.69)**	-0.113 (-8.90)**	287	203
Min (Ann., Ann.-C, Filing)	-0.087 (-8.55)**	-0.088 (-8.76)**	-0.108 (-8.54)**	285	203

(Table 4 continued)

Panel B: Sub-sample Event Returns

This panel reports event window returns for various subsamples. CARs are the cumulative abnormal returns during the [0,1] window surrounding the earlier of the announcement or the filing date of deregistration. Post-SOX denotes the period beginning 8/1/2002. Price is the firm's average stock price during event days [-33,-3]. Return is the one-year return over event window [-253, -3], and Median denotes the median return over the whole going-dark sample. The dummy variable Bankruptcy equals one if the firm was determined to be in bankruptcy proceedings on the Form 15 filing date, and zero otherwise. The dummy variable 13E-3 equals one if the firm filed a Schedule 13E-3, and zero otherwise. The dummy variable Pink equals one if the firm was traded on the Pink Sheets before the Form 15 filing date, and zero otherwise. For each subsample, the Brown-Warner t-statistics for two-sided tests are reported in parentheses. For the difference across each pair of sub-samples, regular t-statistics are reported. **, *, † indicate significance levels at 1, 5, 10%, respectively.

	# of Firms	CR (raw)	CAR (size-adjusted)
Pre-SOX	83	-0.048 (-4.84)**	-0.046 (-4.65)**
Post-SOX	204	-0.100 (-9.97)**	-0.104 (-10.32)**
Difference		0.052 (2.06)*	0.057 (2.27)*
Price≤\$1	196	-0.105 (-10.32)**	-0.106 (-10.48)**
Price>\$1	91	-0.044 (-4.48)**	-0.046 (-4.75)**
Difference		-0.061 (-2.43)*	-0.060 (-2.37)*
Return≤Median	142	-0.104 (-10.53)**	-0.105 (-10.71)**
Return>Median	134	-0.072 (-6.86)**	-0.073 (-7.08)**
Difference		-0.032 (-1.21)	-0.032 (-1.20)
Bankruptcy=0	248	-0.090 (-8.86)**	-0.091 (-9.07)**
Bankruptcy=1	39	-0.058 (-5.87)**	-0.059 (-5.92)**
Difference		-0.032 (-0.71)	-0.032 (-0.75)
13E-3=0	250	-0.096 (-9.57)**	-0.098 (-9.79)**
13E-3=1	37	-0.015 (-1.18)	-0.014 (-1.18)
Difference		-0.081 (-2.20)*	-0.084 (-2.22)*
Pink=0	208	-0.085 (-8.07)**	-0.087 (-9.86)**
Pink=1	78	-0.090 (-8.32)**	-0.091 (-9.94)**
Difference		0.006 (0.21)	0.004 (0.15)

Table 5: Time-Series Analysis of Deregistration Effect

Panel A: Deregistration Effect vs. Delisting Effect

This panel reports the results from pooled cross-sectional time-series regressions of firms' daily returns on various deregistration and delisting dummy variables. For each firm in our sample, Dereg.=1 for the day, and the day after, the earlier between a company Form 15 filing date and the deregistration announcement date. Delist=1 for the day, and the day after, a company delists from one exchange to another during the year before deregistration and 50 days after deregistration. Delist to OTC and Delist to BB are similarly defined for delisting to Pink Sheets and to OTC Bulletin Board, respectively. Price-reversal=1 if there is a reversal in price during the specified window relative to the [0,1] window. Bankruptcy=1 if the firm is in bankruptcy proceedings at the time of the deregistration filing. Size Portfolio is daily returns to the size portfolios. **, *, † indicate significance levels at 1, 5, 10%, respectively.

	Model 1	Model 2	Model 3	Model 4	Model 5
Size Portfolio	0.382 (7.10)**	0.386 (7.18)**	0.385 (7.17)**	0.386 (7.18)**	0.386 (7.19)**
Dereg.	-0.042 (-5.26)**	-0.040 (-4.94)**	-0.040 (-4.98)**	-0.040 (-4.92)**	-0.039 (-4.85)**
Delist		-0.035 (-2.77)**		-0.036 (-2.84)**	-0.034 (-2.73)**
Delist to OTC			-0.065 (-3.13)**		
Delist to BB			-0.027 (-1.84)†		
Price-reversal [3,5]				0.008 (1.23)	
Price-reversal [6,10]				0.000 (0.07)	
Bankruptcy					-0.085 (-3.25)**
Intercept	0.006 (11.98)**	0.006 (12.32)**	0.006 (12.33)**	0.006 (12.08)**	0.006 (12.42)**
<i>Model Specification:</i>					
F-stat	37.60	28.49	22.66	17.24	23.64
# of obs.	82221	82221	82221	82221	82221

(Table 5 continued)

Panel B: Deregistration Filing vs. Announcement

The panel compares market responses to deregistration filing with those to deregistration announcement. File=1 for the Form 15 filing date and the day after. Final Ann.=1 for the final deregistration announcement date and the day after. Final+Cont.Ann.=1 for the final or contingent deregistration announcement date and the day after. First 13E-3=1 for the first Schedule 13E-3 filing date and the day after. No Ann. means that there was no deregistration announcement. **, *, † indicate significance levels at 1, 5, 10%, respectively.

	Model 1	Model 2	Model 3	Model 4 (No Ann.)
Size Portfolio	0.386 (7.19)**	0.387 (7.20)**	0.387 (7.20)**	0.368 (4.21)**
Delist	-0.032 (-2.52)*	-0.032 (-2.52)*	-0.032 (-2.50)*	-0.028 (-1.23)
File	-0.023 (-3.07)**	-0.023 (-3.16)**	-0.022 (-2.97)**	-0.029 (-3.54)**
Final Ann.	-0.042 (-2.89)**			
Final+Cont. Ann.		-0.043 (-3.13)**	-0.048 (-3.24)**	
First 13E-3			0.030 (1.69)†	
Intercept	0.006 (12.33)**	0.006 (12.36)**	0.006 (12.32)**	0.007 (8.68)**
<i>Model Specification:</i>				
F-stat	23.37	23.54	18.98	10.54
# of obs.	82221	82221	82221	36760

Table 6: Market Reaction to the Going-Private Decision

This table reports both the market-adjusted and size-adjusted cumulative returns around firms' going-private transactions. Min(First13e3,Ann.,Filing) means the earliest among the first Schedule 13e3 filing date, the going-private announcement date, and the Form 15 filing date. 396 firms in the going-private sample filed Schedule 13E-3, 107 firms had going-private announcement dates, and 406 firms filed Form 15. Post-SOX denotes the period beginning 8/1/2002. The last row analyzes the difference between pre- vs. post-SOX CARs. The Brown-Warner t-statistics for two-sided tests are presented in parentheses. **, *, † indicate significance levels at 1, 5, 10%, respectively. The numbers of observations used to compute the mean abnormal returns are reported in the square brackets.

	Raw	Market-Adj.	Size-Adjusted	N	# of Positive	
	[0,1]	[0,1]	[0,1]	[0,2]	[-5,5]	
Min (Ann., Filing, 13e3)	0.033 (5.71)**	0.029 (5.26)**	0.029 (5.33)**	0.029 (4.31)**	0.045 (4.17)**	267 149
Pre-SOX	0.017 (3.55)**	0.014 (3.09)**	0.014 (3.19)**	0.014 (2.58)**	0.043 (4.15)**	207 115
Post-SOX	0.087 (13.34)**	0.084 (12.91)**	0.082 (12.84)**	0.082 (10.42)**	0.051 (4.26)**	60 34
Difference	-0.070 (-1.52)	-0.070 (-1.52)	-0.068 (-1.46)	-0.068 (-1.46)	-0.008 (-0.33)	

Table 7: Effect of Deregistration on Liquidity

This table reports the effects of deregistrations on liquidity, based on OLS regressions that control for other firm-specific variables. Two liquidity measures are used. For each firm in our sample, we compute the average turnover and percentage of days traded before and after deregistration (using event windows [-250,-6] and [6,250], respectively). Similarly, the log of market value, Log(MV), and the standard deviation of stock returns, Std.Dev., are computed as averages before and after deregistration. Dereg.=1 after deregistration, and zero otherwise. Pink=1 if the firm was already traded on the Pink Sheets before the Form 15 filing date. **,*, † indicate significance at 1, 5, 10% levels, respectively.

Panel A: Average Turnover

	Model 1	Model 2	Model 3	Model 4
Dereg.	-0.069 (-4.74)**	-0.062 (-4.92)**	-0.061 (-4.84)**	-0.066 (-4.38)**
Log(MV)		0.005 (1.17)	0.005 (1.17)	0.007 (1.37)
St.Dev.			-0.001 (-2.55)*	-0.001 (-2.34)*
Pink Sheets				0.001 (0.03)
Dereg.*Pink Sheets				0.021 (0.59)
Intercept	0.137 (10.64)**	0.131 (11.54)**	0.131 (11.54)**	0.131 (9.51)**
<i>Model Specification:</i>				
F-stat.	22.51	12.34	12.60	7.60
R-squared	0.04	0.04	0.05	0.05
# of obs.	528	528	528	526

Panel B: Percentage of Days Traded

	Model 1	Model 2	Model 3	Model 4
Dereg.	-0.176 (-7.62)**	-0.146 (-6.02)**	-0.146 (-5.98)**	-0.152 (-5.47)**
Log(mv)		0.021 (4.04)**	0.021 (3.38)**	0.021 (3.81)**
St.Dev.			0.0004 (0.15)	0.0004 (0.17)
Pink Sheets				-0.017 (-0.45)
Dereg.*Pink Sheets				0.024 (0.46)
Intercept	0.481 (27.69)**	0.459 (26.08)**	0.459 (26.08)**	0.463 (22.62)**
<i>Model Specification:</i>				
F-stat.	58.06	38.96	25.93	15.02
R – squared	0.10	0.12	0.12	0.12
# of obs.	532	529	529	527

Table 8: Multivariate Probit Analysis of Firms' Deregistration Decision

This table reports results from two sets of multivariate probit analyses, combining the going-dark sample together with our control sample of firms with fewer than 300 holders of record (in Panel A), and the going-dark sample together with the going-private sample (in Panel B). Variable definitions are provided in Table 3. Industry controls based on the classification in Campbell (1996) and year dummies are included in all regressions. The t-statistics of the coefficient estimates are reported in parentheses. **, *, † indicate significance at the 1, 5, and 10% levels, respectively.

Panel A: Going Dark vs. Reporting

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Log(assets)	-0.07 (-7.43)**	-0.08 (-8.28)**	-0.05 (-5.08)**	-0.12 (-8.71)**	-0.13 (-9.04)**	-0.05 (-2.21)*	-0.07 (-2.57)*
Leverage	0.20 (1.91)†	0.19 (1.76)†	0.24 (2.20)*	0.24 (2.18)*	0.24 (2.12)*	0.29 (2.44)*	0.28 (2.22)*
Log(return)	-0.17 (-5.89)**	-0.16 (-5.38)**	-0.17 (-5.68)**	-0.20 (-6.14)**	-0.21 (-6.50)**	-0.21 (-6.10)**	-0.24 (-6.40)**
R&D	-0.78 (-2.44)*	-0.83 (-2.47)*	-0.56 (-1.76)†	-0.50 (-1.51)	-1.00 (-2.69)**	-0.82 (-2.16)*	-0.67 (-1.72)†
Δ (ST Debt)	0.58 (1.96)*						
Accruals			0.22 (5.89)**				
FCF				0.23 (3.80)**	0.36 (5.03)**		0.16 (1.49)
FCF*R&D					-0.55 (-4.52)**		
Block						0.28 (2.42)*	0.26 (2.09)*
FCF*Block							-0.27 (-1.79)†
Institution						-1.85 (-5.51)**	-1.75 (-5.07)**
Intercept	-1.28 (-7.29)**	-1.14 (-6.32)**	-1.58 (-8.20)**	-0.76 (-3.51)**	-0.65 (-2.99)**	-1.67 (-6.42)**	
<i>Model Specification:</i>							
$\chi^2(d.f.)$	300 (22)	334 (23)	319 (23)	299 (23)	303 (24)	250 (23)	251.46 (26)
# of obs.	7318	7086	6818	6488	6488	5606	5051

(Table 8 continued)

Panel B: Going Dark vs. Going Private

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Log(assets)	-0.37 (-8.31)**	-0.38 (-8.24)**	-0.38 (-7.69)**	-0.33 (-6.97)**	-0.33 (-6.81)**	-0.30 (-5.96)**	-0.26 (-4.76)**
Leverage	0.26 (1.07)	0.29 (1.11)	0.47 (1.76)	0.22 (0.86)	0.22 (0.85)	0.45 (1.71)	0.45 (1.60)
Log(return)	-0.25 (-3.42)**	-0.23 (-3.10)**	-0.22 (-2.88)**	-0.21 (-2.68)**	-0.19 (-2.38)*	-0.28 (-3.53)**	-0.26 (-3.05)**
R&D	-1.00 (-1.77)	-1.00 (-1.71)	-0.56 (-1.76)	-2.06 (-2.94)**	-0.99 (-1.36)	-0.87 (-1.38)	-1.57 (-2.24)*
Δ (ST Debt)		1.12 (1.76)					
Accruals			0.14 (1.97)*				
FCF				-0.74 (-2.03)*	-1.17 (-2.71)**		-0.09 (-0.21)
FCF*R&D					1.82 (2.34)*		
Block						-0.22 (-1.06)	-0.32 (-1.46)
FCF*Block							-1.27 (-1.85)
Institution						-0.94 (-2.15)*	-0.70 (-1.52)
Intercept	3.43 (6.35)**	3.51(6.41)**	3.30 (5.70)**	3.06 (5.45)**	3.00 (5.30)**	2.77 (4.43)**	2.62 (3.97)**
<i>Model Specification:</i>							
$\chi^2(d.f.)$	147 (22)	149 (23)	135 (23)	138 (23)	146 (24)	156 (23)	148 (26)
# of obs.	580	574	513	543	543	553	480