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Abstract

We examine a comprehensive sample of going-dark deregistrations where companies cease SEC reporting, but continue to trade publicly. We document a spike in going dark that is largely attributable to the Sarbanes-Oxley Act. Firms experience large negative abnormal returns when going dark. We find that many firms go dark due to poor future prospects, distress and increased compliance costs after SOX. But we also find evidence suggesting that controlling insiders take their firms dark to protect private control benefits and decrease outside scrutiny, particularly when governance and investor protection are weak. Finally, we show that going dark and going private are distinct economic events.

Keywords: SEC deregistration, Disclosure, Going private, Regulation, Private control benefits, Governance, Pink Sheets.

JEL Classifications: G18, G38, K22, G39, M41, M45, M44, G14

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1. Introduction

This study examines a recent surge of public companies deregistering their common stock, and in doing so, suspending their obligation to comply with SEC reporting requirements. In 2003 and 2004, approximately 300 U.S. companies deregistered their common stock for reasons other than a merger, acquisition, liquidation, registration withdrawal, or going-private transaction. The Sarbanes–Oxley Act of 2002 (SOX), and in particular its internal control requirements in Section 404, are frequently cited as catalysts in this recent movement to "go dark" (see McKay, 2003 and Frigo and Litman, 2004).

Public companies can 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 according to the current interpretation given by SEC Rule 12g5-1. Many investors have argued that this rule is detrimental to shareholders since it makes it too easy for companies to withhold financial information. A petition sent to the SEC on July 3, 2003 (Nelson, 2003) on behalf of a group of institutional shareholders suggests amending the definition of holders of record in order to help tide the "current widespread manipulation of the capital markets by some unprincipled issuers."

In response to these investor reactions, the SEC's Advisory Committee on Smaller Public Companies has recently recommended that the SEC amend Rule 12g5-1 to interpret "held of record" to represent actual beneficial holders (SEC 2006). More generally, this committee has suggested revisiting the rules used to determine when a company should be allowed to exit the SEC disclosure system. The committee's report notes that this issue is both important and urgent "because of the possibility of circumvention and manipulation" of entry and exit rules for the SEC disclosure system and because of "the significant increase in costs associated with [...] the registration and ongoing reporting obligations of the Exchange Act."

Motivated by this policy debate, this study analyzes a comprehensive sample of SEC deregistrations from 1998 to 2004 where firms effectively go dark. Our sample comprises approximately 480 firms and provides an opportunity to examine the causes and consequences of a significant and voluntary *decrease* in a firm's commitment to disclosure. Given the time period of our study, we can analyze the effects of SOX on SEC deregistrations and shed some light on potentially unintended consequences of the Act.[1] We also compare going dark to going private, since both involve exiting the SEC disclosure regime.

In press releases announcing the decision to deregister the stock, managers typically cite the high costs of SEC reporting as the key motivation for going dark. We find that smaller firms with relatively poor performance and low growth, for which reporting costs are particularly burdensome, are more likely to go dark, as are firms in the period following the passage of SOX. These results indicate that many of our sample firms rationally trade off the costs and benefits of reporting in their decision to deregister.

Despite the potential cost savings from deregistration, we find that firms' decisions to go dark are associated with a large negative market reaction, which on average is roughly -10%. We propose two economic explanations for this negative reaction. The first explanation is predicated on the notion that there is substantial information asymmetry about changes in firms' growth opportunities and, more generally, firms' future prospects and financial health. As managers' reporting choices likely reflect the firm's growth opportunities and external financing needs, as well as its ability to bear the burden of reporting costs, the decision to deregister likely reveals to investors that the firm's future prospects have deteriorated and that its financial health is less robust than expected. For instance, if a firm with financial difficulties for some time suddenly goes dark, investors might infer that a firm's turnaround is less likely or will take longer than previously thought. In these cases, the market reaction to a deregistration announcement can be negative, even if deregistering does in fact save reporting costs. In other

[1] Li, Pincus, and Rego (2007) and Zhang (2007) analyze the net benefits (or costs) of SOX for firms using event returns and reach opposite conclusions. See also Leuz (2007) for a discussion of recent SOX studies.

words, going dark merely accelerates the revelation of negative news, but it is ultimately in shareholders' best interests.

The negative market reaction to deregistration announcements could also reflect that outside (or minority) shareholders view going dark as being primarily in insiders' interests. For instance, deregistration could be a mechanism for managers to hide poor performance that might otherwise lead to their dismissal, to protect themselves from legal liability (especially after SOX), or to make it easier for insiders to extract private benefits of control. Put differently, going dark could be a way for controlling insiders, i.e., managers and large owners, to avoid the outside scrutiny that comes with, or is greatly facilitated by, SEC reporting.

Our analysis of SEC deregistrations and their economic consequences examines the role of these two explanations in the going-dark phenomenon. It is important to note that, while the two explanations are distinct, they can apply differently across firms and hence both can be present in our sample. Based on this insight, we predict that the agency explanation is more likely to apply in cases where governance or investor protection are weak. Our empirical results are consistent with this prediction and more generally with the two economic explanations.

For many firms, going dark appears to be a response to financial difficulties and deteriorating growth opportunities. We find that, prior to deregistration, going-dark firms are more distressed and exhibit increases in their short-term liabilities, decreases in trading volume and deteriorating operating performance, compared to firms that could deregister but continue to report. These findings are consistent with the cost savings rationale offered by companies in their press releases. Moreover, supporting the notion that the decision to go dark conveys negative news about a firm's future prospects, we find that firms with larger information asymmetry about their future prospects experience more negative returns at the going-dark announcement.

But there is also evidence that agency problems and insiders' interests play into the decision to go dark and that, at least for some firms, cost savings are not the only consideration.

Firms with weaker governance and outside monitoring, larger accruals, and larger free cash flow are more likely to go dark. Moreover, including interaction effects, we find that firms with both larger free cash flow and weak governance are even more likely to go dark, and these firms experience a more negative stock market reaction upon announcing the decision. Going-dark announcement returns are less negative when outside investors are better protected (as in cases that require filing Schedule 13E-3 with the SEC) and when the loss in outside monitoring is smaller (as for banks or for firms that are already in the Pink Sheets prior to going dark). The latter findings support the notion that concerns about insiders' interests are priced at the going-dark announcement and that, at least for some firms, the market reaction captures more than (accelerated) bad news about future prospects. As a final piece of evidence, we document that, after deregistration, even relatively inexpensive voluntary disclosures (e.g., on corporate websites) are uncommon, which again suggests that for many firms cost savings are not the only factor in the going-dark decision.

When examining the effects of SOX on deregistrations, we find that the time pattern of going-dark decisions is closely associated with the passage of SOX and the timing of policy changes regarding the implementation of the internal controls requirement in Section 404, which is perceived to be particularly costly. While these results could simply reflect the burden of SOX and the desire to save costs, we find evidence that, after SOX, financial distress becomes less relevant and free cash flow problems are an even stronger factor in the decision to go dark. In addition, we find that investor protection offered by a Schedule 13E-3 transaction is more strongly priced by the market after SOX. These findings are consistent with the notion that some firms exit the SEC reporting system because their insiders face more scrutiny and higher penalties after SOX. Thus, it appears that SOX did more than simply raise compliance costs.

Taken together, our results support the two proposed explanations and show that going dark is neither completely benign nor simply opportunistic. As predicted, the agency explanation plays a larger role when governance is weak or outside investors are less protected. These

findings make several contributions to the literature. Our study is the first to analyze a comprehensive sample of going-dark (and going-private) deregistrations over an extended time period. It provides empirical support for two economic explanations of why firms go dark. Marosi and Massoud (2007) also study firms that go dark and obtain several basic results that are similar to ours. However, many of their analyses are univariate and are not as extensive as ours, e.g., with respect to the cross-sectional differences in event returns, the effects of SOX on the frequency of going dark, and the attempts to separate delisting and deregistration effects.[2] They also do not distinguish between the different explanations for going dark and do not examine going-private transactions or voluntary post-deregistration disclosure strategies.

Our study also contributes to the literature by drawing clear distinctions between going-dark deregistrations and two related events, namely delisting and going private. Stocks traded on NYSE, NASDAQ, AMEX and the OTC Bulletin Board are required to comply with SEC reporting obligations and hence have to be delisted if these firms want to go dark. Once they are deregistered, the stocks can only trade in the Pink Sheets or other OTC markets. Thus, deregistration and delisting effects can be commingled and need to be carefully separated. Doing so, we find evidence supporting the view that deregistration and delisting are separate events. For instance, we show that going-dark firms experience negative market reactions and decreases in liquidity, even if they are already traded in the Pink Sheets and hence do not have to delist. Related studies that examine the effect of delistings, including recent work by Macey, O'Hara, and Pompilio (2004), Harris, Panchapagesan, and Werner (2006) and Bushee and Leuz (2005), focus on involuntary (regulatory) delistings, whereas delistings tied to voluntary deregistrations are essentially voluntary. Thus, we also have a unique sample of delistings.

In practice, firms that deregister to go dark are often casually viewed as having gone private. Going dark and going private both remove the obligation to comply with SEC reporting requirements. However, there are important distinctions between these actions, the most no-

[2]In their initial draft, which was concurrent with ours, Marosi and Massoud analyzed a sample of 42 firms traded on major exchanges that delisted and deregistered after the passage of SOX. This sample made it impossible to disentangle delisting and deregistration effects, or to capture the effect of SOX. The authors have since expanded their sample (and analyses) following an approach similar to ours.

table 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 1998-2004 period. Interestingly, while the number of going-dark firms surges following the passage of SOX, the incidence of going-private transactions does not increase over our sample period.[3] We also document that going-private firms experience positive announcement returns and that these firms are larger, better performing and less distressed than going-dark firms. These results suggest that going dark and going private are distinct economic events and that going private is driven by factors that extend beyond a desire to terminate SEC reporting. However, it is also possible that some firms that are not attractive going-private candidates instead go dark as a second-best alternative.

In the next section, we discuss factors associated with firms' going-dark and going-private decisions, and present two explanations for why firms go dark. Section 3 describes our sample selection and presents descriptive statistics. Section 4 delineates our results for the causes and consequences of SEC deregistrations. Section 5 concludes the study. The Appendix details the deregistration process from a legal and procedural perspective.

2. Theoretical Foundation and Research Design

2.1. What triggers firms to go dark?

The prior literature suggests that firms receive numerous economic benefits from committing to strict reporting and disclosure requirements. These benefits include less information asymmetry and higher liquidity (Easley, Hvidkjaer, and O'Hara, 2002; Leuz and Verrecchia, 2000), a larger investor base (Merton, 1987; Basak and Cuoco, 1998), and a lower cost of capital (Botosan, 1997; Hail and Leuz, 2006). Similarly, foreign firms that cross list on U.S.

[3]This finding is in contrast to a recent study on going-private transactions by Engel, Hayes, and Wang (2007). However, their going-private trend analysis includes firms that continue to trade and hence are going-dark firms in our analyses. This difference explains why their trend analysis shows an increase after SOX.

exchanges, thereby subjecting themselves to stricter reporting requirements and SEC enforcement, exhibit increases in firm value (Coffee, 1999, Doidge, Karolyi, and Stulz, 2004 and Karolyi, 2006). While strict reporting requirements can also have substantial costs, revealed preference suggests that the benefits of SEC reporting exceed the costs for most publicly traded companies. It is therefore interesting to analyze when and why firms are willing to withdraw their commitment to disclose to the SEC.

Conceptually, we can distinguish between negative shocks to the benefits and positive shocks to the costs, each of which can tip the balance in favor of going dark. Negative shocks to the reporting benefits could stem from changes in firms' ownership structures (e.g., fewer institutional holdings) as well as changes in firms' growth opportunities. Fewer growth opportunities generally imply that a firm has less need for external financing in the future, which in turn reduces reporting benefits such as a lower cost of capital or higher market liquidity. Consistent with these arguments, external financing needs are an important determinant of corporate disclosures (e.g., Healy and Palepu, 2001).

Positive shocks to the costs of reporting could come from financial distress as well as changes in regulation. Financial distress and declines in profitability make it more taxing to comply with SEC reporting requirements as many compliance costs are fixed and cannot be easily reduced. Similarly, regulatory changes to the reporting requirements can impose substantial costs on firms, especially smaller firms (e.g., Bushee and Leuz, 2005). In this regard, SOX is of particular importance as it is said to have substantially increased the internal resources necessary to comply with the new SEC reporting requirements, as well as the cost of retaining outside auditors, outside directors, and lawyers (e.g., FEI Survey, 2005). In addition, there can be factors that increase the indirect costs associated with reporting. For example, changes in a firm's competitive environment could increase the proprietary costs associated with disclosing information that is valuable to competitors (e.g., Healy and Palepu, 2001). Alternatively, the pressure on management to meet or beat short-term earnings expectations, even if doing so sacrifices long-term value, has allegedly increased in recent years and could

increase indirect reporting costs (Frigo and Litman, 2004, Graham, Harvey and Rajgopal, 2005, and Jensen, 2002).

These shocks to the costs and benefits of reporting are the most frequently stated reasons given by management in press releases to explain why their firms are going dark (though a lack or decline of future growth opportunities is not typically discussed). Since the passage of SOX, many firms emphasize the increased costs associated with being a reporting company. We therefore label this as the "cost savings" rationale for going dark. It encompasses the notion that firms go dark in response to financial distress, increased compliance costs after SOX, as well as a decrease in the future growth opportunities, which reduces the need for external financing. In essence, the "cost savings" rationale is a shorthand for management's efforts to maximize shareholder value by ceasing to file with the SEC when the net benefit of such reporting has become negative.

It is important to note that even if the decision is driven entirely by efforts to maximize shareholder value, the stock market reaction to going dark can be negative. A negative reaction does not reflect the anticipated decrease in liquidity after going dark or the loss of other reporting benefits because these effects should be internalized in the decision to go dark and traded off against the cost savings. That is, it would only be in shareholders' interest to go dark if the associated cost savings exceeded lost reporting benefits and hence the loss of liquidity or reporting benefits should not lead to a negative market reaction. However, it is possible that the decision itself (or its announcement) reveals negative information about the firm's future prospects. For instance, if a firm with financial difficulties or declining growth opportunities suddenly decides to go dark, the market could infer from the decision itself that future prospects are worse than what was previously known.

Another reason why the market reaction could be unfavorable is that outside investors suspect that, despite benign publicly stated motivations, the decision to go dark is driven by insiders' interests, rather than the pursuit of shareholder value. Controlling insiders, such as managers or large owners, could take the firm dark to avoid the outside scrutiny that comes

with, or is greatly facilitated by, SEC reporting. After going dark, insiders may increase their private benefits of control, including perk consumption, loans on favorable terms, generous compensation packages, the investment of free cash flows into projects that serve insiders' interests, or self-dealing with other companies in which insiders hold stakes. And even for firms that generate little cash that insiders could directly or indirectly appropriate, going dark can offer insiders more entrenchment and less outsider interference. Without SEC reporting, it is easier to extract and protect these private benefits, and the expected (private) costs of detection are lower.[4] Conversely, regulatory events that extend firms' reporting requirements or strengthen their enforcement, such as SOX, can increase the expected costs to insiders of being a registered company, which in turn can trigger the decision to go dark. In all these cases, going dark serves insiders' interests and not necessarily those of all shareholders. We therefore label this explanation as the "private benefits" or agency rationale for going dark.

The cost savings and private benefits rationales suggest various characteristics that should distinguish firms that go dark versus those that choose to continue SEC reporting. The cost savings rationale implies that going-dark firms should have more negative returns prior to going dark, be more distressed, have lower benefits from being actively traded, and have deteriorating growth opportunities relative to firms not going dark. If the private incentives of insiders also drive the decision to go dark, we would expect going-dark firms to exhibit characteristics that indicate agency problems or hiding behavior, such as accounting manipulations. Furthermore, economic theory suggests that the extent to which insiders' interests overshadow the interests of outside shareholders depends on the strength of a firm's corporate governance (e.g., La Porta et al., 2000). For instance, the presence of independent directors, large outside blockholders or institutional investors increase the likelihood that shareholders' interests are represented in the going-dark decision. Put differently, we expect private benefits to play a larger role when governance structures are weak. We examine these predictions to shed

[4] Boehmer 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 modeling the IPO timing decision, Benninga, Helmantel, and Sarig (2005) 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.

light on the extent to which and when the two proposed rationales explain firms' going-dark decisions.

We also analyze differences in the economic consequences of going dark, including those arising from institutional differences across going-dark decisions. For instance, outside shareholders' interests are better protected if a company has more than 300 holders of record prior to going dark because the transaction that needs to be executed to bring down the number of record holders below the maximum threshold involves shareholder input: a reverse split (plus a subsequent squeeze out of fractional shareholders) requires majority shareholder approval; a tender offer gives each shareholder the option to sell his or her shares back to the company. In these cases, firms also have to file Schedule 13E-3 with the SEC, which among other things involves getting a fairness opinion from an independent party. These institutional features suggest that if agency issues are an important driver of going-dark transactions in general, they are less likely to motivate going-dark decisions involving a Schedule 13E-3 where shareholders are better protected. Thus, we expect that, in these cases, the going-dark decision is more favorably (or less negatively) received by the market, compared to firms that can go dark without shareholder input and additional shareholder protection. Similarly, firms that already are in the Pink Sheets are likely to experience a smaller decline in outside monitoring (e.g., by analysts or institutional investors) after going dark than firms that deregister and delist from major exchanges.[5]

Finally, we can exploit the fact that our sample period covers a major regulatory event. SOX has significantly increased the costs of SEC reporting, in particular due to its internal controls requirement (Section 404). But SOX has also tightened governance and increased outside scrutiny and penalties levied on corporate insiders. Thus, both the cost savings and the agency motivations for going dark suggest that more firms should choose to go dark after SOX, but for different reasons. Thus, we first formally test whether SOX was indeed a trigger

[5]Other examples of institutional features that we exploit in our analyses are regulations applying to banks or in particular states of incorporation. Banks have to continue to file with their regulators after they go dark, and some states require companies to provide financial statements to shareholders, even if the firms are not registered with the SEC.

event for firms' going-dark decisions and then examine whether the determinants of these decisions have changed since SOX to shed further light on the extent to which the two proposed rationales explain firms' going-dark decisions.

2.2. Going Private vs. Going Dark

Companies that go private, like going-dark firms, deregister their securities and are no longer required to file with the SEC. As a result of this similarity, going-dark firms are often mistakenly referred to as having gone private. However, there are important distinctions between going dark and going private. Going-dark firms continue to trade in OTC markets. In contrast, going-private transactions typically involve restructuring that concentrates ownership in the hands of management and private equity investors, and often significantly increases the level of debt. These transactions usually require the infusion of new capital and involve legal complexities, including complying with more stringent SEC regulations and having safeguards such as appraisals and an independent board committee to reduce shareholder litigation. As a result, these transactions enhance value only if the potential for efficiency gains and tax benefits is sufficiently large to outweigh the substantial costs and risks associated with going private.

Going dark and going private are therefore likely to be economically distinct events that have different determinants and economic consequences. Specifically, going private is likely to be motivated by more than just a desire to terminate SEC reporting. Evidence from going-private studies suggests that these transactions are often initiated by affiliated parties who believe the company is inefficiently managed, underleveraged, or undervalued by the market (Jensen (1986), Kaplan (1989a), Kaplan (1989b), Lehn and Poulsen (1989) and Lichtenberg and Siegel (1990)).

As going private tends to be fairly complex, risky and costly, it is possible that firms that are not sufficiently attractive or large enough to attract affiliated parties to orchestrate a going-

private transaction go dark instead. Moreover, low quality managers presumably have little incentive to initiate, or facilitate, a transaction that in the end might lead to their dismissal. Thus, even if the firm is an attractive going-private target, managers who wish to entrench themselves likely prefer to go dark. By making their firm less visible and transparent, these managers may even reduce the likelihood of becoming a future takeover target. This discussion suggests that cost savings and agency motives also play into the distinction between going dark and going private.

Relative to companies that go private, we expect that going-dark firms are smaller, more distressed, and have fewer growth opportunities and substantially poorer operating performance. Our arguments also suggest that a company's going-dark decision should be less favorably received by the market than if it were to go private, because the market likely infers that either the firm is not an attractive target for a going-private transaction, or that insiders prefer to entrench themselves. Furthermore, the additional safeguards in going-private transactions often result in minority shareholders being bought out at a premium (DeAngelo, DeAngelo and Rice, 1984, and Lehn and Poulsen, 1989). Thus, to the extent that the market has priced in a positive probability of a going-private transaction, the implied premium is likely to evaporate when the firm announces that it will go dark, especially if this decision reveals that a future going-private transaction is very unlikely.

3. Sample Selection and Descriptive Statistics

3.1. Going-Dark Sample

Firms that are eligible to deregister their common stock do so by filing a Form 15 with the SEC. The main criterion is that a firm has fewer than 300 holders of record. Further details on eligibility and on related aspects of the deregistration process are provided in the Appendix. We begin our identification of going-dark firms by collecting all Form 15 filings from January

1998 through December 2004 from LiveEdgar. 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 requirements; 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 approximately 5,000 Form 15 filings by U.S. companies that we scan for going-dark cases.

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 and is subsequently no longer traded; or, none of the above apply, and the firm simply decides to be exempt from the duty to report to the SEC. The last category of Form 15 filers are the "going-dark" firms in our study. These firms no longer need to report to the SEC after filing Form 15, but they continue to be publicly traded. To identify going-dark firms, we first remove liquidations, acquisitions, mergers, registration withdrawals, and going-private transactions.[6] We then use information available on LiveEdgar (in particular 8K filings), 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 continue trading after the Form 15 filing and that there are no other registered securities of the firm that would require it to continue reporting to the SEC.

It is possible that some firms "informally" go dark by simply ceasing to file with the SEC, despite not having filed Form 15. Presumably, these firms are not eligible to file Form 15 and hence are breaking the law. We believe that this group is unlikely to be large, especially considering that the exchanges and other trading venues monitor whether firms are current in

[6]We also exclude firms with SIC code equal to 99, and assets less than $1,000. These firms are shell companies that have no real operations. Shell companies are also eliminated from our control and going-private samples described below.

their SEC filings and hence assist the SEC in identifying these firms. Thus, as it is not possible to reliably determine all such firms, our sample construction focuses solely on firms that file Form 15.[7]

From 1998 to 2004, 484 companies filed Form 15 to go dark. We use CRSP, Datastream and Reuters to extract daily trading information. We use Compustat, Compact Disclosure, IBES, and First Call to obtain corporate financial, governance and ownership information. To fill in missing data, we also hand-collected a substantial amount of financial, ownership and board information from SEC filings. Price data on and after the filing date was available for 446 firms in our sample, and financial information at the last fiscal year end before deregistration was obtained for 419 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, since subsequent Form 15 filings typically make only minor corrections. In order to properly measure the stock market reaction to firms' Form 15 filings, we search for announcements of the deregistrations in 8K and 13E-3 filings, and in Lexis-Nexis and Bloomberg. We are able to identify 242 going-dark announcements. In addition, 55 firms indicate their intention to go dark when filing a Schedule 13E-3 filing, contingent on a successful execution of the proposed transaction designed to bring down the holders of record below the maximum threshold for deregistration.

3.2. Control Sample

We construct a control sample that consists of Compustat firms during fiscal years 1998-2004 that have fewer than 300 holders of record of their common equity (as reported in Item 5 of their 10K reports), 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. We exclude firms that have become reporting companies during the fiscal year because they are not eligible to

[7] We thank Jeff Coles for bringing up this issue.

deregister, and firms with holders of record between 300 and 500 if asset value information was not available for each of the previous three fiscal years. Our control sample consists of 2,061 firms. As some firms satisfy the holders of record criteria for more than one year during the 1998-2004 period, there are a total of 7,249 firm-year observations in our probit analysis associated with the control sample.

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. Thus, the control sample should provide a reasonable benchmark to analyze the determinants of going-dark decisions.

3.3. Going-Private Sample

We also construct a comparison sample consisting of going-private firms. There does not appear to be a universally accepted definition of "going-private" in the academic literature or in practice. Prior 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 for some time). This characteristic broadly corresponds to cases where firms make Schedule 13E-3 filings in connection with "transactions initiated by affiliates of the company," which is why we use them as a starting point for our sample construction.

Thus, the first step of our sample construction involves using LiveEdgar to identify companies that file a Schedule 13E-3 followed by a Form 15, indicating the completion of the going-private transaction and the deregistration of the stock. DeAngelo, DeAngelo, and Rice (1984) and Engel, Hayes, and Wang (2007) also follow the SEC's definition of going private

based on Rule 13E-3. The second step of our sample selection process, however, is unique in two respects. First, we recognize that there are cases where a company files a Schedule 13E-3 in connection with a transaction such as a reverse split that reduces its holders of record below 300, but its stock remains traded in the OTC market, notably the Pink Sheets. There are 68 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 24 such going-private firms that file Form 15 yet do not need to file Schedule 13E-3. Using this refined selection process, we construct a sample of 436 going-private firms. Price data is available for 311 of these firms for at least the day of and the 5 days after the filing date. Financial information is available for 395 of the firms in our going-private sample.

3.4. Descriptive Statistics

Table 1 shows the frequency of going-dark and going-private deregistrations during 1998-2004. There is a significant increase in going-dark deregistrations in 2003 and 2004. 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, the increase in deregistrations may also be the result of weak stock market performance during the preceding time period. We therefore explicitly investigate this issue in Section 4.2. Interestingly, going-private deregistrations do not exhibit any discernable time pattern.[8]

[8] After 2004, going-private activity has increased, particulary when looking at the dollar value of the transactions. However, there are similar going-private trends around the world. Moreover, the average deal size in dollars has steadily increased over time (in the U.S. and other countries), which is not what we would expect to see if SOX fueled the recent trend. SOX has been particularly costly to smaller firms. Thus, even if the response

There are two distinct features of going-dark firms. First, they do not need to disclose financial information to the SEC, and we indeed find no SEC filings for any of our going-dark firms subsequent to deregistration. Second, they continue to be publicly traded following deregistration. Table 2 provides evidence of continued trading based on information from the webpages of Yahoo Finance, Pink Sheets, and OTC-Portal, as well as from Datastream and Reuters. The last trading date was not available for 17 of our 484 firms. The table shows that most dark firms trade for several years after filing their deregistration. For instance, 417 of the 484 going-dark firms were still traded as of June 30, 2005. We are able to identify the circumstances under which 39 companies ceased trading altogether at some point after deregistration: 16 were acquired, 3 went private, 6 were liquidated, 7 underwent a bankruptcy reorganization, and 7 were deleted because of inactive trading. Thus, very few of the firms that go dark soon cease to exist. Also, going dark does not appear to be an intermediate step towards becoming fully private. In Section 4.4, we further analyze market liquidity and firms' voluntary disclosures after deregistration.

Table 3 shows the distribution of firms across industries for the going-dark and going-private samples. There is reasonably broad representation across major industry groups. In examining SIC codes for the internet and tech sectors (in unreported analysis), we do not find any significant clustering, despite the large spike of IPO activity in the late 1990s followed by subsequent poor performance for many of these firms. However, there is a large number of financial services firms in our sample. Banks have to file with their regulators and bank financials are obtainable in some form at the level of the holding company, even if they do not file with the SEC. We control for and exploit this distinct feature of banks in our subsequent analyses.

Table 4 provides descriptive statistics on firm characteristics of our going-dark, control, and going-private sample firms that are used in our subsequent analyses. The variables are based on financial information obtained from the last 10K filing of each firm (in the case of

to SOX was delayed (e.g., due to compliance extensions granted to smaller firms), we would expect to see that the average deal size eventually falls, rather than increases (Leuz, 2007).

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). Panel A provides the definitions of the variables used in our analyses. We truncate all financial variables' distributions at the 1% and 99% percentiles, except those that are naturally bounded or transformed using the log function, such as firm size. Panel B of Table 4 reports the mean and median for each variable and sample. It shows that there are substantial differences in firm characteristics across samples. For instance, 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 and asset growth, and appear more distressed as indicated by higher O-scores. Other variables shown in Table 4 are more formally introduced in our subsequent analyses.

4. Results

4.1. The Causes of Going Dark

Table 5 reports results of probit models that identify characteristics associated with firms that go dark, relative to the control sample firms (Panel A) and the going-private firms (Panel B). The disclosure literature indicates that size, leverage, performance and financing needs are major determinants of firms' disclosure decisions (e.g., Healy and Palepu, 2001). Thus, we begin with these firm characteristics to examine whether they also apply to decreases in the commitment to disclosure. Industry controls based on the classification in Campbell (1996) and year controls are included in all the models, but coefficients are not reported.

Model 1 in Panel A shows that going-dark firms are significantly smaller than firms that choose to continue reporting despite the fact that both satisfy the threshold rule for deregistra-

tion.[9] Going-dark firms also have weaker recent stock performance and significantly higher leverage. Asset growth is lower for going-dark firms, suggesting fewer growth opportunities and less of a need for external financing. Alternative proxies for these constructs, such as sales growth and the book-to-market ratio, yield the same inferences. These results are consistent with prior findings on the costs and benefits of reporting in the disclosure literature.

In Model 2, we analyze more specifically the role of cost savings as a motivation for going dark. Since distressed firms would be least able to deal with the economic burden of reporting, we examine whether going-dark firms appear to be more distressed. We find that the O-Score, a distress score from the bankruptcy prediction model of Ohlson (1980), is significantly higher for going-dark firms than for control sample firms. The O-Score also has a meaningful economic effect: relative to the baseline probability of going dark of 2.8% for the average firm in our universe, an increase in the O-Score from the 25th to the 75th percentile raises the probability of going dark by 1.7 percentage points, or 60%. In untabulated results, we find further support for the distressed nature of going-dark firms: larger increases in the short-term component of debt, which may indicate distress-triggered acceleration in debt repayments; larger drops in ROA; and a lower ratio of cash to total assets. In trading off the costs and benefits of SEC reporting, firms will also be more likely to go dark if there is a decline in capital market activity. Consistent with this idea, we find that the change in a firm's trading volume over the last fiscal year is negatively related to going dark. Taken together, the evidence that going-dark firms are smaller and weaker, and have a decreased need and ability to access capital markets provides support that cost savings are a rationale for going dark.

As discussed in Section 2, firms' controlling insiders may have ulterior motives to go dark, which can dominate other considerations, in particular when the company has weak governance. To explore this private benefits explanation, we examine the effect of several variables indicating agency problems and hiding behavior in Model 3. Earnings management

[9] We use Log(Assets) in the main regressions to measure size because (a) MV and Return likely capture similar effects and (b) sample firms differ considerably in terms of their capital structure. However, in unreported regressions, we find consistent results using Log(MV).

is a natural candidate since there is evidence that governance problems often manifest in accounting manipulations, and SOX was passed in response to accounting scandals and is meant to address such accounting issues. We introduce a proxy indicating that the magnitude of a firm's accruals are large relative to its operating cash flow, which has been argued to be indicative of earnings management. We use the three-year median ratio of the absolute value of accruals over the absolute value of the operating cash flow ("Large Accruals").[10] Using a similar proxy, Leuz, Nanda, and Wysocki (2003) document that earnings management and private control benefits to insiders are related. Further, Doyle, Ge, and McVay (2007) find that firms with material weaknesses in their internal controls tend to have lower accruals quality. Consistent with this work and claims that insiders seek to hide poor performance and to protect private control benefits, we find that going-dark firms exhibit larger accruals. We recognize that the measurement of earnings management is notoriously difficult and contentious. As a result, we perform various robustness checks to mitigate concerns about measurement. For instance, we use alternative proxies based on the discretionary accruals model (using ranks and performance adjustments), and again obtain significantly positive coefficients on the accrual proxy.[11]

In addition, Model 3 introduces a proxy for the excess cash flow that insiders may be able to redirect to create private benefits (Jensen, 1986). FCFProb ("Free Cash Flow Problem") is defined to be the maximum growth rate that can be financed by internal funds minus the median growth rate in the industry. Following Demirgüç-Kunt and Maksimovic (1998), we compute the maximum internally-financed growth as $\frac{ROA}{1-ROA}$ and use the industry growth rate for assets as an independent measure of growth opportunities, rather than the firm's actual growth rate, which may include overinvestment. Thus, the variable exhibits high values for firms that internally generate large amounts of cash but have few growth opportunities and hence are more prone to free cash flow problems. Model 3 shows that firms with larger

[10] We compute accruals indirectly from the balance sheet since this leads to a somewhat larger sample than when measuring cash flow directly, but both calculations yield consistent results.

[11] We also confirm that our results are not unduly influenced by the inclusion of banks and other financial firms, or by the length of firms' operating cycles. All these robustness results are available from the authors.

amounts of excess cash are significantly more likely to go dark. As an alternative proxy, we use the free cash flow measure in Lehn and Poulsen (1989) and find that their free cash flow measure yields essentially the same result.[12] We also gauge the economic significance of our agency proxies. Increasing the accruals or free cash flow proxies from the 25th to 75th percentile raises the probability of going dark by 14% or 36%, respectively.

In Model 4, we examine the relevance of governance variables on the incidence of going dark. We use the number of independent directors (Board Gov), as a measure of the strength of board governance. Independent directors are directors who are not current or former officers of the company. We find that firms with fewer independent directors are more likely to go dark. This finding may reflect that stronger boards are more likely to prevent a firm from going dark if deregistration is not in shareholders' best interests. But it can also indicate that insiders whose decisions are driven by their private benefits have chosen weak boards with fewer outsiders. In either case, the finding is consistent with our prediction that firms are more likely to go dark when governance is weak. We also find in Model 4 that the presence of outside monitoring, using a dummy for the presence of institutional shareholders (InstInvst) as proxy, is negatively related to going dark.[13] In unreported regressions, we use alternative proxies of governance and outside monitoring, such as the percentage of independent directors, distinct CEO and chairman, and analyst following, and obtain similar results.

In Model 4, we also examine the potential influence of state regulation facilitating outside monitoring. While firms can suspend SEC reporting by deregistering their securities, many states still require that companies incorporated therein provide financial information to their shareholders. There are 15 states whose statutes include a mandatory requirement that

[12] Their variable is defined as operating income before depreciation - taxes - interest - dividends, scaled by the book value of assets. We prefer FCFProb as it captures both internally generated funds and growth opportunities. We also check that adjusting FCFProb and the Lehn and Poulsen measure for the level of accruals and hence non-cash components of earnings does not change the results and inferences.

[13] While we interpret this as evidence that external governance plays a role in firms' decisions to go dark, it is also possible that this relationship results from a decline in institutional ownership in anticipation of a firm going dark. We thank Jeff Coles for pointing this out. Note, however, that using a dummy variable measuring the *presence* of institutional ownership (as we do) is less subject to this endogeneity problem than using the *level* of institutional ownership.

financial statements be furnished to shareholders (Strong State Reg = 1). Another 26 states require corporations to furnish shareholders with financial statements only on written request (Medium State Reg = 1). The remaining nine states, including Delaware (where 167 of our going-dark firms are incorporated), have no provisions requiring that financial information be provided to shareholders. Model 4 indicates that firms incorporated in states with (at least some) disclosure provisions are significantly less likely to deregister. This result is consistent with insiders' being able to more effectively escape public scrutiny in states requiring no financial disclosure.[14]

In Model 5 of Table 5, we combine the variables from the previous models. While combining all variables in one model reduces sample size, a full model is less likely to be subject to omitted variable problems. The results from the combined model are consistent with the findings discussed above.[15] Another way to subject our agency variables, and more generally the private benefits explanation, to a more stringent test is to estimate interactions between our agency variables and the proxies for governance and external monitoring. The agency variables should have a smaller effect on firms' propensity to go dark when governance and monitoring are strong. Hence, we expect to see a negative coefficient for the interaction.

Model 6 and 7 report interactions for FCFProb with Board Gov and InstInvst, respectively. Since interpreting interactions in nonlinear models can be difficult, we follow the methodology in Norton, Wang and Ai (2004) to assess the interaction terms. As predicted, the coefficients of the interaction terms are significantly negative, indicating that FCFProb has a smaller impact on the likelihood of going dark when governance is stronger. Consistent with these results, unreported regressions interacting the FCFProb variable with alternative monitoring proxies (i.e., analyst following and block holders) yield significantly negative coefficients. While we do not find significant interactions when Large Accruals is combined with these governance

[14] Another possibility is that the costs associated with state-mandated disclosure are significant enough that firms tend to go dark only when they can completely eliminate external reporting costs. However, states do not set out stringent requirements, even if they have reporting provisions. Thus, the direct costs of reporting are presumably not very high and certainly much lower than the costs of SEC reporting (even prior to SOX).

[15] Probit analyses using a size and industry matched control sample, instead of the control sample based on holders of record used in Panel A of Table 5, yield the same inferences as the ones reported above.

or monitoring variables, we do find (in untabulated results) a significant positive interaction effect between weak state regulation and large accruals. This interaction effect is what we would expect to see if the accrual proxy captures earnings management, since hiding behavior is is less likely to be effective in states that subject firms to reporting requirements even when they go dark. There is little reason to believe that the difficulty in measuring earnings management is correlated with the state of incorporation and hence that measurement bias induces such an interaction effect. Overall, the results provide further support for the private benefits explanation.

The probit models in Panel B of Table 5 indicate that there are several 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 gains to outweigh the substantial costs and risks borne by private equity investors when taking a company private. The past return of going-dark firms is also much lower than that of the going-private firms, and going-dark firms are significantly more distressed, as measured by the O-Score (Model 2). However, despite the weaker performance, capital market activity does not decrease disproportionately for going-dark firms relative to going-private firms, as measured by the change in trading volume prior to deregistration. To the extent that the relatively poor performance of going-dark firms reflects firm-specific problems that are hard to resolve by restructuring the company and giving stronger incentives to management (e.g., a flawed business model), these firms would not be attractive going-private candidates. In contrast, firms that 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 (e.g., Lehn and Poulsen, 1989), we find in Model 3 that going-private firms have significantly higher free cash flow than do going-dark firms. Interestingly, we also find that going-dark companies tend to have higher accruals, consistent with hiding motives. Note, however, that both associations lose significance when all variables are included in the model (Model 5). Consistent with agency motives for going dark, we also find that the relative likelihood of going dark versus going

private is negatively related to the strength of governance and outside monitoring (Model 4). State regulation does not have a significantly different effect on the propensity to go dark versus private.

In sum, the results in Table 5 are consistent with the two proposed explanations for going dark. While the distress and growth opportunities variables indicate that firms with lower net benefits from reporting are more likely to go dark, there is also evidence that less benign reasons drive the going-dark decision as well, particularly for those firms with weaker governance.

4.2. The Impact of SOX

In this section, we examine how SOX has affected firms' decisions to go dark. As the Act is designed to address accounting and governance failures, it provides a regulatory shock that has the potential to shed further light on the motivations for going dark. From Table 1, it is clear that the number of going-dark deregistrations in 2003 and 2004 is much higher than in earlier years and, in untabulated results by quarter, we note that the increase in deregistrations starts in the quarter right after the passage of SOX. To more formally test for the impact of SOX, we analyze the monthly frequency of deregistrations after controlling for a number of factors. We include the market return over the year prior to the month of deregistration to control for going dark that occurs in response to a market downturn. Similarly, we add a control for IPO volume in the year prior to the deregistration month to control for waves in the IPO market. We also include a trend variable (Year) to control for structural changes occurring in the market over time (e.g., the trend that shares are increasingly held in street name, making it easier for firms to be eligible to deregister). In Panel A of Table 6, we report the results from these regressions. Model 1 indicates that, even after controlling for these variables (and, in unreported regressions, for seasonality effects and for market returns and IPO volume lagged by additional years), the passage of SOX is associated with an increase in the number of firms that go dark. The effect amounts to approximately 10 additional deregistrations per month for

the post-SOX period up to 2004. Hence, SOX does not account for the entire, but a large part of the jump in deregistrations. Note that there is no such effect for going private, which is in contrast to the findings of Engel, Hayes, and Wang (2007). However, as described earlier, these contrasting results arise from a difference in sample selection (see footnote 3).

Although we control for a number of other possible reasons for a spike in deregistrations, there is a concern that we pick up a concurrent event with a simple dummy for the post-SOX period. To address this concern, we examine whether the number of deregistrations is related to several specific events connected to the implementation of SOX. Since Section 404, which pertains to internal controls, is largely viewed by companies as the most onerous part of SOX, we analyze whether the monthly frequency of deregistrations responds to several news events related to the implementation of Section 404. The SEC has been charged with setting rules for implementation of SOX, including the compliance deadline for Section 404. The SEC first proposed implementation rules in October 2002. It then revised and finalized these implementation rules in May 2003, and later provided a significant extension in February 2004. This extension and the concurrent debate about the burdens of SOX likely created the expectation that smaller firms will obtain some relief from the Section 404 requirements. In fact, the SEC subsequently formed a panel to examine the effect of SOX on smaller firms and this panel has recently proposed changes that would decrease or remove the Section 404 requirements for many firms. Consistent with this sequence of events, Model 2 in Panel A of Table 6 shows that the number of deregistrations significantly increased after the passage of SOX and after the SEC proposed its implementation rules, but then declined after the February 2004 extension providing relief, particularly for small firms. The time-series pattern of monthly deregistration frequencies associated with key SOX implementation dates provides further support for a link between SOX and companies' going-dark decisions.[16] There is also a negative effect on going-private frequencies, but we are reluctant to interpret this as a SOX-related decrease,

[16]To eliminate another competing explanation for the post-SOX spike, we check whether there is a higher concentration of dot.com, technology, and bankrupt firms in our sample after SOX compared to the pre-SOX period. We find that these firms make up only a relatively small part of our going-dark sample, and that the concentrations are very similar before and after SOX.

as there is no evidence of a prior increase in going-private transactions around the passage of SOX.

As there appears to be a SOX effect, we can also analyze whether the determinants of going-dark decisions change after SOX. The Act has increased *both* the costs of SEC reporting and the scrutiny and governance imposed on registered firms. Thus, changes in the determinants should provide evidence on the relative role of the cost savings rationale and the agency rationales for going dark after SOX. In Panel B of Table 6, we present results for our comprehensive probit model (i.e., Model 5 in Table 5). We estimate separate probit models for the periods before and after the passage of SOX, so that we do not constrain the coefficients on the base variables (Model 1 in Table 5) and allow for possible changes in the market environment across the two periods.[17] While there are some changes in these control variables, our focus is on the main effects linked to our two explanations for going dark. We find that distress (O-Score) is a significantly more important driver of the going-dark decision prior to SOX. The two agency variables in turn are significant only in the post-SOX period where they have much larger coefficients, though only the FCFProb coefficient is significantly different across the two periods at conventional levels. Board governance and monitoring are significant pre- and post-SOX, though InstInvest shows some decline. Finally, we find that weak state disclosure regulation is a much larger factor in the going-dark decision pre-SOX than post-SOX. This result is plausible, considering that the post-SOX environment is characterized by a substantial increase in monitoring and scrutiny for registered firms. As a result, the difference between strong and weak state regulation may be less of an issue and firms may be motivated to go dark even when they are still subject to some state disclosure. In sum, our results provide some indication that higher scrutiny associated with SOX, and not just increased compliance costs, play a significant role in the decision to go dark.

[17] As a robustness check, we also evaluate the pre- and post-SOX marginal effects of the variables of interest at the (same) global mean, i.e., the mean value of the entire sample, and find consistent results.

4.3. The Consequences of Going Dark

In order to examine the consequences of going dark and to gain more insight into the proposed rationales for going dark, we conduct an event analysis. We analyze the stock price reaction to going dark, aligning our sample in event time based on three possible events: the Form 15 filing; the earlier of the deregistration announcement or the filing; and the earliest of the first 13E-3 filing (which typically explicitly mentions the firm's intention to go dark), the announcement of the Form 15 filing, and the Form 15 filing. These alternative event dates provide some robustness checks.

In Table 7, 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 to more broadly capture lagged reactions, possible leakage of information prior to the event date, and to account for the 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 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, 1977 and Blume and Stambaugh, 1983). The t-statistics reported are based on Brown and Warner (1985) standard errors. Since some of the stocks in our sample have very low prices which yield extreme return observations on both tails, we set prices equal to or below \$.0001 to missing and truncate the top and bottom 0.5% of the return distribution. We follow a similar procedure in other return analyses reported below.

The event window returns are highly significant and economically large. For the event that captures the earliest of the 13E-3 filing, deregistration announcement and filing dates,

the cumulative abnormal return (using the size adjustment) is -7.5% during the [0,1] window, -9.0% for the [0,2] window, and -9.9% over the [-5,5] window. The vast majority of the size-adjusted CARs over the event period are negative, demonstrating that our findings are not driven by a few extreme observations. In the fourth set of returns ("actively traded firms only"), we address the concern that firms without active trading could have more extreme returns during the event window and hence inflate the market reaction. However, we obtain very similar results after removing these firms.

Finally, we make a first attempt to separate the going-dark effect from other influences, such as delisting effects, the filing of Schedule 13E-3 and the requirement for banks to file with their regulators even after going dark. Thus, the last set of returns in Table 7 excludes firms that have to change trading venue as a consequence of going dark, firms that file a Schedule 13E-3, and banks. Focusing on this subset of "pure going-dark firms," we find once again significantly negative returns, amounting to -7.6% over the [-5,5] window. This finding confirms a large negative market reaction attributable to going dark. But note that the results in Table 7 do not control for differences in firm characteristics across the various subsets of returns. Therefore, we also analyze event returns in a regression framework controlling for size and other factors.

Before we turn to the cross-sectional analysis of event returns, we first contrast the market reaction to going dark with the market reaction to going private over the same time period. In Table 8, we report the cumulative returns around our compound event date, which is the earliest of the first Schedule 13E-3 filing date, the announcement date (if there is one), and the Form 15 filing date. The cumulative returns across all event windows (and using either raw, market- or size-adjusted returns) are significantly positive, and there is no significant difference between the pre- and post-SOX period returns.[18] Engel, Hayes, and Wang (2007) and Lehn and Poulsen (1989) (among other going-private studies) also find significantly positive

[18]Engel, Hayes, and Wang (2007) also find no significant effect of SOX on event returns, but they conduct further cross-sectional analyses that show that larger firms with higher insider ownership have a more negative announcement return post-SOX.

returns, which among other things reflects that shares are typically bought out at a premium in going-private transactions. Thus, the decisions to go dark or to go private are clearly viewed very differently by the market. This finding also suggests that some of the negative news that investors infer when a company goes dark may well be relative to the hope that the firm would go private. That is, investors may have an expectation that the firm goes private and react negatively when it announces its decision to go dark instead. As explained before, this negative reaction to going dark can reflect bad news (e.g., the decision may reveal to investors that the firm tried to go private but failed). But it can also reflect concerns of outside shareholders that controlling insiders are reluctant to go private, for example, because it would end their control or hinder their ability to extract private benefits. We further explore these explanations in our cross-sectional analyses in Table 10.

Next, we conduct a set of pooled time-series regressions to control for other contemporaneous events, such as delisting and bankruptcy filings, that might confound the event returns estimated around deregistration. Since for many firms delisting, bankruptcy and deregistration events fall on different dates, we can introduce indicator variables for each of these events to estimate the price reactions associated with the events, and in turn to help isolate the event returns associated with going dark.

We set *Deregistration* equal to one for the day of, and the day after, the earliest of the first 13E-3 filing, the filing and announcement dates of deregistration. The coefficient for *Deregistration* in the first regression of Table 9 captures the average daily price effect in this two-day window. The average daily effect of -.036 is comparable in magnitude to the cumulative two-day event return of -7.9% reported in Table 7. We report t-statistics based on Newey and West (1987) corrected standard errors using up to five lags to account for potential serial correlation in daily returns and heteroscedasticity. We also check whether our inferences are affected by clustering of event days in calendar time. In untabulated regressions, we correct the standard errors of the OLS estimates for possible cross-correlation of returns on the same calendar days and find that the significance levels are very similar and the inferences are unchanged.

Models 2 to 4 in Table 9 introduce controls for delisting and bankruptcy. *Delist* is set equal to one for the day of, and the day after, a company delists from one exchange to another over the sample period around deregistration. *Delist to PS* and *Delist to OTCBB* are similarly defined for delistings to the Pink Sheets and OTC Bulletin Board, respectively.[19] To estimate the effect of bankruptcy filings, *Bankruptcy* is set equal to one on the day of, and the day after, a company files for bankruptcy. Models 2-4 indicate that the coefficients on these controls have plausible signs and capture other price reactions, such as a separate delisting effect. More importantly, however, the *average daily* price impact of deregistration is very similar to that in Model 1, even with these additional controls in place. Thus, the previously estimated deregistration-event returns do not appear to be driven by other contemporaneous and potentially confounding events.[20]

The preceeding analyses provide evidence that the stock market does indeed react negatively to going-dark announcements. As discussed in detail in Section 2.1, one explanation is that outside shareholders view the decision to deregister as merely in the interests of controlling insiders. But the cost savings rationale for going dark can also be consistent with the negative returns if the decision to deregister is triggered by further deteriorating future prospects, and if this change in firm fundamentals is not yet publicly known, and thus inferred from the going-dark announcement.

To further examine the role of the two economic explanations, we conduct a cross-sectional analysis of event returns, using the size-adjusted returns over the [0,2] event window (the other two windows yield consistent results). Table 10 shows that the stock market reaction is negatively associated with size, although the effect is only marginally significant in models 1 and 5. The coefficient on the dummy representing firms already trading in the Pink Sheets prior to deregistration is significantly positive, indicating that these firms experience a less

[19] In unreported regressions, we have also separately analyzed cases where delisting occurs before versus after the deregistration filing date, and we find very similar results to those reported in Table 9.

[20] We have also run similar regressions that control for a potential price pressure effect during the event window, which might result in a significant reversal of the event returns in the days following the event. The coefficients of the price reversal variables are small and not significant, providing further evidence that the large negative deregistration event returns are not simply attributable to price pressure in low-liquidity markets.

negative market reaction. This return differential does *not* simply reflect a smaller decrease in liquidity for Pink Sheet firms after going dark if the drop in liquidity is internalized in the decision to go dark. Firms trading outside the Pink Sheets should recognize that they face a larger drop in liquidity upon going dark and hence should decide to go dark only if they receive cost savings that offset the loss of liquidity (and other reporting benefits). Thus, absent negative news conveyed by the decision itself, the market reaction should not be more negative for non-Pink Sheet firms if they are maximizing firm value.[21] However, the return differential is consistent with the agency explanation. Firms trading on major exchanges or the OTCBB prior to deregistration experience a larger decrease in outside monitoring upon going dark than firms that are already in the Pink Sheets and so the more negative reaction could reflect an anticipated increase in private control benefits and agency costs.

The significantly positive coefficient for banks can be interpreted in a similar fashion. Banks are subject to regulatory oversight and have to make disclosures to their regulators even after deregistration. Thus, investors in going-dark banks are probably less concerned about value losses attributable to agency problems.

We also find that firms that must file a Schedule 13E-3 because of transactions that decrease their holders of record below 300 have announcement returns that are significantly higher than other going-dark firms. These transactions require shareholder consent or tendering of shares, and the filing of Schedule 13E-3, which among other things includes a fairness opinion by an independent party. Thus, the market reacts less negatively when outside investors are better protected and the going-dark transaction is subject to the approval of shareholders, which lends further support to the agency explanation.

Event returns are slightly more negative following the passage of SOX, although the effect is not statistically significant. Since it is widely accepted that the costs of reporting have increased following the passage of SOX, one might expect investors to react less negatively to

[21] Note further that information asymmetry should be lower for firms that are traded on major exchanges prior to going dark. Thus, if anything, non-Pink Sheet firms should experience a less negative reaction if negative news is to explain the return differential.

deregistrations after SOX. However, if SOX has also strengthened the governance and scrutiny faced by registered firms, going dark sends an even worse signal to outside investors after SOX, in which case the event returns could become even more negative in the post-SOX period. Along the same lines, the positive and significant coefficient on the cross-term of SOX and File13E-3 in Model 2 indicates that the Schedule 13E-3 effect is stronger after SOX, consistent with the notion that investor protection is taken more seriously in the post-SOX period.

If the negative market returns associated with going dark are due to the revelation of negative news about firms' future prospects, the market reaction should be larger (i.e., more negative) if there is more information asymmetry between the firm and investors. Huddart and Ke (2007) find that R&D is superior to many other commonly used proxies for information asymmetry, and thus we include R&D intensity in the fiscal year prior to deregistration in Model 3. We find that firms with higher levels of R&D, and hence more information asymmetry, indeed have significantly lower event returns. This result provides support for the explanation that we observe a negative market reaction in part because the going-dark decision itself conveys negative news about future prospects.

We also find (but do not tabulate) that the firm characteristics from our probit analysis generally do not have significant relations to the event returns, which is to be expected if the market prices observable firm characteristics at the time they become known. However, there are significant associations for FCFProb and the interaction between FCFProb and Board Gov (Model 4). The signs of both associations are consistent with our private benefits explanation. If firms with higher free cash flow and weaker board governance go dark, agency problems are likely to worsen relative to the situation under SEC reporting. In this case, the market reaction should be negative when the firm announces that it will go dark.[22] The interaction effect

[22]However, it is attenuated by the market's knowledge that such firms are more likely to go dark. We also perform the regressions in Table 10 using propensity-adjusted data. The probability of going dark (p) is calculated for each going-dark firm based on Model 5 in Table 5, and regressions are performed using event returns divided by (1-p). These regressions produce similar results to those reported in Table 10. Prabhala (1997) argues that, in the absence of an appropriate "non-event" sample, the standard event study methodology that we follow in Table 10 is preferred.

shows that this effect is less negative when board governance is stronger, which is plausible. In Model 5, we find that firms incorporated in states with stronger reporting provisions have significantly less negative event returns. This differential in the market reaction is consistent with the interpretation that firms in these states have to provide more information and hence are subject to more monitoring after deregistration than dark firms in other states.

In sum, the cross-sectional analyses are consistent with the notion that the market reaction at the going-dark announcement prices changes in outside monitoring and concerns about insiders' interests. Thus, at least for some firms, the market reaction appears to capture more than bad news about future prospects.

4.4. Post-deregistration analysis

A potentially powerful way to provide additional evidence regarding our two explanations for going dark would be to examine operating performance and governance changes after firms have gone dark. However, the feasibility of such an analysis is limited by the very nature of the corporate decision we are studying. By going dark, firms are no longer obliged to report to the SEC, which is one of the most important sources of information on public companies.[23]

Firms could of course still choose to voluntarily provide financial information to investors after they go dark. There are two natural places where firms would publicly post this information: on the companies' web sites, and on pinksheets.com, which promotes itself as an information repository for firms quoted on the Pink Sheets. Table 11 shows that fewer than 10% of the going-dark firms (44 out of 484) post financial statements after they deregister, and even fewer of these statements are audited. In addition to checking for public disclosure on the web, we conduct a comprehensive phone survey of all going-dark firms in our sample to see whether companies willingly provide financial information to potential investors via

[23] Consistent with this, after firms go dark, we find no information on these firms in the typical databases used to obtain information on financials, governance, audit fees, insider trading, and alternative financing arrangements such as PIPEs.

mail. Only 22 firms were willing to privately share information in this manner (5 of which also posted financial information on their websites).[24]

This evidence on voluntary disclosure indicates that when firms go dark, they not only suspend formal SEC reporting, but they also typically cease to publicly provide any financial information. It is possible that some firms view even informal disclosure as costly, and that a complete retreat from public disclosure can create more value than simply avoiding the additional costs associated with SEC reporting. There may also be relatively little benefit from disclosure if there is no commitment via strict reporting requirements. However, our agency explanation is also, and perhaps even more convincingly, consistent with the lack of (even fairly inexpensive) post-deregistration financial disclosure, as opacity facilitates insiders' ability to consume private benefits.[25] This finding also ties back to our earlier result in Section 4.1 that firms in states requiring periodic reporting to shareholders are less likely to go dark. Interestingly, we also find (in untabulated regressions) that both public and private disclosure after deregistration is positively associated with firms' announcement returns. It is possible that investors anticipate or know at the going-dark announcement which firms will continue to disclose after they go dark. Alternatively, the post-deregistration disclosures are not priced per se. They could simply indicate firms for which investors have fewer agency concerns at the time of the going-dark announcement.

Since stocks of dark firms continue to trade, two measures that can be more carefully studied are post-deregistration returns and liquidity. In unreported results (available from the authors), we find that while raw post-deregistration returns for our sample period are on

[24]Our survey reveals many disconnected phone numbers (in March 2006). However, even if all these firms were no longer operating, there would be at most 95 additional firms beyond those already identified as no longer trading in June 2005 (see Table 2). Thus, the finding of many disconnected phone numbers does not invalidate our earlier observation that most firms survive for a substantial time period after going dark.

[25]We have checked whether the incidence of lawsuits filed increases following deregistration using data from the SEC Accounting and Auditing Enforcement Releases as well as the Federal Private Securities Class Action database. For our going-dark firms, only 8 lawsuits were filed after deregistration, and only one of these lawsuits related to fraud that allegedly occurred after deregistration. The lack of reliable information for fraudulent firms may well be contributing to the low likelihood of such lawsuits being filed. More generally (before or after deregistration), going-dark firms were about as likely to be sued (5.8% of sample) as going-private (4.6%) and control sample (7.2%) firms.

average positive, abnormal returns relative to comparable benchmarks are quite negative. The level of abnormal returns is sensitive to the choice of benchmark and the weighting for buy-and-hold portfolios. Using an equally-weighted portfolio that has long positions in going-dark firms and short positions in size- and performance-matched firms, the twelve-month buy-and-hold portfolio return is -15.7% (and becomes significantly more negative as the holding period lengthens). The substantial long-run underperformance suggests that the full impact of deregistration might not be captured by the announcement window returns, and that these announcement returns are certainly not understated.

In Table 12, we analyze the impact of deregistration on market liquidity. Aside from documenting long-run effects of deregistration, this analysis is novel because prior research focuses on the effects of *increases* in firms' commitment to disclosure (e.g., Welker (1995) and Leuz and Verrecchia (2000)). The effects on market liquidity after deregistration are a priori not obvious considering that firms have already experienced a significant decline in liquidity, which as our probit analysis shows is a factor in the going-dark decision in the first place.

We measure liquidity on a monthly basis, from one year prior to deregistration to one year thereafter. In Model 1, we use the percentage of days traded, and in Models 2-6 we use log of volume.[26] We find that liquidity drops following deregistration, consistent with the positive association between disclosure (increases) and liquidity documented in prior studies, and despite the fact that going-dark firms experience a decrease in liquidity prior to deregistration. Since delisting often occurs at the time of deregistration or shortly before, we control separately for the impact of delisting to the OTCBB and to the Pink Sheets. Not surprisingly, the delisting coefficients are both negative, consistent with Harris, Panchapagesan, and Werner (2006) and Bushee and Leuz (2005). To further ensure that the deregistration dummy does not pick up the effects of delisting, we analyze two subsamples where there is no delisting around the time of deregistration, i.e., firms that have always traded in the Pink Sheets (Model 3) and

[26]In unreported regressions, we obtain similar results using monthly turnover. We also obtain results that are similar to those shown in Panel C when we include additional control variables, such as stock price level, volatility of returns, past three-month return, and ownership concentration.

firms that have traded in the Pink Sheets at least one year prior to deregistration (Model 4). We again find that deregistration has a significantly negative effect on liquidity, suggesting that the effect is separate from delisting, largely stemming from the lack of disclosure. Consistent with this interpretation, we find in Models 5 and 6 that firms that disclose after going dark, either due to bank regulation or through voluntarily posting financial information on the web, do not experience the same decrease in liquidity following deregistration, as indicated by the significantly positive interaction effects for Banks and Disclose.

5. Conclusions

This study presents evidence supporting two economic explanations (cost savings and agency conflicts) for why firms go dark. Consistent with the cost savings rationale, going dark firms are smaller and have poorer stock market performance, higher leverage, and fewer growth opportunities than the population of firms that could but choose not to go dark. They also exhibit higher levels of distress and experience a decline in capital market interest. It is plausible that, for such firms, the cost savings from SEC deregistrations exceed the (presumably low) benefits of continued reporting, which is consistent with claims in companies' press releases that the decision to go dark maximizes firm value and is in the interest of shareholders.

These claims and the cost savings explanation are not inconsistent with our finding that the market reaction to the going-dark decision is on average negative. Even if a firm is better off without SEC reporting, the decision to go dark likely reveals negative information to outside shareholders about the firm's future prospects. For instance, outside shareholders could infer from the going-dark decision that managers do not expect to raise external financing in the near future and hence that growth prospects must have deteriorated. Consistent with this explanation, we find that the market reaction to going-dark announcements is more negative for firms with larger information asymmetry about their future growth opportunities (i.e., firms with higher R&D intensity). We also find that stronger performing firms appear to go private

rather than go dark, and that the market's reaction to firms going private is significantly positive. The latter findings suggest that going dark can be viewed as a weak firm's version of exit from the public market.

However, we also find evidence consistent with the agency explanation for going dark. We find that firms that go dark have on average larger (positive and negative) accruals relative to their cash flow from operations (consistent with poorer accounting quality and hiding motives), larger free cash flow problems, and weaker board governance and outside monitoring. Our results suggest that, as predicted, these proxies for agency conflicts play a larger role when governance is weak. We also document that firms that are subject to state provisions requiring some form of disclosure are much less likely to deregister and that few firms voluntarily provide financial statements (privately or publicly) following deregistration. While reporting costs could still play a role in the latter findings, they are also consistent with a desire to avoid outside scrutiny.

Thus, the negative market reaction to deregistration announcements could also reflect that, for some firms, outside (or minority) shareholders view going dark as serving primarily insiders' interests, e.g., to protect their private control benefits or to decrease outsider interference and legal risk. Consistent with this notion, we find that firms with larger free cash flow exhibit more negative announcement returns, particularly if they also have weak board governance. We also document that the negative market reaction to going dark is less pronounced when outside investors are better protected, as in cases where firms have to file Schedule 13E-3 with the SEC, where state disclosure provisions apply after going dark, and when the loss in outside monitoring is smaller, as for banks or firms that are already in the Pink Sheets prior to going dark. These findings indicate that concerns about agency problems are priced at the going-dark announcement and at least partly explain the negative market reaction.

Taken together, our results support the two proposed explanations and show that going dark is neither completely benign nor simply opportunistic. Examining the impact of SOX on deregistrations, we find that a large part, but not all, of the recent increase in going dark can

be viewed as associated with the Act. While this assocation could simply reflect the increased reporting burden after SOX, we find some evidence that financial distress has become less important in explaining going-dark decisions since the passage of the Act, while the proxy for free cash flow problems has become more important. Although these results need to be interpreted cautiously, they are consistent with the view that SOX and its provisions have not only raised reporting costs, but also have increased the level of scrutiny that SEC registrants face.

In this regard, it is perhaps disconcerting that some firms can simply deregister, leave the SEC reporting system and make even fewer disclosures. This point notwithstanding, the presumably unintended decrease in disclosure for going dark firms is likely to have a limited effect on the informational efficiency of the market as a whole, considering that going-dark firms tend to be fairly small and have limited capital market benefits at the time they exit. Making it harder for such firms to deregister may protect outside shareholders in some cases, but it can also have the detrimental effect of reducing shareholder value for firms that are better off exiting the SEC reporting system. Besides, further restrictions on firms' ability to deregister would likely change the propensity of firms to enter the system in the first place. One alternative to restricting exit per se is to change the process to ensure that outside investors are protected when firms leave the SEC disclosure system. Another alternative is to decrease firms' incentives to deregister through more flexible versions of governance and reporting regulations that better match costs with firm size and external financing needs. Managers seeking to avoid outside scrutiny would then no longer be able to use the guise of cost savings by pooling together with those deregistering primarily to reduce reporting costs.

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Appendix: The Deregistration Process

Under the Securities Exchange Act and the SEC's 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 "holder 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.[27]

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 the provision(s) of the 1934 Act under Rules 12g-4, 12h-3, or 15d-6 that were relied upon to suspend the duty to file reports. 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. Going dark thus not only drastically diminishes the amount of financial information provided to outside shareholders, it also alters the protection available to these investors.

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

[27] In 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. 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 (see Ascarelli, 2004). The SEC is currently considering alternative criteria for deregistration, e.g., based on firms' U.S. trading volume.

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. Although 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 their own certificates ignore the offer.

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. A 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). 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 unlisted companies that have more than 500 equity holders of record and $10 Million in assets at the end of the previous calendar year, are required to register those equity securities with the SEC. Nasdaq companies need only provide written notice to Nasdaq of their request for voluntary delisting, stating the reason 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 thus become subject to a filing requirement under Section 15(d), but this obligation can be suspended under Rule 12h-3 (the company simply needs to check an additional box on Form 15).

If the company's stock has been quoted on a major exchange, on Nasdaq or on 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, 2005). 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. For 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. 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). A 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.

Table 1: Timing of Deregistration Filings

This table reports the yearly frequency of going-dark and going-private Form 15 filings. Going-dark firms subsequently trade in the OTC markets, while going-private firms do not. *Daily Price* indicates the number of firms for which we have daily price and trading data. *Financial* indicates the number of firms for which we have annual financial data for a fiscal year prior to deregistration.

Year	1998	1999	2000	2001	2002	2003	2004	1998-2004	Daily Price	Financial
Going Dark	28	29	14	43	65	183	122	484	446	419
Going Private	23	54	72	81	61	79	66	436	313	395

Table 2: Trading After Going Dark

This table presents trading information for 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, Reuters, and CRSP to identify the last available trading date for our going-dark firms. The third column shows the number of firms for which this information was available. *Active Firms* are those that appear to be quoted for trading in an OTC market as of 6/30/2005, based on trade information on webpages or in our daily trading data from Datastream. However, for 17 of the 417 active firms, we are not able to obtain the specific last trade information.

		# of firms with	# of firms with last trade after						# of active firms
Year	# of firms	last trade infor.	12/31/99	12/31/00	12/31/01	12/31/02	12/31/03	12/31/04	as of 6/30/05
1998	28	24	24	23	23	22	20	19	20
1999	29	26		24	22	20	17	16	16
2000	14	14			14	14	12	11	12
2001	43	43				43	39	36	35
2002	65	65					61	53	54
2003	183	173						154	160
2004	122	121						116	120
Total	484	466							417

Table 3: 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 according to the industry groups in Campbell (1996), with two exceptions. Since there are no going dark firms in the *Petroleum Industry*, control and going-private firms in this group have been included in the *Basic Industry* group for purposes of our analysis. We also separate out *Banks* from other financial companies. For each industry, we report both the number of firms and the percentage in the total sample.

Industry Segments	Going-Dark	% of Total	Going-Private	% of Total
Banks (SIC 60)	48	9.92%	25	5.73%
Finance/Real Estate (SIC 61-69)	51	10.54%	45	10.32%
Consumer Durables (SIC 25, 30, 36-37, 50, 55, 57)	51	10.54%	51	11.70%
Basic Industry (SIC 10-14, 24, 26, 28-29, 33)	34	7.02%	35	8.03%
Food/Tobacco (SIC 1, 20, 21, 54)	5	1.03%	23	5.28%
Construction (SIC 15-17, 32, 52)	15	3.10%	11	2.52%
Capital Goods (SIC 34-35, 38)	69	14.26%	46	10.55%
Transportation (SIC 40-42, 44, 45, 47)	5	1.03%	8	1.83%
Utilities (SIC 46, 48-49)	12	2.48%	23	5.28%
Textiles/Trade (SIC 22-23, 31, 51, 53, 56, 59)	34	7.02%	35	8.03%
Services (SIC 72-73, 75, 80, 82, 89)	121	25.00%	91	20.87%
Leisure (SIC 27, 58, 70, 78-79)	39	8.06%	43	9.86%
Total	484		436	

Table 4: Financial and Governance Characteristics of Firms

This table presents the definitions and summary statistics of the financial and governance variables for the going-dark, the control, and the going-private samples. Every control firm has the 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 prior to going dark or going 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 variable, and reports 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.

Panel A: Variable Definitions

Assets	Total book value of firm assets
Past-year Return	Common stock return over the last fiscal year
Leverage	Ratio of long-term debt to assets
Asset Growth	Average growth rate in total assets over the past two fiscal years
$\Delta Log(VOL)$	Change in the logarithm of shares traded over last fiscal year
O-Score	Bankruptcy and distress score based on Ohlson (1980)
Δ ST Debt	Change in the current portion of long-term debt over assets
FCFProb	(Max. internally financed growth) - (2-digit industry median asset growth), where max. internally financed growth = ROA/(1-ROA), ROA is income before extraordinary items over total assets
Large Accruals	The 3-year median ratio of absolute value of accruals to absolute value of op. cash flow, where accruals=(Δ non-cash current assets - Δ current liabilities (excl. short-term debt) - depreciation), and op. cash flow=earnings before extraordinary items - accruals
R&D	R&D expenditures over total assets
InstInvest	=1 if the firm has institutional ownership, and =0 otherwise
Board Gov	The number of independent directors (neither current nor former corporate officers) on the board.
Strong State Reg	=1 if state of incorp. requires periodic reporting to shareholders, and =0 otherwise
Medium State Reg	=1 if the state of incorp. requires financial reporting upon shareholders' request, and =0 otherwise
Weak State Reg	=1 if the state of incorp. does not requires any financial disclosure to shareholders, and =0 otherwise
State Reg	=1 if Strong State Reg=1 or Medium State Reg=1, and =0 otherwise

(Table 4 Continued)

Panel B: Summary Statistics

	Going-Dark	# of obs.	Control Sample	# of obs.	Wilcoxon z	Going-Private	# of obs.	Wilcoxon z
Financials								
Market value ($M)	3.96 (25.19)	402	58.62 (281.22)	7115	-21.75**	41.45 (32.32)	356	-14.80**
Assets ($M)	16.44 (90.96)	419	56.21 (367.34)	7212	-10.49**	98.15 (1053)	395	-12.53**
Past-year Return	-0.26 (0.03)	384	-0.05 (0.35)	6920	-6.26**	-0.09 (0.13)	348	-4.09**
Leverage	0.05 (0.17)	400	0.04 (0.17)	7135	0.76	0.13 (0.22)	382	-4.10**
Asset Growth	-0.04 (0.13)	412	0.09 (0.44)	6978	-10.07**	0.05 (0.24)	388	-6.20**
$\Delta Log(VOL)$	-0.14 (-0.04)	404	0.08 (0.15)	7010	-5.98**	-0.14 (-0.17)	354	-0.06
O-Score	0.63 (0.58)	385	0.10 (0.34)	6689	12.10**	0.07 (0.26)	357	11.37**
Δ(ST Debt)	0.00 (0.02)	392	0.00 (0.00)	6943	1.51	0.00 (0.00)	377	1.90†
FCFProb	-0.18 (-0.25)	416	-0.13 (-0.21)	7097	-4.05**	-0.07 (-0.12)	391	-9.17**
Large Accruals	0.89 (1.21)	392	0.63 (0.96)	6628	5.74**	0.81 (1.06)	354	1.76†
R&D	0.00 (0.04)	410	0.00 (0.08)	7142	-9.06**	0.00 (0.03)	395	-0.04
Corporate Governance								
InstInvest	1.00 (0.61)	344	1.00 (0.88)	5923	-15.15**	1.00 (0.84)	359	-7.04**
Board Gov	4.00 (4.08)	372	5.00 (4.87)	6020	-6.91**	5.00 (5.12)	372	-5.86**
Strong State Reg	0.00 (0.22)	419	0.00 (0.44)	7212	-8.79**	0.00 (0.16)	395	2.17*
Medium State Reg	0.00 (0.32)	419	0.00 (0.42)	7212	-4.28**	0.00 (0.23)	395	2.62**
Weak State Reg	0.00 (0.46)	419	0.00 (0.14)	7212	17.78**	1.00 (0.61)	395	-3.70**
State Reg	1.00 (0.54)	419	1.00 (0.86)	7212	-17.78**	0.00 (0.39)	395	4.06**

Table 5: Probit Analyses of Firms' Deregistration Decisions

This table reports results of multivariate probit analyses. In Panel A, we combine the going-dark sample together with a sample of control firms which have fewer than 300 holders of record (or 500 if the total assets is below $10 million in the previous three fiscal year ends). In Panel B, the going-dark and going-private samples are combined. Variable definitions are provided in Table 4. Industry controls based on the classification in Campbell (1996) and year dummies are included in all regressions. The z-statistics of the coefficient estimates based on robust standard errors are reported in parentheses. For the interaction terms, the z-statistics are calculated according to Norton, Wang and Ai (2004). **, *, † indicate significance at the 1, 5, and 10% levels, respectively.

Panel A: Determinants of Going Dark Decisions

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Log(assets)	-0.14 (-12.20)**	-0.10 (-5.58)**	-0.17 (-9,82)**	-0.11 (-5.61)**	-0.16 (-12.47)**	-0.11 (-4.06)**	-0.10 (-3.95)**
Log(return)	-0.14 (-4.77)**	-0.10 (-3.36)**	-0.17 (-5.17)**	-0.18 (-5.11)**	-0.14 (-4.56)**	-0.14 (-3.66)**	-0.14 (-3.58)**
Leverage	0.28 (2.59)**	0.20 (1.73)†	0.39 (3.33)**	0.28 (2.19)*	0.27 (2.33)*	0.22 (1.53)	0.20 (1.41)
Asset Growth	-0.11 (-2.18)*	-0.11 (-2.18)*	-0.10 (-1.80)†	-0.17 (-2.13)*	-0.12 (-2.40)*	-0.16 (-1.88)†	-0.15 (-1.88)†
O-Score		0.35 (3.57)**			0.82 (6.10)**	0.81 (5.99)**	0.77 (5.74)**
$\Delta Log(VOL)$		-0.10 (-3.28)**			-0.08 (-2.36)*	-0.08 (-2.34)*	-0.08 (-2.26)*
Large Accruals			0.07 (2.96)**		0.06 (2.27)*	0.06 (2.26)*	0.07 (2.41)*
FCFProb			0.52 (3.34)**		1.11 (4.80)**	1.41 (4.06)**	1.63 (5.58)**
Board Gov				-0.05 (-2.64)**	-0.05 (-2.40)*	-0.07 (-2.70)**	-0.05 (-2.34)*
InstInvest				-0.55 (-6.01)**	-0.47 (-4.62)**	-0.47 (-4.63)**	-0.71 (-5.61)**
Strong State Reg				-0.95 (-11.68)**	-0.91 (-10.70)**	-0.91 (-10.66)**	-0.92 (-10.68)**
Medium State Reg				-0.85 (-11.00)**	-0.85 (-10.21)**	-0.84 (-10.17)**	-0.85 (-10.12)**
FCFProb*BoardGov						-0.08 (-1.74)†	
FCFProb*InstInvest							-0.94 (-3.26)**
Constant	0.29 (1.56)	-0.18 (-0.71)	0.64 (2.59)**	0.29 (1.55)	0.97 (3.12)**	1.05 (3.28)**	1.12 (3.53)**
Ind./Year Dum.	Included	Included	Included	Included	Included	Included	Included
# of obs.	7156	6710	6605	5975	5511	5511	5511
Pseudo R-squared	0.17	0.19	0.19	0.28	0.31	0.31	0.32

(Table 5 Continued)

Panel B: Going Dark vs Going Private

	Model 1	Model 2	Model 3	Model 4	Model 5
Log(assets)	-0.41 (-10.66)**	-0.37 (-8.62)**	-0.39 (-9.10)**	-0.30 (-6.87)**	-0.35 (-8.80)**
Log(return)	-0.25 (-4.08)**	-0.10 (-1.53)	-0.18 (-2.77)**	-0.29 (-3.81)**	-0.27 (-4.02)**
Leverage	0.10 (0.46)	0.20 (0.77)	0.18 (0.72)	0.12 (0.50)	0.17 (0.70)
Asset Growth	0.07 (1.42)	0.07 (1.34)	0.06 (1.13)	0.04 (0.96)	0.06 (1.34)
O-Score		1.05 (5.86)**			1.16 (4.80)**
$\Delta Log(VO)$		0.04 (0.62)			0.02 (0.36)
FCFProb			-0.91 (-2.52)*		0.15 (0.31)
Large Accruals			0.09 (1.69)†		0.05 (0.95)
Board Gov				-0.09 (-3.12)**	-0.09 (-2.80)**
InstInvest				-0.40 (-2.44)*	-0.38 (-2.12)*
Strong State Reg				0.11 (0.65)	0.17 (0.91)
Medium State Re				-0.05 (-0.34)	-0.00 (-0.01)
Constant	3.93 (8.66)**	3.30 (6.20)**	3.68 (7.17)**	3.33 (7.03)**	2.57 (4.41)**
Ind./Year Dum.	Included	Included	Included	Included	Included
# of obs.	718	665	663	644	587
Pseudo R-squared	0.30	0.37	0.32	0.31	0.38

Table 6: An Analysis of Sarbanes-Oxley Effects

Panel A: The Effect of the Sarbanes-Oxley Act on Going-Dark and Going-Private Transactions

This panel reports the effect of the Sarbanes-Oxley Act on firms' going-dark and going-private decisions. The dependent variable is the number of going-dark or going-private transactions in a month from January 1998 to December 2004. *SOX* equals one for all firms that decided to deregister after 7/31/2002, and zero otherwise. *Market Return* is the equally-weighted market return over the prior year. *SOX 404 Enactment Proposed* indicates the time period after October 2002 (when the SEC proposed implementation rules for Section 404). *SOX 404 Enactment Final* indicates the time period after May 2003 (when the SEC revised and enacted the final implementation rules for Section 404). *SOX Extension* indicates the time period after February 2004 (when the SEC extended Section 404 compliance deadlines). *IPO Volume* is the total number of IPOs over the prior year. *Time Trend* is a yearly trend variable. **, *, † indicate significance at the 1, 5, and 10% levels, respectively.

	Going-Dark		Going-Private	
	Model 1	Model 2	Model 1	Model 2
SOX	9.98 (7.84)**	4.93 (2.51)*	-0.33 (-0.31)	1.70 (0.96)
SOX 404 Enactment Proposed		7.55 (3.64)**		-1.08 (-0.58)
SOX 404 Enactment Final		-2.21 (-1.11)		-3.10 (-1.73)†
SOX 404 Extension		-3.65 (-1.96)**		1.86 (1.11)
Market Return	1.75 (0.61)	-1.00 (-0.34)	2.66 (1.41)	6.23 (2.40)*
IPO Volume	-0.01 (-4.50)**	-0.01 (-1.76)†	-0.01 (-4.52)**	-0.01 (-3.95)**
Time Trend	0.54 (1.68)†	0.40 (1.32)	0.48 (1.76)†	0.55 (2.01)*
Constant	-1080.77 (-1.67)†	-799.63 (-1.32)	-943.55 (-1.74)†	-1087.78 (-1.99)*
# of Obs.	84	84	84	84
R-squared	0.70	0.75	0.22	0.26

(Table 6 continued)

Panel B: Determinants of Going Dark Decision Before vs. After Sarbanes-Oxley

This panel reports results of multivariate probit analyses for firms going dark before versus after the passage of SOX. The going-dark sample is combined together with a sample of control firms which have fewer than 300 holders of record (or 500 if the total assets is below $10 million in the previous three fiscal year ends). Variable definitions are provided in Table 4. Industry controls based on the classification in Campbell (1996) and year dummies are included in all regressions. The z-statistics of the coefficient estimates based on robust standard errors are reported in parentheses. **, *, † indicate significance at the 1, 5, and 10% levels, respectively.

	Model 1		Difference
	Pre-SOX	Post-SOX	χ^2(p-value)
Log(assets)	-0.11 (-2.74)**	-0.11 (-3.59)**	0.11 (0.74)
Log(return)	-0.02 (-0.32)	-0.17 (-4.38)**	2.53 (0.11)
Leverage	0.41 (2.07)*	0.17 (1.04)	1.08 (0.30)
Asset Growth	-0.01 (-0.37)	-0.55 (-4.83)**	17.23 (<0.001)**
O-Score	1.18 (4.60)**	0.62 (3.98)**	2.93 (0.09)†
$\Delta Log(VOL)$	-0.09 (-1.33)	-0.07 (-1.63)	0.03 (0.86)
FCFProb	0.53 (1.08)	1.49 (5.25)**	2.72 (0.10)†
Large Accruals	0.03 (0.64)	0.07 (1.97)*	0.47 (0.49)
Board Gov	-0.06 (-1.72)†	-0.04 (-1.74)†	0.29 (0.59)
InstInvest	-0.71 (-4.14)**	-0.46 (-3.96)**	1.33 (0.25)
Weak State Reg	1.26 (9.20)**	0.71 (7.37)**	10.68 (0.001)**
Constant	-0.44 (-0.79)	0.39 (1.14)	
Ind./Year Dum.	Included	Included	
# of obs.	2114	3397	
Pseudo R-squared	0.38	0.32	

Table 7: Market Reaction to Going Dark

This table reports cumulative returns around three different event dates and over three different event windows. In addition to the *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)* denotes the earlier between the deregistration announcement date and the Form 15 filing date. *Min(13E-3, Ann., Filing)* denotes the earliest of the first Schedule 13E-3 filing, the deregistration announcement date, and the Form 15 filing date. All the 484 firms in the going-dark sample have Form 15 filing dates. 242 firms have deregistration announcement dates, and 68 firms filed Schedule 13E-3. The second-last column shows the number of observations used to compute mean cumulative returns. The last column shows the number of size-adjusted cumulative abnormal returns that are negative for the [-5,5] event window. *Actively traded firms* are firms whose shares were traded over the [-95, -6] window. *"Pure" Going Dark firms* are firms whose stock traded on the Pink Sheets before the earlier of the deregistration announcement and filing (and thus do not delist), have not filed a Schedule 13E-3, and are not banks. 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]	[0,1]	[0,2]	[-5,5]		
Filing Date	-0.058	-0.059	-0.059	-0.080	-0.107	440	301
	(-6.53)**	(-7.48)**	(-6.97)**	(-7.69)**	(-2.45)*		
Min (Ann., Filing)	-0.078	-0.080	-0.079	-0.104	-0.112	440	302
	(-9.16)**	(-9.61)**	(-9.58)**	(-10.03)**	(-2.71)**		
Min (13E-3, Ann., Filing)	-0.074	-0.075	-0.075	-0.090	-0.099	439	294
	(-8.52)**	(-9.00)**	(-9.11)**	(-8.37)**	(-2.59)**		
Min (13E-3, Ann., Filing)	-0.076	-0.078	-0.077	-0.092	-0.106	415	274
(Actively traded firms only)	(-8.52)**	(-8.93)**	(-8.94)**	(-8.45)**	(-2.54)*		
Min (Ann., Filing)	-0.042	-0.043	-0.043	-0.053	-0.076	117	76
("Pure" Going Dark Firms)	(-4.53)**	(-4.60)**	(-4.49)**	(-3.37)**	(-1.73)†		

Table 8: Market Reaction to Going Private

This table reports *Raw*, *Market-adjusted* and *Size-adjusted* cumulative returns around the earliest of the first Schedule 13E-3 filing date, the going-private announcement date, and the Form 15 filing date. 412 firms in the going-private sample filed Schedule 13E-3, 413 firms had going-private announcement dates, and 436 firms filed Form 15. Post-SOX includes all going-private transactions for which the Form 15 filing date fell in the period beginning 8/1/2002. The second-last column shows the number of observations used to compute mean cumulative returns. The last column shows the number of size-adjusted cumulative abnormal returns that are positive for the [-5,5] event window. The last row analyzes the difference between pre- vs. post-SOX cumulative returns. Brown-Warner t-statistics for two-sided tests are presented in parentheses. **,*, † indicate significance levels at 1, 5, 10%, respectively.

	Raw	Market-Adj.	Size-Adjusted			N	# of Positive
	[0,1]	[0,1]	[0,1]	[0,2]	[-5,5]		
Min(13E-3, Ann., Filing)	0.144	0.143	0.142	0.142	0.198	311	239
	(29.66)**	(29.00)**	(29.23)**	(23.86)**	(17.85)**		
Pre-SOX	0.152	0.151	0.149	0.149	0.217	194	152
	(31.28)**	(30.61)**	(30.76)**	(25.11)**	(6.07)**		
Post-SOX	0.131	0.130	0.130	0.130	0.168	117	87
	(26.92)**	(26.27)**	(26.63)**	(21.75)**	(10.49)**		
Difference	0.021	0.021	0.020	0.019	0.048		
	(0.52)	(0.53)	(0.49)	(0.46)	(1.15)		

Table 9: Time-Series Analysis of Deregistration Effect

This table reports the results from pooled, cross-sectional time-series regressions of firms' daily returns on the size portfolio return and deregistration, delisting and other dummy variables. For each firm in our sample, *Deregistration* equals one for the day, and the day after, the earlier of a company's Form 15 filing date and the deregistration announcement date. *Delist* equals one for the day, and the day after, a company delists from one exchange to another during the year before deregistration and the 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. Bankruptcy equals one on the day of, and the day after, the company files for bankruptcy. t-statistics are based on Newey-West corrected standard errors using up to 5 lags. **,*, † indicate significance levels at 1, 5, 10%, respectively.

	Model 1	Model 2	Model 3	Model 4
Deregistration	-0.036 (-6.13)**	-0.034 (-5.85)**	-0.034 (-5.86)**	-0.033 (-5.70)**
Delist		-0.033 (-3.46)**		-0.033 (-3.41)**
Delist to OTC			-0.043(-2.47)*	
Delist to BB			-0.031 (-2.78)**	
Bankruptcy				-0.122 (-4.84)**
Size Portfolio	0.301 (6.37)**	0.302 (6.39)**	0.302 (6.39)**	0.303 (6.41)**
Constant	0.005 (14.14)**	0.005 (14.55)**	0.005 (14.55)**	0.005 (14.75)**
# of obs.	126624	126624	126624	126624
F-stat	38.66	30.01	22.72	28.80

Table 10: Cross-Sectional Determinants of Deregistration Event Returns

This table reports the cross-sectional determinants of event returns. The event return is the cumulative size portfolio adjusted returns during the [0,2] window surrounding the earlier of the 13E-3 filing, announcement or Form 15 filing dates for deregistration. *Log(MV)* is the log of market value three months before deregistration. *SOX* equals one for all firms that made the deregistration decision after 7/31/2002, and zero otherwise. *File 13E-3* equals one if the firm filed a Schedule 13E-3, and zero otherwise. *Pink Sheets* equals one if the firm's stock had been traded on Pink Sheets before deregistration announcement or filing, and zero otherwise. *Bank* equals one if the firm's SIC code lies between 6000 and 6100, and zero otherwise. *R&D* is the R&D expense scaled by the book value of assets. The definitions of other variables are provided in Table 4 Panel A. The industry dummies are based on the classification in Campbell (1996), as detailed in Table 3. **, *, † indicate significance levels at 1, 5, 10%, respectively.

	Model 1	Model 2	Model 3	Model 4	Model 5
Log(MV)	-0.01 (-1.67)	-0.01 (-1.17)	-0.01 (-0.87)	-0.01 (-1.36)	-0.01 (-1.89)†
SOX	-0.02 (-0.73)	-0.04 (-1.29)	-0.02 (-0.57)	0.001 (0.04)	-0.03 (-0.91)
File 13E-3	0.16 (3.54)**	0.05 (1.16)	0.13 (3.80)**	0.17 (3.31)**	0.16 (3.60)**
Pink Sheets	0.09 (2.98)**	0.09 (3.09)**	0.06 (2.17)*	0.09 (2.89)**	0.09 (3.15)**
Bank	0.11 (2.62)**	0.11 (2.43)*	0.10 (2.31)*	0.09 (2.15)*	0.13 (2.84)**
SOX*File 13E-3		0.15 (2.08)*			
R&D			-0.25 (-1.90)†		
FCFProb				-0.19 (-1.72)†	
Board Gov				0.01 (1.34)	
FCFProbXBoardGov				0.06 (2.45)*	
Strong State Reg					0.06 (1.71)†
Medium State Reg					-0.01 (-0.33)
Constant	-0.13 (-2.70)**	-0.12 (-2.34)*	-0.12 (-2.55)*	-0.18 (-3.14)**	-0.15 (-3.12)**
Industry Dummies	Included	Included	Included	Included	Included
# of Obs.	407	407	386	356	407
R-squared	0.11	0.11	0.11	0.12	0.12

Table 11: Financial Disclosure After Going Dark

This table reports the number of firms that voluntarily disclosed (audited or unaudited) financial statements at least one quarter after going dark. The financial statements were found either on the firm's web site or on the Pink Sheets web site (under the Financial Reports tab for the company), or both, in November 2005. Of the 448 firms for which no financials were found on the web, 253 did not have websites. Of the 464 companies for which no financial information was made available on pinksheets.com, 21 were not listed there. We also contacted our sample firms by phone or by email in March 2006. Firms that sent us their latest financial statements after we contacted them belong to the "Private Disclosure" category. The last row shows the total number of firms disclosing financial statements, which equals the sum of those disclosing publicly on websites and those disclosing privately via mail, minus the number of firms shown in the third row that disclose through both means.

	Disclosure	Audited Disclosure
Public Disclosure (via webpage/Pink Sheets)	44	32
Private Disclosure (via mail)	22	16
Disclosed both publicly and privately	(5)	(4)
Total Disclosures	61	44

Table 12: Long-Term Effect of Deregistration on Liquidity

This table reports the cross-sectional time-series regressions of firms' monthly liquidity on the deregistration dummy, the delisting dummies, and other control variables. The dependent variable is the percentage of days traded (*PCDT* in model 1) or the monthly log share volume (*LVOL* in models 2-6). *Deregistration* equals one for all the months after the month of Form 15 filing, and zero otherwise. *Delist to OTCBB* equals one for all the months after the month of delisting to OTCBB, and zero otherwise. *Delist to PS* equals one for all the months after the month of delisting to Pink Sheets (PS), and zero otherwise. *Bank* equals one if the firm's SIC code is between 6000 and 6100, and zero otherwise. *Disclose* equals one if the firm publicly disclosed its annual financial statements after deregistration, and zero otherwise. *Log(MV)* is the logarithm of market value three months before deregistration. Model 3 includes only firms that are always listed on the Pink Sheets (i.e., no delisting). Model 4 includes only firms that either always traded on the Pink Sheets or delisted into Pink Sheets more than 12 months before deregistration. The t-statistics are computed based on the Newey-West standard errors controlling for one-period autocorrelation in liquidity measures. **, *, † indicate significance at the 1, 5, and 10% levels, respectively.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Dependent Variable	PCDT	LVOL	LVOL	LVOL	LVOL	LVOL
Sample	Full	Full	Firms Always Traded on PS	Firms On PS for More than 1-Yr	Full	Full
Deregistration	-0.07 (-6.53)**	-0.06 (-5.72)**	-0.05 (-3.86)**	-0.05 (-4.04)**	-0.07 (-6.28)**	-0.07 (-6.18)**
Delist to OTCBB	-0.14 (-15.33)**	-0.03 (-3.53)**			-0.03 (-3.11)**	-0.03 (-3.70)**
Delist to PS	-0.16 (-13.81)**	-0.06 (-4.91)**			-0.04 (-3.67)**	-0.06 (-5.33)**
Deregistration*Bank					0.08 (8.19)**	
Deregistration*Disclose						0.09 (5.33)**
Bank					-0.19 (18.83)**	
Disclose						-0.12 (-10.05)**
Log(MV)	0.01 (3.32)**	-0.003 (-1.74))†	0.01 (2.00)*	0.01 (2.41)*	0.01 (2.27)*	-0.002 (-0.96)
Constant	0.73 (15.61)**	0.35 (8.22)**	0.20 (4.54)**	0.29 (6.59)**	0.29 (6.75)**	0.34 (7.97)**
Year Dummy	Included	Included	Included	Included	Included	Included
# of Obs.	9890	9830	1357	2275	9830	9830
F-stat.	91.59	17.75	8.52	8.37	57.13	18.38

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