Commitment to Disclosure and Firm Liquidity
---- Evidence from Smaller Reporting Companies

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ABSTRACT

In this paper, we examine the relation between commitment to disclosure and market liquidity by exploring a recent regulatory change that allows smaller reporting companies to reduce the disclosure level of certain information in their SEC filings. This regime change provides us with a chance to separately identify the impact of commitment to disclosure on market liquidity and the impact of decreased information on market liquidity. We find that smaller firms that have entrenched managers and have less information demand are more likely to reduce their disclosure level. We further find that firms that scale their disclosure experience decreased market liquidity compared to firms that do not scale disclosure. In addition, we also find decreased liquidity for firms that are eligible to scale their disclosure but choose to maintain their disclosure level. Finally, we find this commitment effect is particularly important for firms that have higher agency costs. These findings suggest that a loss of commitment is costly in the absence of loss of information and that mandatory disclosure improves firms' market liquidity by providing a credible commitment mechanism.

1.   Introduction

Economic theory predicts that a *commitment* to increased disclosure reduces information asymmetry and thereby lowers the information asymmetry component of a firm's cost of capital (Diamond and Verrecchia 1991; Verrecchia 2001). In addition, Rock (2002) and Stulz (2009) argue that mandatory disclosure provides managers with an opportunity to credibly commit to disclose on an ex-ante basis and therefore improves contracting efficiency by reducing agency costs. While the theory is compelling, few studies have directly investigated the connection between a *commitment* to disclosure and market liquidity. Most studies on the disclosure literature instead focus on the cross-sectional relation between the cost of capital and level of *voluntary disclosure*. These studies find mixed results on whether increased disclosure results in lower cost of capital.

The distinction between a commitment to disclosure and voluntary disclosure is important. When a firm makes a commitment, they promise to disclose regardless of the content of the information. On the other hand, voluntary disclosure allows the firm to observe the content before making the decision to disclose. Since firms' incentive to disclose may change after observing the information because of conflicting interests either between managers and shareholders or between current shareholders and future shareholders, voluntary disclosure is less effective in addressing moral hazard and adverse selection issues. Stulz (2009) shows that a firm's commitment to increased disclosure through complying with the SEC mandate reduces managers' self-serving reporting opportunities and therefore mitigates moral hazard problems. Verrecchia (2001) shows that lack of commitment to disclosure policy increases the information asymmetry component of

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cost of capital when some investors face liquidity constraints and have to sell shares on the secondary market.

Different from most studies that examine cost of capital and firms' voluntary disclosure behavior, Leuz and Verrecchia (2000) use German firms that have switched from the German GAAP to an international reporting regime (IAS or U.S. GAAP) as a proxy for a commitment to increased disclosure, and find that these firms experience higher market liquidity after the reporting regime shifted. Bushee and Leuz (2005) also find improved liquidity for OTC Bulletin Board firms that comply with the "Eligibility Rule" and start to file with the SEC. Findings in these two studies are potentially consistent with the argument that a commitment to disclosure reduces information asymmetry and therefore increases liquidity. However, since firms usually provide more information after complying with more stringent disclosure requirement, it is not clear to what extent the increase in liquidity is due to the commitment to increased information *per se* versus increased information.

Our study aims to provide more empirical evidence on how a commitment to disclosure affects market liquidity and whether mandatory disclosure provides a credible commitment mechanism by exploiting a recent regulation change in the U.S. for smaller reporting companies. On December 19, 2007, the SEC passed the final rule #33-8876: "Smaller Reporting Company Regulatory Relief and Simplification" (hereafter, the "SRC rule"), which allows smaller reporting companies with public float less than $75 million to choose to reduce disclosure on certain information in periodic SEC filings from February 4, 2008.[1] We argue that while these small reporting companies can still maintain their disclosure level, they lose the ability to commit to the original disclosure level. We explore

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[1] We refer "smaller reporting companies" as defined in the SEC final rule #33-8876 (See section two for details) throughout the paper. We use the term "smaller public companies" in a more general sense.

this mandatory-to-voluntary shift of disclosure requirement to examine the impact of the loss of commitment on firms' information asymmetry component of cost of capital. Since information asymmetry often manifests in reduced liquidity, we use liquidity to proxy for the information asymmetry component of cost of capital. This regulation change allows us to distinguish the impact of reduced information on liquidity (information effect) from the impact of reduced commitment on liquidity (commitment effect). By comparing long-term liquidity for firms that are subject to this new rule and choose to maintain the disclosure level with firms that are not, we identify the commitment effect; by comparing long-term liquidity for eligible small firms that scale their disclosure with those that do not scale, we identify the information effect.

Our empirical setting differs from prior studies for the following reasons. First, it allows us to separate the commitment effect and information effect. Leuz and Verrecchia (2000) suggest this separation helps us understand the nature of the relation between disclosure and the cost of capital. They further argue that the commitment effect should have a stronger impact on the cost of capital relative to voluntary disclosure because voluntary disclosure can be self-serving. Second, we examine an exogenous shock on firms' ability to commit through mandatory disclosure. While firms can voluntarily commit to higher level of disclosure by cross-listing in countries with higher disclosure requirement or by establishing a long history of providing management forecasts, the voluntary decision of (not) committing to a higher level of disclosure is endogenous and contains information about firm fundamentals (Miller 2002; Houston, Lev, and Tucker 2009; Chen, Matsumoto, and Rajgopal 2007). Because the regulation change in our study is an exogenous event, we avoid the self-selection and omitted variables issues when investigating how a commitment

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to disclosure *per se* through mandatory disclosure affects market liquidity. Finally, because the SRC rule only materially affects firms with public common equity floats between $25 million and $75 million,[2] we have an opportunity to construct a large[3] and a small control samples and adopt a "difference-in-difference" design, which mitigates the endogeneity concern due to lack of control groups (see Leuz & Wysocki, 2008) when examining the impact of disclosure regulation.

To explore the impact of a commitment to disclosure on firm liquidity, we collect the SEC filings of smaller reporting companies from February 2008 to September 2008 and manually identify companies that choose to maintain their disclosure level and companies that choose to reduce their disclosure level. We then examine the changes in two liquidity measures (i.e., bid-ask spread and an illiquidity measure used in Amihud,2002) for smaller reporting companies from the 6-month period before the press release on the establishment of Advisory Committee on Smaller Public Companies (ACSPC) (December 16, 2004) to the 6-month period after the smaller reporting companies first filed their 10K in 2008.

We find that 51.7% of smaller reporting companies in our sample reduce their disclosure level in response to the rule. Consistent with the standard setter's argument that the SRC rule alleviates small firms' compliance costs, we find smaller firms and firms with lower information demand (i.e., lower growth opportunities) are more likely to adopt scaled disclosure. We also find that firms in the industries prone to lawsuit are more likely to scale their disclosure on risk factors. Further, we find that firms whose CEO also serves as the chairman of the board are more likely to scale, consistent with the notion that entrenched managers are less willing to disclose information to outsiders. Finally, we find that firms are

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[2] See section two for details.
[3] Following Gao, Wu, and Zimmerman (2008), we only keep firms with public float greater than $75 million but less than $200 million to minimize the impact of size difference.

more likely to include Compensation Discussion and Analysis in their proxy statement when blockholders' interest is more aligned with other shareholders.

Our analysis of the changes in long-term market liquidity after the passage of the final rule for smaller reporting companies indicates that firms with scaled disclosure experience a significant reduction in market liquidity relative to firms that keep their disclosure level, suggesting a loss of information is important. We also find that, relative to both large and small control groups, market liquidity of smaller reporting companies that maintain their disclosure level also decreases significantly, suggesting a loss of commitment is costly without losing information. Finally, we find that the commitment effect is more pronounced for firms with higher agency costs, consistent with Rock (2002) and Stulz's (2009) argument that mandatory disclosure provides managers with an opportunity to credibly commit to disclose at low cost to mitigate moral hazard problems. Taken together, our findings suggest that both the commitment to disclosure and the quantity of information reduce information asymmetry.

This research contributes to the disclosure literature by providing a direct link between a commitment to disclosure and the reduction in information asymmetry and by separating the commitment and information effects. Our study also provides direct evidence that mandatory disclosure provides firms with a credible commitment mechanism, which improves market liquidity, especially for firms with high agency costs. Finally, although the SEC has recognized the cost of security regulations on small companies and has exempted small companies from certain filing requirements since the 1930s, the debate of whether "one size fits all" is far from over. Our finding of decreased liquidity for smaller reporting

companies sheds light on the cost side of the benefit-cost analysis of disclosure deregulation on smaller public companies.

The rest of the paper is organized as follows. Section 2 provides background information for our study. We motivate our hypotheses in section 3. We describe our sample and research design in Section 4. We discuss our empirical results in Section 5 and conclude in Section 6.

2. Institutional Background and Literature Review

2.1 Disclosure Regulations for Small Public Companies

Before the introduction of "Smaller Reporting Company Regulatory Relief and Simplification" in 2007, the SEC first adopted an integrated scaled disclosure system for small business in July 1992 (Regulation S-B). According to Regulation S-B, firms with both revenue and public float less than $25 million were allowed to use Form SB-2 for registration of their securities under the Securities Act of 1933 and Form 10-SB for registration of their securities under the Exchange Act of 1934. In addition, these firms may use Forms 10-KSB and 10-QSB for their annual and quarterly reports. The SEC describes that the purpose of Regulation S-B was "designed to reduce compliance costs and improve the ability of start-ups and other small businesses to obtain through the public capital markets." Regulation S-B can be considered as one of the first deregulations to change the "one-size-fits-all" policies in the Securities Act and Exchange Act.[4]

However, issuance of regulation S-B did not completely address the "one-size-fits-all" issue. How to alleviate smaller public companies' financial reporting and disclosure burden has always been controversial especially after the passage of the Sarbanes-Oxley Act

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[4] The SEC adopted Regulation S-B and its associated Forms SB-1 and SB-2 based on the success of Form S-18, which was a simplified registration form for smaller companies under the Securities Act that preceded Forms SB-1 and SB-2.

(SOX) in July 2002. The Sarbanes-Oxley Act imposes additional disclosure requirements and corporate governance mandates and is considered an unprecedented practice in the history of federal securities legislation (Romano, 2004). While SOX proponents argued that increased disclosure requirements and stiffer penalties for malfeasance result in greater transparency, critics argue that the costs of complying with SOX (especially section 404) can be overwhelmingly large especially for smaller firms, (Engel, Hayes and Wang, 2007). In response to the criticism, SEC keeps putting off the compliance dates.[5]

In addition to extending compliance dates of Section 404 for smaller companies, the SEC chartered the Advisory Committee on Small Public Companies (ACSPC) on March 23, 2005 to assess the regulatory financial reporting system for small public firms in general and to make recommendations for changes to the system. The establishment of the advisory committee was first disclosed by the press on December 16, 2004. Based on the ACSPC's recommendations, the SEC issued the final rule #33-8876: "Smaller Reporting Company Regulatory Relief and Simplification" (hereafter, the "SRC rule") on December 19, 2007. The SRC rule allows smaller companies with public float less than $75 million to adopt scaled disclosure practice in certain SEC filings after February 4, 2008. The SRC rule eliminates all SB forms and consolidates the Regulation S-B disclosure item regulation requirements into Regulation S-K. The new rules are intended to expand the number of

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[5] Reporting companies initially were to be required to comply with the internal control reporting provision ending on after June 15, 2004 for accelerated filers (public float greater than $75 million) and April 15, 2005 for non-accelerated filers. On February 24, 2004, the SEC extended these compliance dates to November 15, 2004 and July 15, 2005, respectively. In March 2005, the SEC extended the dates when non-accelerated filers had to begin to comply with section 404 requirements to fiscal year ending on or after July 15, 2006. Six months later, the SEC again extended compliance dates, this time to fiscal year ending on or after July 15, 2007. In August 2006, the SEC proposed to again extend compliance deadlines for non-accelerated filers to fiscal year ending on or after December 15, 2008. Another extension was granted by the SEC for the outside auditor assessment until years ending after December 15, 2009.

smaller companies eligible to use scaled disclosure requirement and to reduce the information production costs and other indirect costs for these firms.[6]

The SRC rule requires eligible firms to identify themselves as "smaller reporting companies" in the SEC filings and permits smaller reporting companies to elect to comply with scaled disclosure on an item-by-item or "a la carte" basis each quarter.[7] Therefore, with scaled disclosure requirement, smaller reporting companies can choose whether to disclose, as well as how much to disclose, various items in SEC filings. These items include (but not restricted to) disclosure regarding the company's policies and procedures for approving related person transactions, compensation discussion and analysis and other compensation committee reports, qualitative and quantitative disclosure about market risk, and other risk factors. Please see Appendix I for summary of the SRC rule. This voluntary reporting regime raises concerns that managers may choose to "cherry pick" and only report favorable information.

In summary, the SRC rule allows, but not requires, firms with public float less than $75 million to reduce disclosure on some items in SEC filings. This new rule does not affect firms with public float greater than $75 million, nor does it change the reporting burden of formerly SB filers. As a result, we have two control groups in investigating the effect of reduced (commitment to) disclosure on the information asymmetry component of cost of capital.

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[6] As of January 2008, the SEC estimated that the amendments might result in additional 1,581 companies that will be eligible to use scaled disclosure requirements, representing 13% of the universe that files with the SEC. The SEC estimates that 50% of these firms (or 790 firms) will use the scaled disclosure requirements. The SEC also estimates that the information production costs alone that can be saved by this new rule is around $47 million by the 790 firms.

[7] Compared with the ACSPC's recommendations, the scope of the SRC rule is limited. For example, different from ACSPC's recommendation of providing "scaled disclosure" for "smallcap companies" (public float between $128.2 million and $727.1 million), the SEC did not include "smallcap companies" in the final rule. In addition, the SRC rule does not include the recommendation that provides exemptive relief from the adoption of SOX Section 404 for "microcap companies" and certain "smallcap companies".

2.2   Related Literature

2.2.1   Relation between a Commitment to Disclosure and Information Asymmetry Component of Cost of Capital

Diamond and Verrecchia (1991) argue that increased disclosure reduces information asymmetry among informed and uninformed investors. As a result, investors will be relatively more confident that stock transactions occur at a fair price for firms with a higher disclosure level, thereby increasing market liquidity. Because firms' reporting incentive might change after receiving the information, various analytical models further show that precommitting to certain disclosure policy reduces information asymmetry among traders. For example, Diamond (1985) presents a model where a commitment to disclosure reduces costly private information acquisition, suggesting lower information asymmetry among traders. Verrecchia (2001) also argues that precommitting to a disclosure policy lowers the information asymmetry component of the cost of capital when some traders face liquidity constraints.

Most of prior empirical studies however focus on the relation between voluntary disclosure and market liquidity (or cost of capital). For example, Botosan (1997) finds that for firms with low analyst following, cost of equity capital decreases with her disclosure index. In addition, Botosan and Plumlee (2000) find a negative relation between cost of capital and analyst rankings of annual report disclosures. However, they also find a positive correlation between a firm's rankings of quarterly disclosure and its cost of capital. Leuz and Verrecchia (2000) argue that the mixed results on the relation between cost of capital and voluntary disclosure may be because the disclosure environment is already rich in the U.S. and increased disclosure may be primarily incremental. In addition, they argue that a

commitment to increased disclosure should have a stronger effect on the cost of capital because when firms make an irreversible commitment to increased disclosure or a commitment that is costly to reverse, they are required to disclose regardless of the content of the information. Leuz and Verrecchia (2000) find that German firms that have switched from the German to an international reporting regime (IAS or U.S. GAAP) are associated with higher market liquidity compared to firms that are in the German reporting regime. They further find that market liquidity is not associated with annual report disclosure ratings, suggesting that the commitment to increased disclosure, rather than the quantity of disclosure, drives their results. However, Joos (2000), in his discussion of Leuz and Verrecchia (2000), argues that their proxy of commitment to increased disclosure is subject to self-selection and omitted variables problems that obscure their inferences. In addition, he argues that their failure to find the association between disclosure ratings and market liquidity can be due to insufficient variation in the disclosure index or due to measurement error of the proxy.

Firms can also commit to provide information by establishing a history of management forecast. Chen, et al. (2007) find significant negative market reactions for firms that publicly announce to stop issuing earnings guidance, indicating a commitment to non-disclosure or breaking a commitment to disclosure is costly. However, both Chen et al. (2007) and Houston, Lev, and Tucker (2009) find that firms who stop issuing earnings forecast have poor performance and face higher uncertainty. Chen et al. (2007) also document that the market seems to rationally revise its expectation of future earnings of firms that stop earnings guidance and that the negative market reaction to the announcement is attributable to the underlying determinants of the decision to announce and not the

announcement *per se*. Overall, the empirical evidence on how a commitment to disclosure affects market valuation is limited and mixed.

2.2.2 *Mandatory Disclosure as a Commitment Mechanism*

In addition to addressing the adverse selection issue, disclosure assists shareholders to monitor management and therefore alleviates agency problems. Prior literature documents that managers may choose to disclose strategically to pursue private benefits at the expense of shareholders if their interests are not aligned. Rock (2002) and Stulz (2009) suggest that a mechanism that allows the managers to credibly commit to disclose ex-ante improves contracting efficiency because pre-committed disclosure can discipline managers' behaviors. Mahoney (1995) and Rock (2002) argue that mandatory disclosure through SEC filings provides a commitment mechanism at a lower cost relative to private contracting by standardizing the contracts and establishing a credible enforcement mechanism.

Given the importance of disclosure regulation on providing firms with a low-cost commitment mechanism, it is surprising how limited the empirical evidence is. Healy and Palepu (2001) assert that the empirical research on the economic consequences of regulatory events is rare, and most of these studies focus on early U.S. disclosure regulation in the 1930s. For example, neither Stigler (1964) nor Jarrell (1981) finds that registered securities after the Securities Act of 1933 have larger returns to new issues than unregistered securities before the Act, although both of them find that the variance of abnormal returns decreases. In Leuz and Wysocki's (2008) survey, they point out that critics of these studies argue that the result of decreased variance of returns may be driven by a selection bias and that the lack of a control group is another issue in these studies. Using private placement as a control

group, Mohoney and Mei (2006) find no evidence that Security Act of 1933 and Exchange Act of 1934 reduce information asymmetry.

Studies that analyze the 1964 Securities Act Amendments or the 1999 Eligibility Rule for the OTC Bulletin Board, on the other hand, have a control group as these regulations only affect firms traded on the OTC. Ferrell (2003) finds that imposing the SEC disclosure regulation to OTC securities results in a reduction in volatility among these securities. However, Bushee and Leuz (2005) show that imposing the SEC disclosure regulation on previously unregulated OTCBB securities forces 76% of these securities into the less regulated Pink Sheets market. In addition, they find that even firms that were compelled to adopt SEC disclosures show negative returns but have increased market liquidity.

Because most previous studies focus on voluntary-to-mandatory disclosure shifts,[8] the increased market liquidity after the compliance can be driven by either the increased commitment *per se* or the increased quantity of disclosure. Our setting, in contrast, represents a mandatory-to-voluntary disclosure shift. By comparing the changes in liquidity (before vs. after the rule is passed) for firms affected by the SRC rule but choose to keep their disclosure level with firms unaffected by the rule, we can test for the commitment effect. On the other hand, by comparing liquidity for eligible firms that choose to keep the disclosure level to eligible firms that reduce the disclosure, we can isolate the information effect.[9] This mandatory-to-voluntary disclosure shift also avoids the data availability issue

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[8] An exception is Fernandes, Lel, and Miller (2009), which examine how cross-listed firms respond to the SEC rule that made it easier for foreign firms to deregister with the SEC. They find negative stock market returns especially for foreign firms coming from countries with weak investor protection, suggesting registering with SEC improves shareholder protection.

[9] Bushee and Leuz (2005) find increased liquidity (after the eligibility rule) for OTCBB firms that are already in compliance with SEC mandate. This group of firms includes both firms that voluntarily adopt SEC filings and firms that are mandated by SEC. They find both voluntary and mandatory filer exhibit similar

in the non-compliance period when examining incentives for disclosure. For example, when discussing the characteristics of firms traded on OTC Bulletin Board that choose to either comply with the "Eligibility Rule" or to "go dark", Bushee and Leuz (2005) note that their "results have to be interpreted cautiously as data availability prior to the eligibility rule is limited." In their study, firms do not have to file with the SEC prior to the "Eligibility Rule". Thus, their analysis is based on firms that voluntarily provide relevant information.

2.2.3 Information Content of SEC filings

Since the impact of (a commitment to) disclosure on liquidity depends on the materiality of the (potentially) scaled information, it is important to establish that periodic SEC filings contain useful information to investors. Li and Ramesh (2009) provide large sample evidence that market reacts significantly to 10-K filings in recent time when filings do not coincide with earnings management. Li (2008) documents that annual reports of firms with lower earnings are hard to read, indicating managers believe investors use information provided in annual reports and therefore opportunistically choose their readability.

In additional to the information content of the overall 10-K and 10-Q reports, previous research provides evidence about the information content in the MD&A and Risk Disclosure of the periodic SEC filing. Brown and Tucker (2010) find that firms modify MD&A disclosure following significant earnings changes and the magnitude of stock price response to 10-K filings is positively associated with the MD&A modifications, suggesting investors use information provided in MD&A. Li (2008) finds that the average tone of the forward-looking statement in a firm's MD&A is positively associated with future earnings

improvement in liquidities and interpret the results as consistent with the positive externalities provided by the eligibility rule. They do not explicitly examine why some OTCBB firms voluntarily file with SEC and to what extent the voluntary to mandatory change represent increased commitment to disclosure.

and liquidity. Nelson and Pritchard (2007) also provide evidence that firms adjust their risk disclosure to reduce the expected costs of litigation.

3.   Hypothesis Development

We first investigate the determinants of firms' decisions to scale disclosure. We expect that smaller firms are more likely to scale disclosure based on the argument that information production costs are a disproportionate burden to smaller firms. We also expect that firms with higher demand for transparent information arising from external financing and from financial intermediaries are less likely to scale. In particular, we expect firms with a large number of analysts following and higher growth potential, and firms relying more on equity financing (vs. debt financing) to be less likely to adopt scaled disclosure.

In addition, we argue that if management has more incentives to avoid scrutiny by outside shareholders (i.e., managers with more private benefits), the firm is more likely to scale (Bushee and Leuz 2005; Leuz, Triantis, and Wang 2008). Specifically, managers may choose to disclose less information to achieve higher private benefits since less disclosure results in greater valuation uncertainty and less monitoring from shareholders. Based on these arguments, our first hypothesis is as follows.

H1: Firms with a smaller size and less demand for transparent public information, and firms whose managers have more private benefits are more likely to adopt scaled disclosure.

Based on prior literatures on disclosure regulation and voluntary disclosure, both the commitment to increased disclosure and the increased amount of disclosure may reduce information asymmetry between informed and uninformed investors, and thereby decrease the information asymmetry component of cost of capital, i.e., market liquidity (Diamond and Verrecchia 1991; Leuz and Verrecchia 2000). We argue that by giving small reporting

companies an option to scale certain disclosure, they lose the ability to commit to a high level of disclosure even though they may choose to maintain their disclosure level as prior to the SRC rule. Therefore, we expect the market liquidity to decrease (after the passage of the SRC rule vs. before the press discloses the chartering of the Advisory Committee) for smaller reporting companies that choose to keep their disclosure level. On the other hand, if the information effect also matters, we expect that firms that choose scaled disclosure experience an incremental decrease in liquidity. Based on these arguments, our next two hypotheses are as follows.

> *H2: The market liquidity for smaller reporting companies that choose to maintain their disclosure level decreases after the passage of the SRC rule.*

> *H3: Relative to smaller reporting companies that maintain their disclosure level, firms that reduce their disclosure face a larger decline in market liquidity.*

Although firms have incentives to voluntarily provide information, managers also have incentives to disclose strategically to achieve personal benefits. Rock (2002) and Stulz (2009) argue that, in order to mitigate this agency cost, firms can rely on mandatory disclosure regulation as a low-cost commitment mechanism. Based on this argument, we argue that the commitment effect should be particularly more important for firms facing higher agency problems. Our final hypothesis is therefore as follows.

> *H4: The decline in market liquidity for smaller reporting companies that choose to maintain their disclosure level is more pronounced for firms with higher agency costs.*

4.   Sample Selection and Research Design

4.1   Determinants for Adoption of Scaled Disclosure

Our first empirical analysis focuses on the determinants of the scaling decision. We first identify 1,381 firms that filed their 10Ks to SEC as "smaller reporting companies" from

February 2008 to September 2008. We then examine the 10K items and proxy statements for these smaller reporting companies and identify whether firms chose to scale or not.[10] For 10K items that smaller reporting companies are allowed to eliminate the disclosure, we examine whether a smaller reporting company chose to stop disclosing these items. For Item 1 (Description of Business including related risk factors) and Item 7 (Management's Discussion and Analysis), the SEC permits reduced disclosure instead of elimination of disclosure. To quantify the reduction in the amount of disclosure in Item 1 and Item 7, we count the number of words of each item in the company's 10K filing in 2008. We consider a smaller reporting company to have adopted scaled disclosure for Item 1 or Item 7 if the number of words for that item is reduced by more than two standard deviations in 2008 relative to the average of the past three years. This procedure requires our sample firms to have filed 10Ks for the past three years, which reduces our sample size to 779 (see Table 1 for sample selection procedures).

After examining smaller reporting companies' disclosure behavior for each scalable 10K items, we classify a smaller reporting company as having adopted scaled disclosure (scaler) if the company chooses to scale one or more items; non-scaled disclosure (non-scaler) otherwise. We also require the smaller reporting company to be covered by COMPUSTAT and CRSP, which further reduced our sample to 445 firms, including 230 scalers (51.7 %) and 215 (48.3%) non-scalers.

Among the items that can be scaled, the disclosure of business and market risk factors (10K item 1B and 7A) and the "Compensation Discussion and Analysis" (CD&A) in the proxy statement arguably contain the richest and the most important information. Therefore, we separately examine the determinants of the scaling decision of these two

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[10] See Appendix I for 10K items that eligible for scaled disclosure.

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items. We find that, out of 215 scalers, 174 chose to eliminate the disclosure on business and market risk factors, and 148 choose to stop providing CD&A in their proxy statements.

We use the following PROBIT model to investigate the determinants of scaling decisions. We measure all accounting variables at the fiscal year end before the firms first filed as smaller reporting companies.

$$DISC_i = \beta_0 Intercept + \beta_1 SIZE_i + \beta_2 LEV_i + \beta_3 R\&D_i + \beta_4 ROA_i + \beta_5 BM_i + \beta_6 CASHVOL_i$$
$$+ \beta_7 ANA_i + \beta_8 IND\_LITI_i + \beta_9 DERIVATIVE_i + \beta_{10} CEO\_CHAIR_i + \beta_{11} BOARD\_IND_i$$
$$+ \beta_{12} INSIDEROWN_i + \beta_{13} BH\_ALIGN_i + \beta_{14} BOARD\_SIZE_i + \varepsilon_i \qquad (1)$$

where

DISC refers to one of the following three variables: *DISC_ALL, DISC_RISK, or DISC_COMP*. *DISC_ALL* is an indicator variable that equals 1 for smaller reporting companies that choose to scale at least one item in their 10K filings and 0 for smaller reporting companies that choose to maintain their disclosure level. *DISC_RISK* is an indicator variable that equals 1 for smaller reporting companies that choose to scale disclosure on business risk or market risk in their 10K filings, and 0 for smaller reporting companies that choose to maintain their risk disclosure. *DISC_COMP* is an indicator variable that equals 1 for smaller reporting companies that choose not to provide Compensation Discussion and Analysis in their proxy statement, and 0 for smaller reporting companies that maintain their CD&A disclosure.

SIZE: Log (total assets).

LEV: Total liabilities divided by total assets.

R&D: Research and Development expense divided by total assets.

ROA: Income before extraordinary items divided by total assets.

BM: Book value of common equity divided by market value of equity.

CASHVOL: Cash flow volatility measured as standard deviation of quarterly operating cash flows scaled by the average absolute quarterly operating cash flows, calculated over the past three years.

ANA: Natural log of 1+ number of analysts following.

DERIVATIVE: Indicator variable that equals 1 if the smaller reporting company has derivative positions and 0 otherwise.

IND_LITI: Indicator variable that equals 1 for firms with 2-digit SIC code as 28 (chemicals and allied products), 35 (industrial and commercial machinery and computer equipment), 36 (electronic and other electrical equipment and components, except computer equipment), 38 (measuring, analyzing, and controlling instruments), 60 (depository institutions), 67 (holding and other investment offices) or 73 (business services), and 0 otherwise.

CEO_CHAIR: Indicator variable equal to 1 if the CEO of the firm also serves as the chairman of the board, and 0 otherwise.

BOARD_IND: Ratio of independent board of directors over the total number of board of directors.

INSIDEOWN: Percentage of shares held by insiders.

BH_ALIGN: Indicator variable that equals 1 if the outside blockholders (>5%) hold less than 35% (the upper quartile) of the shares outstanding, and 0 otherwise.

BOARD_SIZE: natural log of 1+ number of board of directors.

Based on **H1**, we expect smaller firms are more likely to scale to save compliance costs. We also expect firms with higher growth (proxied by higher R&D and lower book-to-market ratio), with more analysts following to be less likely to adopt scaled disclosure because of higher information demand. Further, we expect firms with a higher leverage ratio to be more likely to scale the disclosure level if lenders can substitute private information for public disclosure (Beatty, Liao and Weber, 2009).

If managers reduce disclosure to acquire private benefits, we expect that the likelihood of scaling disclosure level is positively associated with whether a smaller reporting company's CEO also serves as the chairman of the board and the percentage of shares owned by insiders but negatively correlated with the percentage of independent board of directors, and the board size. We also argue that outside blockholders' (5% holding or more) may use SEC filings to monitor managers. If the outside blockholders' interest is aligned with small shareholders' interests, then the existence of the blockholders may reduce management's ability to accrue private benefits and reduce the likelihood of scaled disclosure. However, when blockholders' holding is too large, the conflict of interest between large shareholders and small shareholders leads to less incentive for blockholders to monitor on behalf of smaller shareholders. Therefore, we construct the variable *BH_ALIGN* as an indicator variable for whether the blockholders' interest is aligned with smaller investors. *BH_ALIGN* equals 1 when blockholders' ownership is between 5 to 35%

(i.e., the upper quartile in distribution) and 0 otherwise.[11] We expect *BH_ALIGN* to have a negative correlation with the scaling decision.

In investigating the scaling decision for business risk discussion, we further argue that firms that are in the industry more prone to lawsuit are more likely to scale in order to protect themselves from lawsuits (Rogers and Van Buskirk 2009). Since market risk disclosure (10K item 7a) is more important for firms that have derivative instruments, we expect the indicator variable (DERIVATIVE) is negatively associated with the scaling decision of the risk disclosure.

4.2   Changes in Long-Term Liquidity after The Adoption of the SRC Rule

To test **H2** and **H3**, we use equation (2) to examine the impact of disclosure deregulation on smaller reporting companies' long-term liquidity.

$$ILLIQIDITY_{i,t} = \lambda_0\,Intercept + \lambda_1\,SRC_i + \lambda_2\,DISC\_ALL_i + \lambda_3\,POST_t + \lambda_4\,SRC_i * POST_t$$
$$+ \lambda_5\,DISC\_ALL_i * POST_t + \Lambda Controls_{i,t} + \varepsilon_{i,t} \tag{2}$$

where
ILLIQUIDITY equals one of the following two variables: *ILLIQ or BID_ASK. ILLIQ* is the ratio of the daily absolute return to the (dollar) trading volume, averaged for each month. This ratio gives the absolute (percentage) price change per dollar of daily trading volume, or the daily price impact of the order flow. *BID_ASK* is daily bid-ask spread (ask – bid) scaled by (ask + bid)/2, averaged for each month.
SRC: Indicator variable that equals 1 for smaller reporting companies; 0 for control firms.
DISC_ALL: Indicator variable that equals 1 for smaller reporting companies with scaled disclosure, and 0 for the smaller reporting companies that maintain the disclosure level and for control firms.
POST: Indicator variable equal to 1 for the 6-month period after 10K filing date in 2008, 0 for the 6-month period before Dec. 16, 2004 (establishment of the Advisory Committee of Smaller Public Companies).

We measure liquidity in two ways: *ILLIQ* and bid-ask spreads.[12] Both measures are widely used in the literature. Bid-ask spreads capture the costs of trading a financial

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[11]We use 35% as the primary cut as 35% represents the top quartile in the distribution. While this cutoff point can be arbitrary, our results are robust to the cutoff ranging from 30%-40%.

instrument in the secondary market and *ILLIQ* measures the absolute (percentage) price change per dollar of daily trading volume, or the daily price impact of the order flow. We do not use information asymmetry component of bid-ask spread estimated based on microstructure data because of the data constraints on small firms.

To examine whether the liquidity of smaller reporting companies changes relative to control firms after the adoption of the SRC rule, we compare the above two liquidity measures for the 6-month period before the establishment news of ACSPC is first released (December 16, 2004) with those for the 6-month period after the smaller reporting companies first filed their 10K in 2008. We choose not to examine the period between 2004 and 2008 because the scope of ACSPC's recommendations and the SEC proposal evolves during this period. It is not clear how to differentiate sample firms from control firms for the period.

We identify two groups of control firms that are not affected by the disclosure deregulation. The first control group consists of 443 firms that filed as accelerated filers from February 1, 2008 to September 30, 2008 with market value between $75 million and $200 million at the end of the second fiscal quarter before the SRC rule became effective. In addition to this control group, we construct the second group of control firms consisting smaller business issuers who filed 10KSB from 2005 to 2007. Since the SEC already exempted these smaller business issuers from filing regular 10Ks, the impact of the SRC rule on these small business issuers is negligible.

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[12] Because market makers cannot distinguish between order flow that is generated by informed traders and by noise traders, they set prices that are an increasing function of the imbalance in the order flow which may indicate informed trading. This creates a positive relationship between the order flow or transaction volume and price change, i.e., the price impact. Based on Amihud's (2002) argument that it is doubtful that there is one single measure that captures all the aspects of liquidity,

In addition to using these two control samples, we also add the following control variables when estimating equation (2). *RET_VOLATILITY* is the standard deviation of daily returns measured for each month. We use return volatility to capture the overall uncertainty of the stock price and expect the price uncertainty to be negatively associated with firms' market liquidity. We control for firm size by including the natural log of the market value at the end of the fiscal year for both the pre and post regulation periods. We also control for leverage, which is measured as total liability divided by the market value of total assets at the end of the fiscal year for both the pre and post regulation periods, as Lipson and Mortal (2007) document, firms with higher equity market liquidity assume less debt. Finally, since both *BID_ASK* and *ILLIQ* include share price in the denominators, we include the level of stock prices in the regression to control for the possibility that changes in bid-ask spread and *ILLIQ* are purely driven by the change of the scalers from the pre to the post regulation period.

Based on **H2** that the commitment to high level of disclosure is important in reducing information asymmetry, we expect to find decreased liquidity for smaller reporting companies that keep their disclosure level relative to both large and smaller control groups. Therefore, we expect the coefficient on *SRC*POST* to be positive for both bid-ask spreads and *ILLIQ* measures. In addition to the loss of commitment, **H3** predicts that reduced information also decreases liquidity. We expect the coefficients on *DISC_ALL*POST* to be positive for bid-ask spreads and *ILLIQ*.

To test **H4**, we need to establish a proxy for agency costs. We extract the first principal component of a factor analysis using *CEO_CHAIR, BH_Align, ANA* and *BOARD_IND*. We argue that the agency costs are higher for firms with less independent

board of directions, firms whose CEO is the chair of the board of directors, and firms whose

blockholders are less aligned with outside shareholders. We further argue that information

intermediaries also play a monitoring role, reducing agency costs (Mansi, Maxwell, and

Miller 2010). We use the following model to test whether the commitment effect of the

deregulation is particularly important for firms that have high agency costs. Note that we

remove small reporting firms that scale their disclosure, because we are interested in the

commitment effect in this analysis.

$$ILLIQUIDITY_{i,t} = \lambda_0\,Intercept + \lambda_1\,MAINTAIN_i + \lambda_2\,AGENCY_i + \lambda_3\,POST_t +$$
$$\lambda_4\,MAINTAIN_i{*}POST_t + \lambda_5\,AGENCY_i{*}POST_t + \Lambda Controls_{i,t}\,\varepsilon_{i,t} \quad (3)$$

where

ILLIQUIDITY is either *ILLIQ or BID_ASK,* measured for each month.

MAINTAIN: An indicator variable that equals 1 for smaller reporting companies that maintain the disclosure level;0 for control firms.

AGENCY: An indicator variable that equals 1 for smaller reporting companies that maintain the disclosure level and have above median agency costs; 0 for smaller reporting companies that maintain the disclosure level and have below median agency costs and for control firms. Agency costs are captured by the principal component of the following four factors: *CEO_CHAIR, BH_ALIGN, BOARD_IND,* and *ANA*.

POST: Indicator variable equal to 1 for the 6-month period after 10K filing date in 2008; 0 for the 6-month period before Dec. 16, 2004 (establishment of the Advisory Committee of Smaller Public Companies).

We include the same set of control variables as in equation (2) when estimating

equation (3).[13] Based on **H4**, we expect that coefficient on *MAINTAIN*POST* and

AGENCY*POST to be positive, as the importance of commitment mechanism increases with

agency costs.

5.   Empirical Results

5.1   *Descriptive Statistics and Univariate Analysis*

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[13] We truncated all continuous variables at 1% and 99% level when estimating equation (1) to (3). We also deleted 92 firm-month observations (1.3%) where the average monthly stock price falls below \$1 when estimating equation (2) and (3).

Table 2 shows the industry distribution of our sample of smaller reporting companies. Financial services industry has the highest sample concentration followed by personal and business services industry and other equipment and machinery industry. The proportions of scalers and non-scalers within most of the industries are roughly similar, except for chemicals and pharmaceutical industry. Only 6.63% of scalers belong to chemicals and pharmaceutical industry, compared with 15.21% for non-scalers. The industry distribution of the smaller reporting companies is also similar to the overall COMPUSTAT population as well for the two control samples except that both small and large control firms contain more firms in the financial services industry.

We next compare firm characteristics for scalers and non-scalers in Table 3. Consistent with **H1**, we find that scalers have lower R&D expenditures and have less analysts following, representing lower growth opportunities and less information demand. In addition, 31.91% of the non-scalers have a CEO who is also Chairman of the broad of directors versus 51.62% for scalers. Finally, scalers have the same level of liquidity as the non-scaler in the pre period whereas the scalers exhibit lower liquidity relative to the non-scalers in the post-deregulation period.

Table 4 shows Pearson correlations of main variables used in this study. Different from our expectations, we do not find firm size, measured as log(assets), negatively correlated with liquidity. However, we do find firm size measured as log (market value of equity) is significantly negatively associated with *BID-ASK* (-0.37) and *ILLIQ* (-0.45), suggesting it is important to control for firms market value in equations (2) and (3). We find *BID-ASK* and *ILLIQ* are positively correlated (0.70), suggesting it is appropriate to use these constructs as alternative liquidity measures.

5.2 Determinants for Adoption of Scaled Disclosure

First column of Table 5 shows the determinants of firms' decision to adopt scaled disclosure on the overall level. We find that smaller firms are more likely to adopt scaled disclosure ($p=0.05$), suggesting that reducing information production costs is important to smaller firms. In addition, leverage ratio is positively associated with the likelihood of scaling disclosure level ($p=0.02$), suggesting that firms that rely on debt financing have a lower demand for public disclosure due to lenders' superior access to private information. From the perspective of agency costs of equity, our analysis of corporate governance variables shows that it is more likely for a firm to scale its disclosure level when its CEO also serves as the chairman of the board of directors. This evidence is consistent with the notion that entrenched managers have incentives to reduce disclosure level for self benefits. However, we do not find insider ownership or board structures determine firms' decision of adopting scaled disclosure.

In second and third columns, we report determinants of scaling decision on risk and compensation disclosures, respectively. For risk disclosure, firm size, leverage, R&D, and *CEO_CHAIR* all affect the scaling decision in the same direction as overall disclosure. In addition, we find that firms in the lawsuit-prone industry are more likely to reduce their disclosure on firm risk factors, consistent with Rogers and Van Buskirk (2009)'s finding that firms reduce disclosure to reduce litigation risk. Contrary to our predictions, we find that firms with derivative instruments are more likely to reduce their risk disclosure. We further find that board size is correlated with scaling decisions positively, suggesting that a big board does not necessarily play a better monitoring role in providing more disclosure. For compensation disclosure, we find that the likelihood of scaling increases (decreases)

with *CEO_CHAIR (BH_Align)*, suggesting that the more private benefits of control the more likely the manager scale compensation disclosure.

5.3 Changes in Long-Term Liquidity

Results in Table 6 show that both larger control firms and smaller control firms experience decreased liquidity from the 6-month period before the regulation (July 2004 to December 2004) to the 6-month period after the regulation (6 months after the 10-K filing date in 2008). For example, the average *ILLIQ* measure for smaller control firms increase from 1.3150 to 1.8443 as presented in the last column. We also find that relative to both groups, the coefficients on *SRC*POST* are significantly positive, consistent with the idea that after the adoption of the SRC rule, smaller reporting companies lost their ability to commit to higher level of disclosure, thereby reducing market liquidity. The economic magnitude is also significant. For example, the average *ILLIQ* measure for smaller reporting companies that maintain their disclosure level increase from 0.6239 to 2.101. Consistent with the argument that reduced disclosure decreases market liquidity, we find that average *ILLIQ* measure for smaller reporting companies scaling disclosure experience even a greater reduction in liquidity relative to non-scalers (i.e., significantly positive coefficient on *DISC_ALL*POST*).

Note that the macro economic conditions change dramatically in 2008, relative to 2004, when the overall economy deteriorates to recession. If the transparency of the information environment is especially important during market downturns (Hilary 2009; Hutton, Marcus, and Tehranian 2009), then the shifting market conditions may provide a powerful setting for our empirical tests. However, our results should also be interpreted with caution due to the volatile economic change. The estimated coefficients on control

variables in Table 6 are largely consistent with prior literature. Specifically, we find the illiquidity measure is higher for smaller firms with volatile returns and higher leverage ratio. Table 7 reports the regression results of equation (2) where illiquidity is measured as bid-ask spread. The results are similar to those presented in Table 6.

In Table 8, we further investigate whether agency costs explain the importance of the commitment effect using *ILLIQ*. We extract the principal component of *ANA, BOARD_IND, CEO_CHAIR,* and *BH_ALIGN* and use it as the proxy for agency costs. We find the principal component is positively correlated with *ANA, BOARD_IND*, and *BH_ALIGN* and negatively correlated with *CEO_CHAIR*. More importantly, consistent with **H4**, we find that small reporting companies with higher agency costs exhibit incremental decline in market liquidity measured by *ILLIQ*, relative to small reporting companies with low agency costs. We document similar evidence in Table 9 when we measure illiquidity using bid-ask spreads. These results suggest firms with high agency costs benefit more from the commitment mechanism provided by mandatory disclosure and therefore a loss of commitment affects them more adversely.

5.4   Additional Analyses

We recognize that over 20% of our sample of smaller reporting companies are financial firms. To address the concern that the liquidity change for financial firms might be different for firms from other industries especially in 2008, we conduct our analysis for Tables 6-9 excluding financial firms and find similar results.   Although the deregulation of the mandatory disclosure requirement is an exogenous event, firms decide whether to reduce their disclosure or not. Therefore, selection bias may exist when comparing the liquidity change for firms that choose to scale their disclosure with that for firms that choose to

maintain the disclosure level. To examine the impact of selection bias on our results, we adopt Heckman self-selection correction procedure. Specifically, we use equation (1) as our first-stage model and include the estimated *Lambda* in the second stage regression when comparing whether scalers experience higher liquidity decrease in the post-SRC rule period relative to the non-scalers. In untabulated results, we continue to find smaller reporting companies that scaled their disclosure experience an incremental decline in liquidity relative to non-scalers. Taken together, the results we document in the prior sections are not driven by self-selection.

6. Conclusions

This study exploits an exogenous regulation change that allows small reporting companies to scale their disclosure to examine the relationship between a *commitment* to disclosure and market liquidity. We document that smaller firms that have lower information demand are more likely to choose to scale. We further find that, consistent with economic theory, smaller reporting companies lose the ability to commit to a higher level of disclosure through SEC mandates after the passage of the SRC rule and experience a decline in market liquidity even without reducing the information content of the SEC filings. This phenomenon is interesting and confirms that a commitment to disclosure is important regardless of the information content. Finally, we find that, consistent with Rock (2002) and Stulz (2009), the impact of loss of commitment to disclosure is more important to firms with high agency cost.

The mandatory-to-voluntary shift of disclosure regime examined in this paper allows us to extend the disclosure literature by separately examining the impact of commitment to disclosure on market liquidity and the impact of additional information on market liquidity.

Our findings suggest that mandatory disclosure benefits firms by providing a credible commitment mechanism and therefore reduces information asymmetry and improves market liquidity. While the possibility of scaled disclosure for small firms might save financial reporting cost, losing the ability to commit through mandatory filings can be costly to smaller report companies.

References

Amihud, Y., 2002. "Illiquidity and Stock Returns: Cross-section and Time-series Effect". *Journal of Financial Markets* 5, 21-36.

Beatty, A., S. Liao, and J. Weber, 2009. "Financial Reporting Quality, Private Information, Monitoring and the Lease-versus-Buy Decision." Working paper, Ohio State University, University of Toronto, and MIT.

Botosan, C., 1997. "Disclosure Level and the Cost of Equity Capital." *The Accounting Review* 72, 323-349.

Botosan, C., and M. Plumlee, 2002. "A Re-Examination of Disclosure Level and the Expected Cost of Equity Capital." *Journal of Accounting Research* 40, 21-40.

Brown, S., and J. Tucker, 2010. "Large-sample Evidence on Firms' Year-over-year MD&A Modifications." Working Paper, University of Florida.

Bushee, B., and C. Leuz, 2005. "Economic Consequences of SEC Disclosure Regulation: Evidence from the OTC Bulletin Board." *Journal of Accounting and Economics* 39, 233-264.

Chen, S., D. Matsumoto, and S. Rajgopal, 2007. "Is Silence Golden? An Empirical Analysis of Firms that Stop Giving Quarterly Earnings Guidance." Working Paper, University of Texas, Austin

Diamond, D., 1985. Optimal Release of Information by Firms. *Journal of Finance* 40, 1071-1094.

Diamond, D., and R. Verrecchia, 1991. "Disclosure, Liquidity, and the Cost of Capital." *Journal of Finance* 46, 1325-1359.

Engel, E., R. Hayes, and X. Wang, 2007. "The Sarbanes-Oxley Act and Firms'Going-Private Decisions." *Journal of Accounting & Economics* 44, 116-145.

Ferrell, A., 2003. "Mandated Disclosure and Stock Returns: Evidence from the Over-The-Counter Market." Working Paper, Harvard Law School.

Fernandes, N., U. Lel, and D. Miller, 2009. "Escape From NewYork: The Market Impact of Loosening Disclosure Requirements, *Journal of Financial Economics,* Forthcoming.

Gao, F., J. Wu, and J. Zimmerman, 2009. "Unintended Consequences of Granting Small Firms Exemptions from Securities Regulation: Evidence from the Sarbanes-Oxley Act." *Journal of Accounting Research* 47, 459-506.

Healy, P. M., and K. G. Palepu, 2001. "Information Asymmetry, Corporate Disclosure, and the Capital Markets: A Review of the Empirical Disclosure Literature." *Journal of Accounting & Economics* 31, 405-440.

Hilary, G., 2009. "Accounting Quality and Catastrophic Market Events." Working Paper, HKUST

Hutton, A., A. Marcus, and H. Tehranian, 2009. "Opaque Financial Report, R-Squared, and Crash Risk." *Journal of Financial Economics* 94, 67-86.

Houston, J., B. Lev, and J. Tucker, 2009. "To Guide or Not to Guide? Causes and Consequences of Stopping Quarterly Earnings Guidance." *Contemporary Accounting Research 27*, 143-185.

Iliev, P., 2007. "The Effect of SOX Section 404: Costs, Earnings Quality and Stock Prices." *Journal of Finance*, Forthcoming.

Jarrell, G., 1981. "The Economic Effects of Federal Regulation of the Market for New Security Issues." *Journal of Law and Economics* 24, 613-675.

Leuz, C., A. Triantis and T. Wang, 2008. "Why Do Firms Go Dark? Causes and Economic Consequences of Voluntary SEC Deregistrations." *Journal of Accounting and Economics* 45, 181-208.

Leuz, C., and P. D. Wysocki, 2008. "Economic Consequences of Financial Reporting and Disclosure Regulation: A Review and Suggestions for Future Research." Working Paper, MIT Sloan School of Management.

Leuz, C., and R. Verrecchia, 2000. "The Economic Consequences of Increased Disclosure." *Journal of Accounting Research* 38, 91-124.

Li , E., and K. Ramesh, 2009. "Market Reaction Surrounding the Filing of Periodic SEC Reports." *The Accounting Review 84, 1171-1208.*

Li, F. 2008. "Annual Report Readability, Current Earnings, and Earnings Persistence. *Journal of Accounting and Economics* 45, 221-247.

Lipson and Mortal 2007. "Capital Structure Decisions and Equity Market Liquidity", Working paper, University of Virginia.

Nelson, K. K. and A. C. Pritchard, 2007. "Litigation Risk and Voluntary Disclosure: The Use of Meaningful Cautionary Language." Working paper. Rice University.

Rogers, J., and A. Van Buskirk, 2009. "Shareholder Litigation and Changes in Disclosure Behavior." *Journal of Accounting and Economics* 47, 136-156.

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Mansi, S., S. Maxwell, and D. Miller 2010. "Analyst Forecast Characteristics and the Cost of Debt." forthcoming at Review of Accounting Studies. SMU.

Mahoney, P., 1995. Mandatory Disclosure as a Solution to Agency Problems. *The University of Chicago Law Review* 62, 1047-1112.

Mahoney, P., and J. Mei, 2008. "Mandatory vs. Contractual Disclosure in Securities Markets: Evidence from the 1930s." University of Virginia Law School Working Paper.

Miller, G., 2002. "Earnings Performance and Discretionary Disclosure." *Journal of Accounting Research* 40, 173-205

Rock, E. B., 2002. "Security Regulation as Lobster Trap: A credible Commitment theory of Mandatory Disclosure." *Cardozo Law Review* 23, 675-703.

Romano, R., 2004. "The Sarbanes-Oxley Act and the Making of Quack Corporate Governance." NYU Law and Economics Research Paper.

Stigler, G., 1964. "Public Regulation of the Securities Markets." *The Journal of Business* 37, 117-142.

Stulz, R., 2009. "Securities Laws, Disclosure and National Capital Markets in the Age of Financial Globalization". *Journal of Accounting Research* 47, 349-390.

The ACSPC, 2006. "Final Report of the Advisory Committee on Smaller Public Companies to the United States Securities and Exchange Commission."

A Brief Summary of the SEC Final Rule #33-8876: Smaller Reporting Company Regulatory Relief and Simplification (The SRC Rule)

Effective Date:

i) Effective February 4, 2008

Objectives:

i) Expanding the number of smaller companies eligible to use scaled disclosure requirement.

ii) Reducing unnecessary complexity in regulation by combining the category of "small business issuers" with the category of "non-accelerated filers".

iii) Simplifying disclosure requirements by moving the scaled disclosure requirements for smaller companies form Regulation SB into Regulation SK, the integrated disclosure system for other companies.

Highlight of the SRC Rule:

i) Establish a category of "smaller reporting companies" (replacing the old "smaller business issuer" definition) eligible to use scaled disclosure requirement. Eligibility:

  i. Companies have less than $75 million in public float.

  ii. When public float is unable to calculate, less than $50 million in revenue in the last fiscal year.

ii) Permit smaller reporting companies to elect to comply with scaled financial and non-financial disclosure on an item-by-item basis.

iii) Eliminate current SB forms but allow a phase-out period for smaller business issuers transitioning to smaller reporting companies.

Estimated Impact:

i) In 2006, 3,395 reporting companies elected to take advantage of scaled disclosure and reporting requirements for small business issuers under Regulation SB by filling their annual reports on Form 10-KSB.

ii) 4,976 companies will be eligible to use scaled disclosure requirement under this new amendment, a difference of 1,581 additional companies.

iii) The 1,581 companies would represent about 13% of the total 11,898 reporting companies that filed annual reports in 2006.

Scaled Disclosure in 10K filings Applicable to Smaller Reporting Companies

S-K Item #	Descriptions	Corresponding 10-K Item #	Descriptions of Scaled Disclosure Requirements Applicable to Smaller Reporting Companies
Item 101	Description of business	Item 1	Provide 3 years rather than 5 years of business development activities, and not be required to provide segment disclosure.
Item 201	Market price of and dividends on registrant's common equity and related stockholder matters	Item 5	Not required to provide stock performance graph
Item 301	Selected financial data	Item 6	Not required.
Item 302	Supplementary financial information	Item 8	Not required.
Item 303	Management's discussion and analysis of financial condition and results of operations	Item 7	Require only two years of analysis if the company is presenting only two years of financial statements, instead of three years currently required of larger companies. Not required to provide tabular disclosure of contractual obligations.
Item 305	Quantitative and qualitative disclosures about market risk	Item 7A	Not required.
Item 402	Executive compensation	Item 11	Provide disclosure about the CEO and two other highly compensated executive officers only rather than the information for the CEO, CFO and three other executive officers required of larger companies. Provide only three of the seven tables required of larger companies
Item 404	Transactions with related persons, promoters and certain control persons	Item 13	Not required to provide disclosure regarding the company's policies and procedures for approving related person transactions.
Item 407	Corporate governance	Item 10, 11 and 13	Not required to provide a Compensation Discussion and Analysis required of larger reporting companies. Not required to

			provide information on Compensation Committee Interlocks and Insider Participation and Compensation Committee Report.
Item 503	Risk factors	Item 1A	Not required.

Note: In addition to items described in the table above, New Article 8 of regulation S-X requires SRCs to provide audited balance sheets, audited statements of income, cash flows and changes in stockholders' equity for each of the last two fiscal years instead of an audited balance sheet as of the end of the last two fiscal years and audited statement of income, cash flows and changes in stockholders' equity for each of the last three fiscal years as required by other parts of Regulation S-X.

Source: 1) 17 CFR Parts 210, 228 et al. Smaller Reporting Company Regulatory Relief and Simplification; Final Rule of the SEC. 2) Small Business Compliance Guides by the SEC—"Changeover to the SEC's New Smaller Reporting Company System by Small Business Issuers and Non-Accelerated Filer Companies: A Small Entity Compliance Guide."

Table 1: Sample Selection Procedure

Smaller Reporting Companies	
Firms that filed as "Smaller Reporting Companies" from 02/01/2008 to 09/30/2008	1381
Smaller reporting companies that filed 10-K for at least three previous years	779
Smaller reporting companies with data available from COMPUSTAT and CRSP	445
Smaller reporting companies that maintain disclosure level in the 10-K filings	**215**
Smaller reporting companies that adopted scaled disclosure in the 10-K filings for at least one item	**230**
Smaller reporting companies that choose not to disclose business and market risk factors	**174**
Smaller reporting companies that choose not to provide Compensation Discussion and Analysis	**148**

Control Sample 1 (Large)	
Firms that filed as accelerated filers from 02/01/2008 to 09/30/2008	9170
Covered by COMPUSTAT and CRSP and with most recent 2nd quarter market value less than 200 million	**443**

Control Sample 2 (Small)	
Firms that filed 10KSB or filed as smaller reporting companies in 2008 and filed 10KSB from 2005 to 2007	1085
Covered by COMPUSTAT and CRSP	**113**

Table 2: Industry Distribution for Smaller Reporting Companies, Control firms, and COMPUSTAT Population

Two-digit SIC Code	Scaled Disclosure (%)	Non-scaled Disclosure (%)	Control Firms (Large) (%)	Control Firms (small) (%)	COMPU-STAT Population (%)
10-15 Mining and Construction	1.53	3.26	4.74	5.88	6.58
20-27 Food, Paper, and Finished Goods	4.59	2.72	3.16	3.92	5.52
28-29 Chemicals and Pharmaceuticals	6.63	15.21	11.29	12.74	6.27
30-34 Rubber, Leather, and Metal Works	5.10	2.17	1.58	0.98	3.73
35-36 Machinery and Electronics	12.31	11.41	9.93	11.76	10.17
37-39 Other Equipment and Machinery	9.69	10.32	10.61	8.82	7.14
40-49 Transportation & Utilities	3.57	2.17	5.55	2.94	9.03
50-51 Wholesalers	5.10	5.43	2.26	0.98	3.45
52-59 Retailers	5.61	5.98	2.48	0.98	5.39
60-69 Financial Services	27.55	23.36	33.41	30.39	23.66
70-79 Personal and Business Services	12.75	13.04	9.71	15.68	13.76
80-99 Other Services	2.55	4.90	5.19	4.90	5.28

Note: industry distribution for COMPUSTAT population is based on fiscal year 2006 data.

Table 3: Univariate Analysis of Difference between Firms Scaling Disclosure and Firms Not scaling Disclosure

Variable	Scaled Disclosure	Non-scaled Disclosure	t-test for Difference in Means (p-value)
SIZE	4.1764	4.2304	*(0.6549)*
LEV	0.6402	0.5829	*(0.2044)*
R&D	**0.0658**	**0.1027**	*(0.0312)* **
ROA	-0.1486	-0.1822	*(0.3920)*
BM	0.4193	0.4605	*(0.8899)*
CASHVOL	4.1785	1.9793	*(0.3717)*
ANA	**0.3205**	**0.4517**	*(0.0126)* **
DERIVATIVE	**0.2477**	**0.1699**	*(0.0414)* **
IND_LITI	0.4960	0.5174	*(0.6404)*
CEO_CHAIR	**0.5162**	**0.3991**	*(0.0104)* **
BOARD_IND	0.7059	0.7095	*(0.7640)*
INSIDEOWN	0.2677	0.2694	*(0.9300)*
BH_ALIGN	0.5320	0.5739	*(0.3571)*
BOARD_SIZE	1.9420	1.9216	*(0.4109)*
BIDASK_PRE	0.0190	0.0197	*(0.5994)*
BIDASK_POST	0.0400	0.0375	*(0.2569)*
ILLIQ _PRE	1.3122	1.5962	*(0.1786)*
ILLIQ_POST	**5.0477**	**4.2471**	*(0.0640)* *

Note: ***, **, and * represent 1%, 5% and 10% significance, respectively. All accounting and corporate governance variables are measured at the fiscal year end before firms first file as smaller reporting companies.

Variable Definition:
SIZE: Log (total assets).
LEV: Total liabilities divided by total assets.
R&D: Research and Development expense divided by total assets.
ROA: Income before extraordinary items divided by total assets.
BM: Book value of common equity divided by market value of equity.
CASHVOL: cash flow volatility measured as standard deviation of quarterly operating cash flows scaled by average absolute quarterly operating cash flows, calculated over the past three years.
ANA: natural log of 1+Number of analysts following.

DERIVATIVE: Indicator variable that equals 1 if the smaller reporting company has derivative positions and 0 otherwise.

IND_LITI: Indicator variable that equals 1 for firms with 2-digit SIC code as 28 (chemicals and allied products), 35 (industrial and commercial machinery and computer equipment), 36 (electronic and other electrical equipment and components, except computer equipment), 38 (measuring, analyzing, and controlling instruments), 60 (depository institutions), 67 (holding and other investment offices) or 73 (business services), and 0 otherwise.

CEO_CHAIR: Indicator variable that equals 1 if the CEO of the firm also serves as the chairman of the board, and 0 otherwise.

BOARD_IND: Number of independent board of directors divided by total number of board of directors.

INSIDEOWN: Percentage of shares held by insiders.

BH_ALIGN: Indicator variable that equals 1 if there are outside blockholders holding less than 35% (the upper quartile) of the shares outstanding; 0 otherwise.

BOARD_SIZE: natural log of 1+number of directors on the board of directors.

BIDASK_PRE: Daily bid ask spread (ask – bid)/ [(ask+bid)/2] averaged for each month measured over the 6 month period before Dec. 16, 2004 (establishment of the Advisory Committee of Smaller Public Companies).

BIDASK_POST: Daily bid ask spread (ask – bid)/ [(ask+bid)/2] averaged for each month measured over the 6 month period after 10K filing date in 2008.

ILLIQ_PRE: Ratio of the daily absolute return to the (dollar) trading volume, averaged for each month, measured over the 6 month period before Dec. 16, 2004 (establishment of the Advisory Committee of Smaller Public Companies).

ILLIQ_POST: Ratio of the daily absolute return to the (dollar) trading volume, averaged for each month, measured over the 6 month period after 10K filing date in 2008.

Table 4: Correlations of main variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
SIZE (1)	1.00															
LEV (2)	**0.13**	1.00														
R&D (3)	**-0.34**	-0.05	1.00													
ROA (4)	**0.46**	**-0.26**	**-0.52**	1.00												
BM (5)	0.09	**-0.31**	-0.07	0.10	1.00											
CASHVOL (6)	-0.05	0.01	-0.02	0.02	-0.00	1.00										
ANA (7)	0.06	-0.08	**0.26**	-0.05	0.06	-0.04	1.00									
DERIVATIVE(8)	**0.14**	**0.18**	**-0.12**	0.03	-0.12	0.10	-0.01	1.00								
IND_LITI (9)	0.01	0.09	**0.24**	**-0.14**	-0.04	0.00	**0.21**	0.01	1.00							
CEO_CHAIR (10)	**-0.11**	0.01	-0.05	-0.04	0.01	0.01	-0.08	-0.00	-0.04	1.00						
BOARD_IND (11)	**0.18**	0.07	0.08	0.07	0.01	-0.12	0.09	-0.04	0.12	**-0.15**	1.00					
INSIDEROWN (12)	0.03	-0.05	-0.12	0.09	-0.08	0.01	-0.01	0.04	0.12	0.09	**-0.31**	1.00				
BH_ALIGN (13)	0.03	0.01	-0.01	0.02	-0.03	-0.01	0.11	-0.02	**0.13**	-0.04	0.08	0.03	1.00			
BOARD_SIZE (14)	**0.48**	**0.14**	-0.03	**0.13**	0.01	**-0.14**	0.04	0.10	0.03	**-0.26**	**0.28**	-0.04	0.03	1.00		
RET_VOL (15)	**-0.34**	0.11	**0.16**	**-0.34**	-0.10	0.04	0.12	0.05	0.03	0.04	-0.04	0.08	-0.04	**-0.19**	1.00	
BID_ASK (16)	0.12	**0.13**	**-0.17**	0.09	0.09	0.01	**-0.27**	-0.02	0.03	0.03	0.06	**0.14**	-0.09	-0.04	**0.15**	1.00
ILLIQ (17)	-0.02	0.07	-0.09	-0.06	0.09	0.02	**-0.13**	0.04	0.06	0.05	-0.02	**0.17**	-0.09	-0.02	**0.39**	**0.70**

Note: numbers in **bold** indicate 1% or less significance level.

Variable Definition:
SIZE: Log (total assets).
LEV: Total liabilities divided by total assets.
R&D: Research and Development expense divided by total assets.
ROA: Income before extraordinary items divided by total assets.
BM: Book value of common equity divided by market value of equity.
CASHVOL: cash flow volatility measured as standard deviation of quarterly operating cash flows scaled by average absolute quarterly operating cash flows, calculated over the past three years.
ANA: natural log of 1+Number of analysts following.
IND_LITI: Indicator variable that equals 1 for firms with 2-digit SIC code as 28 (chemicals and allied products), 35 (industrial and commercial machinery and

computer equipment), 36 (electronic and other electrical equipment and components, except computer equipment), 38 (measuring, analyzing, and controlling instruments), 60 (depository institutions), 67 (holding and other investment offices) or 73 (business services), and 0 otherwise.

CEO_CHAIR: Indicator variable that equals 1 if the CEO of the firm also serves as the chairman of the board; 0 otherwise.

BOARD_IND: Number of independent board of directors divided by total number of board of directors.

INSIDEOWN: Percentage of shares held by insiders.

BH_ALIGN: Indicator variable that equals 1 if there are outside blockholders holding less than 35% (the upper quartile) of the shares outstanding, 0 otherwise.

BOARD_SIZE: natural log of 1+Number of directors on the board of directors.

BID_ASK: Daily bid ask spread (ask – bid)/ [(ask+bid)/2], averaged for each month.

RET_VOL: Standard deviation of daily returns measured for each month.

ILLIQ: Ratio of the daily absolute return to the (dollar) trading volume, averaged for each month.

All accounting variables are measured at the end of the fiscal year for firms that filed as smaller reporting companies for the first time. BIDASK, RET_VOL, and ILLIQ are measured for each month for both the pre period (6 month period before Dec. 16, 2004) and post period (6 month period after 10K filing date in 2008) and then averaged for each firm for calculation of the cross-sectional correlations.

Table 5: Determinants for Adoption of Scaled Disclosure

$$DISC_i = \beta_0\, Intercept + \beta_1\, SIZE_i + \beta_2\, LEV_i + \beta_3\, R\&D_i + \beta_4\, ROA_i + \beta_5\, BM_i + \beta_6 CASHVOL_i$$

$$+ \beta_7\, ANA_i + \beta_8\, IND\_LITI_i + \beta_9\, DERIVATIVE_i + \beta_{10} CEO\_CHAIR_i + \beta_{11} BOARD\_IND_i$$

$$+ \beta_{12}\, INSIDEROWN_i + \beta_{13}\, BH\_ALIGN_i + \beta_{14}\, BOARD\_SIZE_i + \varepsilon_i \qquad (1)$$

	DISC_ALL	DISC_RISK	DISC_COMP
Intercept	-0.5005 (0.3991)	**-1.8418*** (0.0027)***	**-1.2029*** (0.0512)*
SIZE	**-0.1360*** (0.0507)*	**-0.1353** (0.0468)**	-0.0258 (0.7098)
LEV	**0.5173** (0.0225)**	**0.3758** (0.0616)*	-0.1199 (0.5603)
R&D	-0.7004 (0.1144)	**-0.8571** (0.0579)*	-0.3502 (0.4470)
ROA	-0.0879 (0.7235)	-0.2806 (0.2603)	0.0144 (0.9541)
BM	0.0216 (0.3699)	0.0119 (0.5903)	0.0044 (0.8564)
CASHVOL	0.0033 (0.5654)	0.0022 (0.5117)	0.0072 (0.5961)
ANA	-0.1573 (0.1678)	-0.0268 (0.8190)	-0.0625 (0.6009)
IND_LITI	-0.0359 (0.7786)	**0.2468** (0.0599)*	0.1353 (0.3083)
DERIVATIVE	0.1626 (0.3191)	**0.3039** (0.0636)*	0.1093 (0.5080)
CEO_CHAIR	**0.3194** (0.0120)**	**0.3588** (0.0058)***	**0.2203** (0.0918)*
BOARD_IND	0.1619 (0.7418)	**0.8601** (0.0910)*	0.2717 (0.5965)
INSIDEROWN	-0.0018 (0.5587)	0.0039 (0.2348)	0.0007 (0.8430)
BH_Align	-0.1725 (0.1612)	-0.1787 (0.1584)	**-0.2293** (0.0730)*
BOARD_SIZE	0.4091 (0.1090)	**0.4649** (0.0762)*	0.3364 (0.5080)

Log Likelihood	-295	-274	-270
N	445	445	445

Note: ***, **, and * represent 1%, 5% and 10% significance. All accounting and corporate governance variables are measured at the fiscal year end when smaller reporting companies filed their 10-K to SEC.

Variable Definition:
DISC_ALL: Indicator variable that equals 1 for smaller reporting companies that choose to scale at least one item in their 10K filings, and 0 for smaller reporting companies that choose to maintain their disclosure level.
DISC_RISK: Indicator variable that equals 1 for smaller reporting companies that choose to scale disclosure on business risk or market risk in their 10K filings, and 0 for smaller reporting companies that choose to maintain their risk disclosure.
DISC_COMP: Indicator variable that equals 1 for smaller reporting companies that choose not to provide Compensation Discussion and Analysis in their proxy statement, and 0 for smaller reporting companies that maintain their CD&A disclosure.
SIZE: Log (total assets).
LEV: Total liabilities divided by total assets.
R&D: Research and Development expense divided by total assets.
ROA: Income before extraordinary items divided by total assets.
BM: Book value of common equity divided by market value of equity.
CASHVOL: cash flow volatility measured as standard deviation of quarterly operating cash flows scaled by average absolute quarterly operating cash flows, calculated over the past three years.
ANA: natural log of 1+number of analysts following.
DERIVATIVE: Indicator variable that equals 1 if the smaller reporting company has derivative positions and 0 otherwise.
IND_LITI: Indicator variable that equals 1 for firms with 2-digit SIC code as 28 (chemicals and allied products), 35 (industrial and commercial machinery and computer equipment), 36 (electronic and other electrical equipment and components, except computer equipment), 38 (measuring, analyzing, and controlling instruments), 60 (depository institutions), 67 (holding and other investment offices) or 73 (business services), and 0 otherwise.
CEO_CHAIR: Indicator variable that equals 1 if the CEO of the firm also serves as the chairman of the board; 0 otherwise.
BOARD_IND: Number of independent board of directors divided by total number of board of directors.
INSIDEOWN: Percentage of shares held by insiders.
BH_ALIGN: Indicator variable that equals 1 if there are outside blockholders holding less than 35% (the upper quartile) of the shares outstanding; 0 otherwise.
BOARD_SIZE: natural log of 1+number of directors on the board of directors.

Table 6: Changes in Long-Term Liquidity (ILLIQ) for Smaller Reporting Companies

$$ILLIQ_{,t} = \lambda_0\,Intercept + \lambda_1\,SRC_i + \lambda_2\,DISC\_ALL_i + \lambda_3\,POST_t + \lambda_4\,SRC_i{*}POST_t$$
$$+ \lambda_5\,DISC\_ALL_i{*}POST_t + \Lambda\,Controls_{i,t} + \varepsilon_{i,t} \qquad (2)$$

Variable	Relative to large control firms (1)	Relative to large control firms (2)	Relative to small control firms (3)	Relative to small control firms (4)
Intercept	**0.3863** **(0.0001)*****	-0.2468 (0.2885)	**2.3709** **(0.0001)*****	**1.3150** **(0.0033)*****
SRC	**0.8943** **(0.0001)*****	**0.6465** **(0.0001)*****	**-1.0903** **(0.0023)*****	**-0.6911** **(0.0417)****
DISC_ALL	-0.0189 (0.9146)	-0.0107 (0.9482)	-0.0189 (0.9149)	0.0009 (0.9958)
POST	**0.3702** **(0.0001)*****	**0.1702** **(0.0234)****	0.4831 (0.3233)	0.5293 (0.2292)
SRC*POST	**1.4484** **(0.0001)*****	**1.4256** **(0.0001)*****	**1.3354** **(0.0162)****	**0.9478** **(0.0614)***
DISC_ALL*POST	**0.9443** **(0.0130)****	**0.8866** **(0.0128)****	**0.9443** **(0.0132)****	**0.8569** **(0.0142)****
RET_VOLATILITY		**18.8891** **(0.0001)*****		**21.8646** **(0.0001)*****
Log(MV)		**-0.2294** **(0.0020)*****		**-0.3337** **(0.0017)*****
LEV		**2.6834** **(0.0001)*****		**4.1516** **(0.0001)*****
Log(price)		-0.0369 (0.5538)		**-0.3650** **(0.0028)*****
R2 (%)	23.13	28.43	11.82	20.71
N	5753	5753	3125	3125

Note: ***, **, and * represent 1%, 5% and 10% significance, respectively. All results are clustered by firm.

Variable Definition:
ILLIQ: Ratio of the daily absolute return to the (dollar) trading volume, averaged for each month. This ratio gives the absolute (percentage) price change per dollar of daily trading volume, or the daily price impact of the order flow.
SRC: An indicator variable that equals 1 for smaller reporting companies; 0 for control firms.

DISC_ALL: An indicator variable that equals 1 for smaller reporting companies with scaled disclosure, and 0 for the smaller reporting companies that maintain the disclosure and for control firms.

POST: Indicator variable equal to 1 for the 6-month period after 10K filing date in 2008, 0 for the 6-month period before Dec. 16, 2004 (establishment of the Advisory Committee of Smaller Public Companies).

RET_VOLATILITY: Measured as the standard deviation of daily returns measured for each month.

Log(MV): The natural log of the market value at the end of the fiscal year for both the pre and post regulation periods.

LEV: Measured as total liability divided by the market value of total assets at the end of the fiscal year for both the pre and post regulation periods.

Table 7: Changes in Long-Term Liquidity (BID-ASK spread) for Smaller Reporting Companies

$$BID\text{-}ASK_{i,t} = \lambda_0 \, Intercept + \lambda_1 \, SRC_i + \lambda_2 \, DISC\_ALL_i + \lambda_3 \, POST_t + \lambda_4 \, SRC_i * POST_t$$
$$+ \lambda_5 \, DISC\_ALL_i * POST_t + \Lambda Controls_{i,t} + \varepsilon_{i,t} \qquad (2)$$

Variable	Relative to large control firms (1)	Relative to large control firms (2)	Relative to small control firms (3)	Relative to small control firms (4)
Intercept	**0.0102 (0.0001)*****	-0.0022 (0.2198)	**0.0256 (0.0001)*****	**0.0110 (0.0001)*****
SRC	**0.0087 (0.0001)*****	**0.0075 (0.0001)*****	**-0.0067 (0.0013)**	**-0.0053 (0.0126)****
DISC_ALL	-0.0002 (0.8762)	-0.0006 (0.6359)	-0.0003 (0.8280)	-0.0006 (0.6221)
POST	**0.0064 (0.0001)*****	**0.0045 (0.0001)*****	**0.0072 (0.0105)**	**0.0064 (0.0126)****
SRC*POST	**0.0074 (0.0001)*****	**0.0075 (0.0001)*****	**0.0067 (0.0424)**	**0.0050 (0.0886)***
DISC_ALL*POST	**0.0049 (0.0283)****	**0.0049 (0.0167)****	**0.0049 (0.0307)**	**0.0049 (0.0165)****
RET_VOLATILITY		**0.2156 (0.0001)*****		**0.2444 (0.0001)*****
Log(MV)		**-0.0012 (0.0165)****		**-0.0012 (0.0457)****
LEV		**0.0199 (0.0001)*****		**0.0233 (0.0001)*****
Log(price)		**0.0010 (0.0467)****		-0.0005 (0.5194)
R2 (%)	25.03	34.37	14.93	26.44
N	5860	5860	3190	3190

Note: ***, **, and * represent 1%, 5% and 10% significance, respectively. All results are clustered by firm.

<u>Variable Definition:</u>
BID_ASK: Daily bid ask spread (ask – bid)/ [(ask+bid)/2], averaged for each month.
SRC: An indicator variable that equals 1 for smaller reporting companies; 0 for control firms.
DISC_ALL: An indicator variable that equals 1 for smaller reporting companies with scaled disclosure, and 0 for the smaller reporting companies that maintain the disclosure and for control firms.

POST: Indicator variable equal to 1 for the 6-month period after 10K filing date in 2008, 0 for the 6-month period before Dec. 16, 2004 (establishment of the Advisory Committee of Smaller Public Companies).

RET_VOLATILITY: Measured as the standard deviation of daily returns measured for each month.

Log(MV): The natural log of the market value at the end of the fiscal year for both the pre and post regulation periods.

LEV: Measured as total liability divided by the market value of total assets at the end of the fiscal year for both the pre and post regulation periods.

Table 8: Changes in Long-Term Liquidity (ILLIQ) for Smaller Reporting Companies that Maintain the Disclosure Level

$$ILLIQ_{,t} = \lambda_0\, Intercept + \lambda_1\, SRC_i + \lambda_2\, DISC\_ALL_i + \lambda_3\, POST_t + \lambda_4\, SRC_i{*}POST_t$$
$$+ \lambda_5\, DISC\_ALL_i{*}POST_t + \Lambda\, Controls_{\,i,t} + \varepsilon_{i,t} \quad (3)$$

Variable	Relative to large control firms (1)	Relative to large control firms (2)	Relative to small control firms (3)	Relative to small control firms (4)
Intercept	**0.3863** **(0.0001)*****	-0.1973 (0.4448)	**2.3709** **(0.0001)*****	**1.7332** **(0.0013)*****
MAINTAIN	**0.9426** **(0.0001)*****	**0.7565** **(0.0001)*****	**-1.0420** **(0.0070)*****	-0.5955 (0.1054)
AGENCY	-0.0959 (0.7182)	-0.0300 (0.9097)	-0.0189 (0.9149)	-0.0134 (0.9620)
POST	**0.3702** **(0.0001)*****	**0.2287** **(0.0031)*****	0.4831 (0.3243)	0.6711 (0.1191)
MAINTAIN*POST	**1.0636** **(0.0018)*****	**1.0147** **(0.0017)*****	0.9506 (0.1091)	0.3363 (0.5260)
AGENCY*POST	**0.8743** **(0.0977)***	**0.9328** **(0.0677)***	**0.8743** **(0.0988)***	**1.0736** **(0.0314)****
RET_VOLATILITY		**12.9078** **(0.0001)*****		**14.9856** **(0.0001)*****
Log(MV)		**-0.1565** **(0.0734)***		**-0.4045** **(0.0070)*****
LEV		**2.1419** **(0.0001)*****		**4.8540** **(0.0001)*****
Log(price)		-0.0293 (0.6080)		**-0.5394** **(0.0015)*****
R2 (%)	19.02	23.65	7.43	17.56
N	4396	4396	1768	1768

Note: ***, **, and * represent 1%, 5% and 10% significance, respectively. All results are clustered by firm.

Variable Definition:

ILLIQ: Ratio of the daily absolute return to the (dollar) trading volume, averaged for each month. This ratio gives the absolute (percentage) price change per dollar of daily trading volume, or the daily price impact of the order flow.

MAINTAIN: An indicator variable that equals 1 for smaller reporting companies that maintain the disclosure level, 0 for control firms.

AGENCY: An indicator variable that equals 1 for smaller reporting companies that maintain the disclosure level and have above median agency costs, 0 for smaller reporting companies that maintain the disclosure level and have below median agency costs and for control firms. Agency costs are captured by the principle component of the following three factors: CEO_CHAIR, BH_ALIGN, and ANA.

POST: Indicator variable equal to 1 for the 6-month period after 10K filing date in 2008, 0 for the 6-month period before Dec. 16, 2004 (establishment of the Advisory Committee of Smaller Public Companies).

RET_VOLATILITY: Measured as the standard deviation of daily returns measured for each month.

Log(MV): The natural log of the market value at the end of the fiscal year for both the pre and post regulation periods.

LEV: Measured as total liability divided by the market value of total assets at the end of the fiscal year for both the pre and post regulation periods.

Table 9: Changes in Long-Term Liquidity (BID-ASK spread) for Smaller Reporting Companies that Maintain the Disclosure Level

$$BID\text{-}ASK_{i,t} = \lambda_0\, Intercept + \lambda_1\, MAINTAIN_i + \lambda_2\, AGENCY_i + \lambda_3\, POST_t +$$
$$\lambda_4\, MAINTAIN_i*POST_t + \lambda_5\, AGENCY_i*POST_t + \Lambda\, CONTROLS + \varepsilon_{i,t} \quad (3)$$

Variable	Relative to large control firms (1)	Relative to large control firms (2)	Relative to small control firms (3)	Relative to small control firms (4)
Intercept	**0.0102 (0.0001)*****	-0.0016 (0.4720)	**0.0258 (0.0001)*****	**0.0124 (0.0001)*****
MAINTAIN	**0.0093 (0.0001)*****	**0.0078 (0.0001)*****	**-0.0063 (0.0055)*****	**-0.0047 (0.0303)****
AGENCY	-0.0012 (0.5221)	-0.0003 (0.8597)	-0.0012 (0.5231)	-0.0003 (0.8948)
POST	**0.0064 (0.0001)*****	**0.0048 (0.0001)*****	**0.0072 (0.0147)****	**0.0075 (0.0126)****
MAINTAIN*POST	0.0024 (0.1121)	**0.0035 (0.0811)***	0.0025 (0.4668)	0.0002 (0.8968)
AGENCY*POST	**0.0091 (0.0034)*****	**0.0089 (0.0030)*****	**0.0091 (0.0036)*****	**0.0089 (0.0019)*****
RET_VOLATILITY		**0.1899 (0.0001)*****		**0.2133 (0.0001)*****
Log(MV)		**-0.0013 (0.0471)****		**-0.0020 (0.0276)****
LEV		**0.0208 (0.0001)*****		**0.0301 (0.0001)*****
Log(price)		**0.0013 (0.0182)****		-0.0010 (0.3989)
R2 (%)	20.70	30.26	11.61	23.64
N	4491	4491	1821	1821

Note: ***, **, and * represent 1%, 5% and 10% significance, respectively. All results are clustered by firm.

<u>Variable Definition:</u>
Bid-Ask Spread: Daily bid ask spread (ask – bid)/ [(ask+bid)/2] averaged for each month.
MAINTAIN: An indicator variable that equals 1 for smaller reporting companies that maintain the disclosure level, 0 for control firms.

AGENCY: An indicator variable that equals 1 for smaller reporting companies that maintain the disclosure level and have above median agency costs, 0 for smaller reporting companies that maintain the disclosure level and have below median agency costs and for control firms. Agency costs are captured by the principle component of the following three factors: CEO_CHAIR, BH_ALIGN, and ANA.

POST: Indicator variable equal to 1 for the 6-month period after 10K filing date in 2008, 0 for the 6-month period before Dec. 16, 2004 (establishment of the Advisory Committee of Smaller Public Companies).

RET_VOLATILITY: Measured as the standard deviation of daily returns measured for each month.

Log(MV): The natural log of the market value at the end of the fiscal year for both the pre and post regulation periods.

LEV: Measured as total liability divided by the market value of total assets at the end of the fiscal year for both the pre and post regulation periods.