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Revealing Future Prospects without Forecasts: The Case of Accelerating Material Contract Filings

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ABSTRACT: Extant research on voluntary disclosure about future prospects has focused on two forward-looking disclosure mechanisms: management forecasts and conference calls. This study examines the accelerated filing of material contracts as another type of future-related disclosure that involves *no* forecasting. I find that firms are more likely to accelerate material contract filings when forward-looking disclosures could lack credibility or arouse litigation concerns. However, for proprietary cost considerations, firms delay contract filings when facing high (low) product market competition from incumbents (potential entrants). I also find that accelerated contract filing is incrementally associated with lower information asymmetry. Overall, while presenting a cost-benefit trade-off that is distinctly different from forward-looking disclosures, accelerated contract filing is an important alternative channel through which firms communicate future prospects to investors.

Keywords: *material contracts*; *Form 8-K*; *management forecasts*; *disclosure credibility*; *proprietary costs*.

Data Availability: *The data used in this study are available from the public sources identified in the paper. Contact the author for any specific data requests*.

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I. INTRODUCTION

This study examines the cost-benefit trade-off that managers face when providing future-related information through accelerated filing of material contracts (MCs) and the capital market implications of this disclosure practice. Material contracts, which are binding agreements to perform in the future, contain significant value-relevant information (Carter and Soo 1999; Verrecchia and Weber 2006). Although Regulation S-K, first effective in 1978, mandated the filing of material contracts, firms had considerable discretion as to its timing. This led regulators to be concerned that prolonged delays could negatively affect the "currency and adequacy" of corporate disclosure and the market's ability to "accurately and quickly value securities" (SEC 2004). Consequently, Congress included a provision in the Sarbanes-Oxley Act (SOX) that mandated the disclosure of material corporate information "on a rapid and current basis" (SOX Section, 409, "Real Time Issue Disclosures"). The SEC later issued the *Additional Form 8-K Disclosure and Acceleration of Filing Date Rule* in 2004 (hereafter, the 2004 Rule), requiring that firms disclose MC information via Form 8-K filings within four business days.

Although investors generally applauded the regulatory changes for offering timely access to important future-related information, skeptics were concerned about the increased proprietary costs that would result from hastily releasing sensitive information.[1] In addition, contrary to the legislative intent, skeptics also suggested that information asymmetry could increase due to differential investor sophistication in processing highly technical transaction-level data (O'Hara 2004; Taylor 2010). Despite the controversy, little evidence exists on the timing of material contract filings or their implications for the capital market.

In addition to the regulatory motivation, extant research on firms' voluntary disclosure about future prospects has focused almost exclusively on the two forward-looking disclosure mechanisms of management forecasts (MFs) and conference calls (Leuz and Wysocki 2008; Beyer et al. 2010). Little is known about other types of future-related disclosure that do not provide forecasts. In particular, a key unanswered question is whether firms identified by prior studies (e.g., Lang and Lundholm 1993; Frankel et al. 1999) as "less forthcoming" disclosers are truly silent about their future operations or whether they use disclosure mechanisms that prior research has overlooked. As material contracts contain information about future operations, examining the accelerated filing of such binding agreements provides an opportunity to answer this question.

There are several reasons to expect that firms could face a different cost-benefit trade-off with accelerated filing of material contracts. First, simply by releasing contract documents, firms do not make projections. While projections are susceptible to forecast errors and the "cheap talk" problem (Fischer and Verrecchia 2000; Rogers and Stocken 2005), binding contracts have high disclosure credibility as they are enforceable under commercial laws and provide contextual details that help investors better assess business prospects. In situations where forecasts are constrained by disclosure credibility concerns, firms are more likely to find accelerated contract filing a valuable and attractive alternative for revealing their future operations. Second, despite safe-harbor provisions in securities laws, firms making forecasts cannot completely eliminate litigation exposure related to material misrepresentation (Healy and Palepu 2001). Material contracts, however, are immune to this exposure because they are factually correct. Consequently, firms with high litigation exposure are expected to rely more on accelerated contract filing. Third, compared to forecasting summary metrics such as earnings, filing entire contract documents could reveal more

[1] Also see the comment letters from the "Grundfest group," Financial Executives International (FEI), KPMG, and Intel, File No. S7-22-02.

proprietary information.[2] Therefore, product market competition would play an important role in contract filing timing. Finally, due to potentially high proprietary costs, a firm's decision to quickly release contracts depends critically on the marginal benefits it could derive. For firms with a richer information environment, the marginal benefits from accelerating contract filing would be less likely to justify the ensuing costs.

Based on a comprehensive sample of 68,465 material contracts filed by 4,515 firms during the pre-regulation period of 2001–2003, I examine the characteristics of firms that voluntarily accelerate contract filing through Form 8-K and the implications of this disclosure practice on information asymmetry. Descriptive evidence shows that 9.81 percent of material contracts are filed via Form 8-K without subsequent MFs, while 9.68 percent are followed by an MF without a Form 8-K being filed. The correlation coefficient between these two disclosure choices is −0.044. Although prior studies show that firms often supplement MFs with other disclosures (Hutton et al. 2003; Baginski et al. 2004), my evidence suggests that accelerated contract filing is not merely another set of supplementary disclosures to MFs, but that firms could use such filings as an important alternative disclosure route.

A regression analysis supports my prediction that firms are more likely to accelerate contract filings when forecasts would otherwise lack credibility. Specifically, firms tend to use Form 8-K when there is greater forecasting difficulty (Rogers and Stocken 2005) due to significant changes in business such as more investment opportunities, equity offerings, M&A activities, and less informative earnings, or when contracts contain good news. Consistent with litigation concerns, firms speed up contract filing when they face higher litigation risk, especially when there is downside risk due to bad news. I also find that firms with greater analyst following and higher institutional holdings tend to avoid accelerated filings, supporting the hypothesis that firms with a richer information environment are less likely to derive adequate marginal benefits to justify the expedited disclosures of proprietary information (Core 2001; Beyer et al. 2010).

These findings *contrast* with the evidence from prior studies on forward-looking disclosure mechanisms. Specifically, firms issuing forecasts or holding open conference calls tend to be relatively larger in size and covered by more analysts or institutions (Kasznik and Lev 1995; Frankel et al. 1999; Ajinkya et al. 2005; Graham et al. 2005). They have more informative earnings and fewer investment opportunities (Lennox and Park 2006), and are not facing impending financing activities (Frankel et al. 1995; Lang and Lundholm 2000). While such firms are often referred as "more forthcoming" disclosers (Lang and Lundholm 1993; Frankel et al. 1999), my evidence shows that the other firms could instead reveal their prospects via an alternative disclosure mechanism that does not provide a forward-looking statement.[3]

I also find that voluntary acceleration firms tend to operate in industries with relatively lower (higher) competition from existing incumbents (potential entrants). These *seemingly* conflicting results are consistent with the multi-dimensional nature of competition (Raith 2003; Karuna 2007; Berger 2011). While prior empirical research usually treats competition as a single construct (e.g.,

[2] Proprietary costs can vary significantly across different types of material contracts. For example, employment-related contracts are less likely to contain as much proprietary information as other types of contracts such as a technology license agreement. I explicitly control for this variation in my analyses. In particular, one set of analyses excludes employment contracts from the sample.

[3] A stream of research using AIMR disclosure scores finds that larger firms covered by more analysts and institutions have higher disclosure quality in general. To reconcile my findings with this literature, note that accelerated contract filing is distinct from other voluntary disclosures, especially forward-looking disclosures, in that it has considerably higher proprietary costs. For firms with a richer information environment, the expected limited marginal benefits of additional disclosure are unlikely to justify the costs (Core 2001).

Botosan and Harris 2000; Verrecchia and Weber 2006; Berger and Hann 2007) and considers the seemingly conflicting predictions of theories (i.e., Verrecchia 1990; Darrough and Stoughton 1990) as competing hypotheses, my finding suggests that rather than competing hypotheses, these theories may pertain to different dimensions of competition.

To examine the implications of voluntary acceleration of contract filings for the capital market, I test the contemporary association between this disclosure practice and the level of information asymmetry among investors. After controlling for self-selection and the effect of other disclosures, I find that accelerated contract filing is incrementally associated with a lower probability of informed trading (PIN), a higher share turnover, and higher quoted market depth. The evidence suggests that voluntary acceleration of material contract filings via Form 8-K helps to level the playing field (Hakansson 1977; Kim and Verrecchia 1991), allaying skeptics' concerns about increasing information asymmetry.

These inferences are robust to a battery of controls and sensitivity tests. First, given that material contracts are not uniform in subject matter and information content, I explicitly control for the effect of materiality (Heitzman et al. 2010) by adding both contract type and materiality proxies to the regressions. In particular, I develop a contract-level measure that captures the importance of a contract's dollar value relative to a firm's revenues. Second, Verrecchia and Weber (2006) show that firms can request that information be redacted from material contracts and that this redaction is associated with higher information asymmetry. I closely replicate their study and explicitly control for the redaction effect in my analysis. Third, I entertain various alternative specifications of the model, sample, and measures, including running a change regression, dropping all employment-related contracts due to their low materiality level and proprietary implications, and using different proxies for contract filing timing and information content. Finally, I conduct analyses using either individual contract or firm-quarter as the unit of observation to address the identification issue when multiple contracts are filed together.

As a last step, I redo the analysis on a post-regulation period and find a significant reduction in (1) the explanatory power of the aforementioned firm characteristics in explaining accelerated contract filing and (2) the association between filing acceleration and information asymmetry. While this result confirms the effectiveness of the 2004 Rule in pushing firms toward more timely filing of contracts via Form 8-K, it also indicates that the importance of accelerated contract filing as an alternative voluntary disclosure channel diminished after 2004.

Overall, my evidence suggests that accelerating material contract filings is an important disclosure mechanism. Like MFs or conference calls that foreshadow impending earnings or other performance news, accelerated contract filing speeds up the disclosure of contract-level information. The distinct features of the contract make it an attractive alternative for firms that prior research has identified as being less forthcoming disclosers. Nevertheless, I caution that the results of my study should not be interpreted as suggesting that the filing-acceleration firms have a higher disclosure quality; instead, such firms accelerate contract filings because the marginal benefits outweigh the marginal costs since information asymmetry tends to be higher for these firms. Furthermore, this paper also sheds light on the multiple dimensions of competition and their differential effects on proprietary information disclosure. The findings should prove informative to securities regulators, investors, and academics.

Section II provides the motivation for this paper and develops the hypotheses. Section III discusses the research design. Section IV describes the sample selection procedure and presents descriptive evidence. Section V reports evidence on the characteristics of firms that voluntarily accelerate material contract filings and the implications for the capital market. Section VI and VII present robustness checks and evidence from the post-regulation regime, respectively. Concluding remarks are provided in Section VIII.

II. MOTIVATION AND HYPOTHESES

Regulations and Material Contract Filing Timing

Regulation S-K defines material contracts as significant binding agreements that are not made in the ordinary course of business and that convey enforceable rights and obligations to firms. SEC regulations use the term "material" when a disclosure is expected to influence a reasonable investor's investment decision. While managers evaluate the materiality level, they are subject to SEC reviews to ensure compliance with regulations (Overdahl 1991).

SEC registrants must file the entire document of any material contract within their SEC reports, but they have considerable discretion as to its timing. Specifically, firms can either file contracts immediately via Form 8-K or defer filing to a future 10-K/10-Q report or registration statement. In the period from 2001–2003, more than 20 percent of material contracts filed with 10-K/10-Qs or registration statements were at least 220 days after the event. Concern about these delays led Congress to include Section 409, "Real Time Issuer Disclosures," which explicitly requires that firms disclose material changes "on a rapid and current basis," in the Sarbanes-Oxley Act of 2002 (SOX). To implement SOX, the SEC issued the 2004 Rule, mandating that firms provide at least summary information about any undisclosed material contracts via a Form 8-K within four business days. While firms can still choose to file the entire contract in the subsequent 10-K/10-Qs, the *limited* safe harbor that grants this option does not protect firms against all disclosure liabilities under securities laws (Sena 2004). Therefore, the new rule has put considerable pressure on firms to file the entire contract on a current basis.

Characteristics of Firms that Accelerate Material Contract Filings

Prior studies show that investors assign significant value to material contract disclosures (Carter and Soo 1999; Verrecchia and Weber 2006). However, little evidence exists on the costs and benefits associated with timely filing of material contracts. Research on future-related information disclosure has focused primarily on management forecasts and conference calls (Leuz and Wysocki 2008; Beyer et al. 2010). The general finding is that firms issuing forecasts or holding conference calls are relatively larger in size, more profitable, and are covered by more analysts or institutions (Kasznik and Lev 1995; Frankel et al. 1999; Ajinkya et al. 2005; Graham et al. 2005). They also have more informative earnings and fewer investment opportunities (Lennox and Park 2006), and are not facing impending financing activities (Frankel et al. 1995; Lang and Lundholm 2000).

Accelerated filing of material contracts, however, presents a different cost-benefit trade-off. First, because projecting future performance is not required, accelerated contract filing draws fewer credibility concerns. While firms could have incentives to disclose the economic prospects of future operations (Healy and Palepu 2001), firm-issued forecasts have an innate credibility issue because managers have incentives to opportunistically bias forecasts and to benefit from the bias (Fischer and Verrecchia 2000). One crucial factor affecting credibility is forecasting difficulty. Rogers and Stocken (2005) show that the credibility issue could be severe when it is difficult for investors to detect the bias, particularly when a firm's earnings are less predictable due to significant business changes. Filing material contracts, however, can lead to the desired high disclosure credibility in these situations because (1) filed documents are subject to higher scrutiny under anti-fraud provisions than voluntary forecasts, (2) commercial laws enforce the execution of contracts, and (3) contracts provide more contextual details that help investors better assess business prospects, which leads to the following hypothesis:

> **H1a (i):** Firms facing higher forecasting difficulty due to significant changes in business operations are more likely to accelerate the filing of material contracts.

Another determinant of forecast credibility is the sign of the news with good news forecasts perceived as less credible than bad news forecasts (Jennings 1987; Williams 1996). Consequently, when firms have material contracts that signify good news, managers are more likely to accelerate the filing:

H1a (ii): Firms are more likely to accelerate the filing of material contracts if the contracts contain good news rather than bad.[4]

Second, because they are factually correct, material contracts are largely immune to the untrue statement claims that could arise in securities litigation. Rule 10b-5 makes it unlawful for firms to either omit disclosure or make an untrue statement of material facts (Skinner 1994). If a firm makes forecasts to reveal future prospects, then litigation risks could be higher because the legal system may not effectively distinguish forecast errors made in good faith from intentional misrepresentation (Healy and Palepu 2001). Consistent with this perspective, Francis et al. (1994) finds that forecasting firms are subject to greater litigation risk. Rogers and Van Buskirk (2009) also show that firms reduce forecasts after litigation. Therefore, I expect firms with higher litigation risks to rely more on accelerated contract filing. Similarly, given the asymmetric loss function associated with bad news (Skinner 1994; Field et al. 2005; Cao and Narayanamoorthy 2011), material contracts that contain bad news should be accelerated more frequently for firms with high litigation risk. By accelerating the filing of bad news contracts, firms could reduce the probability of future lawsuits (Skinner 1994; Field et al. 2005), decrease the aggregate recoverable damages (Skinner 1997), and eliminate the chance of making any untrue statement if they otherwise choose to issue forecasts.[5] Taken together, I predict the following:

H1b (i): Firms facing higher litigation risk are more likely to accelerate the filing of material contracts.

H1b (ii): Firms with higher litigation risk are more likely to accelerate the filing of material contracts if the contracts contain bad news rather than good.[6]

Third, compared to reporting summary performance metrics such as earnings, releasing contract documents could expose more competitively sensitive information to the public. Prior research finds that firms are cautious with disaggregate revenue or cost numbers in segment reporting when such information is likely to cause competitive harm (Harris 1998; Berger and Hann 2003; Leuz 2004). Material contracts that reveal detailed technology, price, and financial arrangement information (see Appendix A for an example) are likely to involve significant proprietary costs (Verrecchia 1983, 1990). Recent research highlights that competition is not a single construct and that the various dimensions of competition could have differential effects on a

[4] Kothari et al. (2009) show that managers are more likely to expedite (delay) the disclosure of good (bad) news through management forecasts due to career and compensation concerns. Based on a similar intuition, one could argue that managers are more likely to accelerate the filing of material contracts with good news for opportunistic reasons rather than to address any credibility concerns. While I cannot completely rule out opportunism as a possibility, if credibility were not a consideration, then managers would be less likely to expedite the filing of MCs and could use management guidance with textual/verbal elaborations to more effectively convey good news. Overall, my hypothesis relies on prior evidence that good news forecasts by managers are less credible.

[5] However, even bad news forecasts may face the untrue statement problem. Rogers and Stocken (2005, 1235) note that "we do not find bad news is unbiased or even less biased than good news. This result suggests that bad news forecasts, which tend to be optimistic, should be viewed skeptically and not simply taken at face value."

[6] By using the term "bad news," I am not suggesting that managers knowingly enter into suboptimal contracts. Even optimal contracts could elicit negative market reactions. For instance, although stock issuances, on average, engender a negative market reaction, firms do issue equity. Such equity issuances are optimal in the sense that if managers had chosen to delay the issuance, the stock price would decline even further.

firm's decisions (Raith 2003; Karuna 2007; Berger 2011). In turn, theories on disclosure predict that a firm is less forthcoming with proprietary information when it faces higher competition from incumbents to preserve its competitive advantage (Verrecchia 1990) and more forthcoming when it faces higher competition from potential entrants, whom the firm seeks to deter from entering (Darrough and Stoughton 1990). Accordingly, I predict the following:

H1c: Firms facing lower (higher) competition from incumbents (potential entrants) are more likely to accelerate the filing of material contracts.

Finally, given the relatively high proprietary costs, a firm's decision to accelerate material contract filing depends critically on the marginal benefits it could derive. Prior research suggests that the marginal benefits of additional disclosure are expected to be rather limited for firms with a richer information environment (Beyer et al. 2010). For example, Botosan (1997) finds that the negative association between the disclosure index and cost of capital is confined to the subsample with a low analyst following. Bushee et al. (2003) show that firms covered by more analysts and institutions are less likely to hold open calls. Similarly, Core (2001, 446) argues that analysts and institutions produce information that reduces information asymmetry and, hence, the need for further disclosures. He also contends that these informed investors could simply prefer fewer additional disclosures to preserve the value of their relative advantage in the information intermediation market. Taken together, I predict the following:

H1d: Firms with a richer information environment are less likely to accelerate the filing of material contracts.

Material Contract Filing Acceleration and Information Asymmetry

While disclosing firms' private information is generally predicted to reduce information asymmetry (Beaver and Demski 1974; Diamond and Verrecchia 1991), disclosures need not result in all investors being equally well informed due to the costs of information processing (Mayo 1976). Differences in investors' information-processing abilities could result in more privately informed trading when less precise information is released (McNichols and Trueman 1994). In a similar vein, Lee et al. (1993) provide evidence that information asymmetry can increase shortly after disclosures.

However, Leuz and Verrecchia (2000) note that while such an increase in information asymmetry in response to corporate disclosures can occur in the short run, in the long run information asymmetry should be negatively related to the extent of disclosure. A few recent studies (e.g., Healy et al. 1999; Heflin et al. 2005; Verrecchia and Weber 2006) confirm the negative association in long-window tests. Brown and Hillegeist (2007) provide further evidence that the short-term information gap caused by disclosure does not persist in the long run, and that more timely disclosure will eventually level the playing field among investors (Hakansson 1977) and lead to less privately informed trading. Therefore, I predict the following:

H2: *Ceteris paribus,* accelerated material contract filings are associated with a lower level of information asymmetry among investors in the long run.

III. RESEARCH DESIGN

This section describes the method for identifying and extracting material contract information and develops empirical models to test the predictions of the previous section.

Identifying and Extracting Information from Material Contracts

Whenever a firm files material contracts with the SEC, the EDGAR system will automatically add a unique string "<TYPE>EX-10" to the top of every contract for identification purposes. Exploiting this feature, I employ a PERL program to download and screen all current reports, periodic reports, and registration statements filed on the EDGAR system between 2001 and 2003. After identifying material contracts, I use a second program to extract information including event date, redaction status, contract type, and contract value from each contract.[7]

Development of Models

I use the following model to test my predictions on the characteristics of firms that voluntarily accelerate material contract filings through Form 8-K:

$$\begin{aligned} Percent8K_i = {} & \beta_0 + \beta_1 MB_i + \beta_2 EquityIssue_i + \beta_3 DebtIssue_i + \beta_4 M\&A_i + \beta_5 ERC_i \\ & + \beta_6 GoodNews_i + \beta_7 LitRisk_i + \beta_8 LitRisk_i * GoodNews_i + \beta_9 PCMargin_i \\ & + \beta_{10} LowPPE_i + \beta_{11} IPIntens_i + \beta_{12} NumAnalyst_i + \beta_{13} InstOwn_i + \beta_{14} ROA_i \\ & + \beta_{15} Loss_i + \beta_{16} LnMVE_i + \beta_{17} LnNumOwn_i + \beta_{18} LnNumMC_i + \beta_{19} AbsCAR_i \\ & + \sum_{MCTYPE} \beta_{20,MCTYPE} LnMCV\_MCTYPE_i + \sum_{MCTYPE} \beta_{21,MCTYPE} \%MCTYPE_i + \varepsilon_i, \end{aligned} \tag{1}$$

where the dependent variable *Percent8K* is the percentage of material contracts that the firm filed via Form 8-K during the 12-month period ending four months after the end of the fiscal year. I choose this window because (1) any unreported material contracts are required to be filed with the 10-K report, and (2) virtually all 10-K reports are filed within 120 days after the fiscal year-end (Easton and Zmijewski 1993; Li and Ramesh 2009). Based on prior research, I expect firms with more investment opportunities, more external financing needs, more M&A activities, or less informative earnings to have more credibility concerns due to forecasting difficulty (Frankel et al. 1995; Healy and Palepu 2001; Rogers and Stocken 2005; Lennox and Park 2006). I also rely on the direction of the abnormal return over the contract filing date to identify the sign of the news (*GoodNews*). The proxies for growth opportunities (*MB*; Smith and Watts 1992), financing activities (*EquityIssue* and *DebtIssue*), investment activities (*M&A*), informativeness of earnings (*ERC*), and quality of the information environment (*NumAnalyst*, *InstOwn*) are based on prior literature. *LitRisk* is the securities class action litigation risk predicted by the model developed by Kim and Skinner (2012). Appendix B provides more details on these variables. I predict positive coefficients on *MB*, *EquityIssue*, *DebtIssue*, *M&A*, *GoodNews*, and *LitRisk*, and negative coefficients on *ERC*, *LitRisk* ∗ *GoodNews*, *NumAnalyst*, and *InstOwn*.

I use the industry price-cost margin (*PCMargin*) as a proxy for competition with incumbents. Industrial organization research suggests that higher product substitutability leads to a lower price-cost margin (Demsetz 1997). Similar to Karuna (2007), I measure the price-cost margin as industry sales divided by industry operating costs; I predict a positive slope reflecting firms' tendency to delay contract filings when they face high competition from incumbents. Conceptually, entry costs refer to the minimal investment before the commencement of operations (Karuna 2007). Because different industries have different structures for start-up costs, I employ two measures, *LowPPE* and *IPIntens*, to capture the entry cost related to the infrastructure and the intellectual property investments, respectively. *LowPPE* is a dummy variable that takes on the value 1 if the industry-average *PPE* is in the lowest decile of the distribution, and 0 otherwise. I calculate the industry-

[7] The detailed procedures are available from the author upon request.

average *PPE* as the market-share-weighted average gross value of property, plant, and equipment for each industry. Due to the absence of a natural financial statement item for the capitalized value of intellectual property, I use an industry dummy instead. Specifically, *IPIntens* takes a value of 1 for the pharmaceuticals, R&D service, programming, computers, electronics, or precise measurement instrument industries, and 0 otherwise. I predict a positive (negative) slope for *LowPPE* (*IPIntens*), reflecting firms' tendency to accelerate contract filings when they face high competition from potential entrants.

I include firm performance (*ROA* and *Loss*), firm size (*LnMVE*), number of contracts filed (*LnNumMC*), and number of shareholders (*LnNumOwn*) as controls. In addition, because material contracts are not homogeneous, I control for contract types by including a percentage variable (*%MCTYPE*) for each of the eight categories (see Section IV) to capture the portion of all contracts of each type filed during the year. To control for materiality (Heitzman et al. 2010), I use the unsigned three-day cumulative excess returns around the contract filing dates (*AbsCAR*). However, an issue with this measure is that it could aggregate the materiality of individual contracts when multiple contracts are filed on the same day.

To resolve this issue, I develop a contract-level measure of materiality, MC Value (*MCV*). Specifically, I search within each contract for the highest dollar value reported. Then I deflate the contract dollar value by the year's revenue to proxy for how important the contract is to a firm's operation. I acknowledge that this measure is imperfect, but it should be a useful indicator of the contract's economic significance. Given that this measure can have different implications for different contract types, I allow for separate slopes by including eight *LnMCV_MCTYPE* interactions in the model. For each contract type, it is calculated as the average natural logarithm of *MCV* plus 1 for all material contracts of this type filed during the year. If no contract of a specific type is filed or if no dollar value is reported in the contract, then *LnMCV_MCTYPE* for that type is set to 0.[8] Finally, I include untabulated year dummies to capture inter-temporal variations.

My second set of analyses focuses on the association between material contract filing acceleration and information asymmetry. Specifically, I estimate the following model with three different information asymmetry proxies:

$$\begin{aligned} PIN_i = {} & \gamma_0 + \gamma_1 Percent8K_i + \gamma_2 NumMF_i + \gamma_3 NumCC_i + \gamma_4 InsiderOwn_i \\ MonthlyTurnover_i \quad & + \gamma_5 NumAnalyst_i + \gamma_6 InstOwn_i + \gamma_7 MB_i + \gamma_8 LnNumMC_i + \gamma_9 LnMVE_i \\ DollarDepth_i \quad & + \gamma_{10} NYSE_i + \gamma_{11} AMEX_i + \gamma_{12} LnPrice_i i + \gamma_{13} AbsCAR_i + \gamma_{14} GoodNews_i \\ & + \gamma_{15} \%Redact_i + \sum_{MCTYPE} \beta_{16,MCTYPE} LnMCV\_MCTYPE_i \\ & + \sum_{MCTYPE} \beta_{17,MCTYPE} \%MCTYPE_i + \varepsilon_i, \end{aligned} \tag{2}$$

where the first proxy, *PIN*, is the probability of private-information-based trading, estimated according to Easley et al. (1997) for the year. Prior studies argue that *PIN* is a more direct measure of information asymmetry than are spread-based proxies and, hence, is not subject to the various econometrics and interpretation issues that plague the latter (Callahan et al. 1997; Brown et al. 2004). The second proxy, *MonthlyTurnover*, is the average monthly share turnover during the year. Because uninformed traders avoid stocks with high private-information-based trading, share turnover is negatively related to information asymmetry (Easley et al. 1996; Leuz and Verrecchia

[8] A material contract may not report any dollar value when it is redacted or when it pertains to certain incentive compensation or option grant agreements where only the number of shares is specified. In a sensitivity test in Section VI, I use the individual contract as the unit of observation and run a regression on all material contracts with non-missing *MCV*. The inferences remain unchanged.

2000). The third proxy, *DollarDepth*, is the average daily median quoted dollar depth during the year. This proxy reflects market-makers reducing the quoted depth in response to increased information asymmetry (Verrecchia and Weber 2006). As discussed in Section II, I use long-run measures to proxy for information asymmetry.

In addition to the explanatory variable, *Percent8K*, I follow prior studies by including controls for the number of MFs (Coller and Yohn 1997), the number of conference calls, insider ownership (Brown et al. 2004), the sophistication of market participants (Roulstone 2003), growth opportunities (Smith and Watts 1992), the percentage of redacted contracts, the number of contracts filed, firm size, exchange membership, and average share price (Verrecchia and Weber 2006). I also include the sign of the news and the materiality measures discussed above to control for information content. Finally, I add untabulated year and industry dummies to capture inter-temporal and cross-industry variations.

Because *Percent8K* is a percentage variable with a high incidence of extreme values of 0 percent and 100 percent, Papke and Wooldridge (1996) contend that OLS regression is inappropriate because the effect of any independent variable cannot be constant over its range, and because the predicted value may not fall into the unit interval. I follow their suggestion to use a GLM-based fractional response variable regression to estimate the firm characteristics model. For the information asymmetry models, I use the two-stage least square (2SLS) instrumental variable method suggested by Wooldridge (2002) to derive consistent slope estimates for *Percent8K*.[9]

IV. SAMPLE SELECTION AND DESCRIPTIVE EVIDENCE

Sample Selection

My initial sample consists of 23,255 firm-fiscal years from the Compustat/CRSP merged database over the period from 2001–2003. I choose this period to ensure a clean test in which (1) accelerating material contract filing via Form 8-K is prior to the 2004 Rule and therefore truly voluntary, and (2) the effect of filing acceleration is less likely to be contaminated by selective disclosure prior to Regulation FD. I exclude 2,270 observations from the banking industry because their SEC filings capture only part of the regulatory disclosure. Given that the New York Stock Exchange (NYSE) Trade and Quote (TAQ) database covers only NYSE, AMEX, and NASDAQ firms, I limit my analysis to firms in those markets, which reduces my sample size to 19,210 firm-years. To identify material contracts from SEC filings, I require that firms be linked to the EDGAR system, eliminating an additional 4,077 observations. I further exclude 2,045 observations due to missing firm characteristic variables, yielding 13,081 observations. Finally, by focusing on firm-years with at least one material contract filed, my final sample consists of 10,393 fiscal years from 4,515 firms.

Descriptive Evidence on Material Contract Filings

Table 1 provides descriptive information on firms' filing practices for material contracts. Based on the 13,081 firm-years for which I have complete information, I identify 3,652 unique firms over

[9] Specifically, I first estimate the fractional response variable model by maximum likelihood while including as regressors all the exogenous variables from both the first-stage firm characteristics model and the second-stage information asymmetry model. I use the fitted value of *Percent8K* as its own instrument to estimate the second-stage Model (2). Wooldridge (2002, 623–625) shows that if the first stage is a nonlinear model, then the fitted value can be used as its own IV because (1) the fitted value is correlated but not perfectly so with *Percent8K*, and (2) the fitted value from the nonlinear model, what in this case is a fractional response variable model estimated with the specification of binomial family and probit link function, is not correlated with the error term in the second stage. Identification/IV relevance tests, based on the Anderson canonical correlation statistics, on these models consistently show that they are well identified and the instruments used are relevant.

TABLE 1

Descriptive Information on Firms' Material Contract Filings through Form 8-K

Panel A: Incidence of Material Contracts for 3,652 Firms with Continuing Information over Fiscal Years 2001–2003[a]

Number of Fiscal Years with at Least One Material Contract	Frequency	Percentage
0	259	7.1%
1	340	9.3%
2	711	19.5%
3	2,342	64.1%

Panel B: Incidence of Material Contracts Filed through Form 8-K by 2,342 Firms with at least One Material Contract for Each of the Three Fiscal Years 2001–2003

Number of Fiscal Years with at Least One Material Contract Filed Through Form 8-K	Frequency	Percentage
0	1,491	63.7%
1	542	23.1%
2	226	9.7%
3	83	3.5%

Panel C: Number of Material Contracts per Firm and the Percentage of Firms Using Form 8-K for at least One Material Contract Filing, by Fiscal Year[b]

	2001	2002	2003	2001–2003
Number of Firm-Years	3,420	3,576	3,397	10,393
Number of Material Contracts per Firm-Year				
Mean	6.5	6.8	6.4	6.6
Median	5	5	4	5
Percentage of Firms Using Form 8-K for at Least One Material Contract Filing	16.3%	18.0%	20.4%	18.2%

[a] The 3,652 firms are identified from the 13,081 firm-fiscal years that: (1) are in the Compustat/CRSP merged database over fiscal years 2001–2003; (2) are not in the banking industry; (3) are traded on NYSE, AMEX, or NASDAQ; (4) can be linked to the EDGAR system; and (5) have all firm characteristics regressors available.

[b] This is based on the 10,393 firm-fiscal years with at least one material contract.

the 2001–2003 period. Panel A reveals that only 7.1 percent of the firms have no material contracts during the period. 2,342 (64.1 percent) of them have at least one contract every year, indicating that material contracts are a fairly pervasive occurrence. Panel B further shows that out of the 2,342 firms, 851 (36.3 percent) used Form 8-K to accelerate contract filing for at least one of the years in question. Panel C also indicates that the total number of contracts per year is fairly stable over the sample period, with a median value between 4 and 5. The percentage of firms using Form 8-K for contract filing increases slightly from 16.3 percent in 2001 to 20.4 percent in 2003.

For a better understanding of material contract filings, I also provide information on the individual contract level. Following the guideline in Item 601 of Regulation S-K, I classify the 68,465 sample contracts into eight categories. Table 2, Panel A, shows that the largest share is the

TABLE 2

Descriptive Information on Form 8-K Disclosure of Material Contracts by Contract Types[a]

Panel A: Number of Contracts and Materiality Level

				Materiality Level (MC Value)			
		MCs Filed via Form 8-K		MCs Filed via Form 8-K		MCs Filed via Other Reports	
Contract Type	Number of MCs	No. of Obs.	% in Type	No. of Obs.	Median	No. of Obs.	Median
BUS	5,348	450	8.4%	249	11.2%***	2,287	2.9%
LEA	5,036	327	6.5%	256	7.8%***	3,745	0.8%
AAD	1,647	377	22.9%	293	13.9%***	918	5.0%
EQU	5,734	1,994	34.8%	1,156	13.6%***	1,878	7.0%
BSC	332	116	34.9%	87	7.1%	135	9.0%
CRE	16,925	2,470	14.6%	2,013	23.9%***	11,881	14.7%
EMP	31,294	846	2.7%	509	1.1%***	15,813	0.1%
OTH	2,149	331	15.4%	179	20.0%***	747	3.1%
Total	68,465	6,911	10.1%	4,742	16.7%***	37,404	1.1%

Panel B: Market Reaction around Filing Date

	MCs Filed via Form 8-K			MCs Filed via Other Reports		
Contract Type	No. of Obs.	|CAR| (Median)	% of +	No. of Obs.	|CAR| (Median)	% of +
BUS	450	0.038**	48.7%	4,898	0.033	48.1%
LEA	327	0.033	46.2%	4,709	0.035	45.8%
AAD	377	0.024	50.7%	1,270	0.027	47.2%
EQU	1,994	0.047***	48.9%***	3,740	0.035	43.2%
BSC	116	0.034*	60.3%**	216	0.027	48.1%
CRE	2,470	0.035***	47.7%*	14,455	0.031	45.9%
EMP	846	0.033***	51.5%*	30,448	0.024	48.8%
OTH	331	0.034***	52.0%	1,818	0.026	49.1%
Total	6,911	0.037***	49.1%***	61,554	0.028	47.5%

Panel C: Market Reaction around Event Date

	MCs Filed via Form 8-K			MCs Filed via Other Reports		
Contract Type	No. of Obs.	|CAR| (Median)	% of +	No. of Obs.	|CAR| (Median)	% of +
BUS	446	0.040*	48.7%	4,727	0.036	49.1%
LEA	319	0.039	46.8%	4,586	0.037	46.9%
AAD	366	0.028	52.0%	1,246	0.029	48.4%
EQU	1,937	0.050***	48.4%	3,536	0.041	48.1%
BSC	115	0.041	55.2%	205	0.037	48.6%
CRE	2,394	0.039***	46.2%	14,048	0.032	48.6%
EMP	834	0.035***	53.4%***	27,678	0.028	45.1%
OTH	318	0.034***	47.7%	1,487	0.028	39.6%
Total	6729	0.041***	48.5%	57,513	0.031	46.5%

(continued on next page)

TABLE 2 (continued)

*, **, *** $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively, one-tailed tests.

[a] This table is based on 68,465 material contracts filed by 4,515 sample firms for fiscal years 2001–2003. Business-Related (BUS) includes contracts related to advertising, business alliance, competition, construction, customer, exploration, franchise, intellectual property, license, manufacturing, patent, pricing, product, research and development, royalty, supplier, trademark, etc. Lease-Related (LEA) includes contracts related to capital and operating leases. Asset Acquisition or Disposition (AAD) includes contracts related to asset purchase or sale, real estate, etc. Equity-Related (EQU) includes contracts related to shareholders, shelf registration, underwriting, voting rights, warrants, etc. Business Structure Changes (BSC) includes those ancillary contracts related to acquisition, merger, reorganization, restructuring, separation, takeover, etc. Debt-Related (CRE) includes contracts related to bond, collateral, covenant, credit facility, debenture, guaranty, indenture, interest rate, loan, note, etc. Employment-Related (EMP) includes contracts related to benefit plan, bonus, compensation, directors, management, stock option, pension, promotion, resignation, restricted share, retirement, severance, etc. Other (OTH) includes all other contracts. Materiality level of a MC is calculated as the highest dollar value in the contract deflated by the revenue for the year. |CAR| is the absolute value of the market-adjusted cumulative abnormal return over the three-day [−1,+1] window around the MC filing date (Panel B) or event date (Panel C). % of + refers to the percentage of MCs with a positive CAR over the filing date or signing date. *s denote if the materiality level, |CAR|, or % of + for MCs filed via Form 8-K is significantly higher than it is for MCs filed via other reports.

46 percent comprised of employment-related (EMP) contracts, followed by debt-related, equity-related, and business-related contracts. While 10.1 percent of all contracts were filed via Form 8-K, the incidence is only 2.7 percent for EMP contracts, suggesting that such contracts generally do not contain information that requires immediate dissemination. Similarly, descriptive statistics for the contract-level materiality measure (*MCV*) reveal that, regardless of the filing channel, EMP contracts have the lowest median values across all types (1.1 percent and 0.1 percent).

The low materiality level of EMP contracts can be understood in the context of Regulation S-K. Specifically, Regulation S-K considers *any* agreement with executives and directors to be a material contract, although some EMP contracts could fall well short of a reasonable materiality standard.[10] Recognizing this problem, the SEC issued a new rule in August 2006 to eliminate trivial compensation agreements from the scope of material contracts. To provide a robustness check, on all the main tests I conduct two sets of regressions, one on the full sample of material contracts and the other on all non-EMP contracts. As shown in the subsequent sections, the inferences are almost identical.

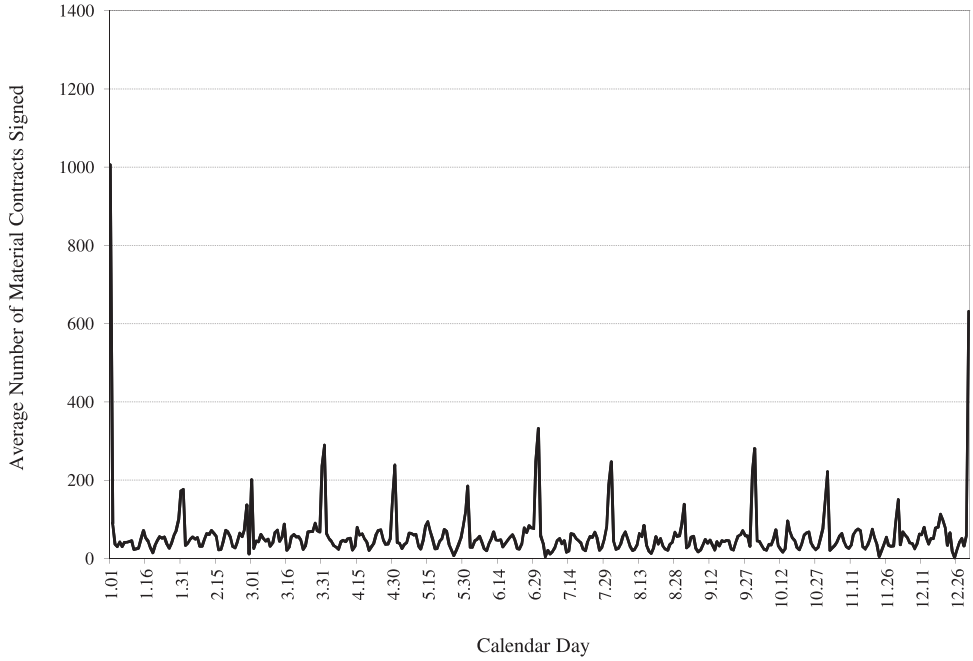
Table 2, Panel A, also shows that in seven out of the eight categories, the MC Values are significantly higher for contracts filed via Form 8-K than for those filed through other SEC reports. The evidence suggests that firms tend to accelerate more important contracts, highlighting the importance of controlling for materiality in the regression analysis. Panels B and C, respectively, present the three-day absolute cumulative abnormal return (|CAR|) around the contract filing date and the event or signing date. As shown in Panel B, |CAR|s on contracts filed via Form 8-K are consistently larger than those on contracts filed via other reports (0.037 versus 0.028). This evidence confirms prior research that 8-K reports filed shortly after event dates have higher market reactions on the filing date than those filed later (Carter and Soo 1999). It also indicates that the percentage of good news contracts, as identified by the sign of the abnormal returns, is significantly higher for the contracts filed via Form 8-K (49.1 percent versus 47.5 percent), providing support for H1a (ii). Panel C shows that |CAR|s over the event date are also higher for contracts filed via Form 8-K, further confirming that more important contracts are filed earlier.

[10] For example, on January 10, 2005, the x-ray equipment maker Hologic, Inc., which had $228.7 million in total assets, filed an executive relocation agreement of $82,000 as a material contract.

FIGURE 1

Distribution of Material Contract Event and Filing Dates over a Typical Calendar Year

Panel A: Distribution of Material Contract Event Dates



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I also investigate the timing of filings on 64,242 material contracts with an event date.[11] Figure 1 provides the calendar time distribution of the event and filing dates. I count the number of contracts for each calendar day and average the daily counts over the three-year period. The inter-temporal averages are plotted in the figures with the calendar dates indicated on the x-axis, so that, for example, the number "1.01" corresponds to January 1. Panel A reveals that the consummation of material contracts occurs somewhat evenly throughout the calendar year except for spikes at the end of each calendar month.[12] In contrast, Panel B shows that the filing dates cluster around the due dates for 10-Ks (i.e., March 15 through March 31) and 10-Qs (May 15, August 14, November 14). This clustering is consistent with regulators' concern that firms delay filing contracts until they have to submit periodic SEC reports.[13]

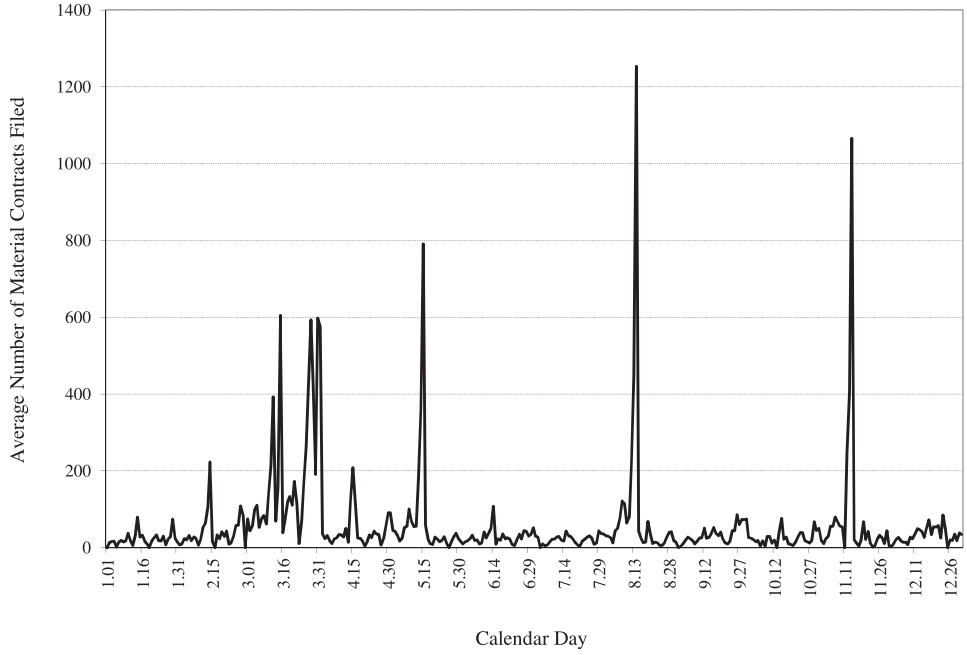
[11] I find that 4,223 (6.2 percent) of the material contracts filed do not have a specific event date. Discussions with a securities lawyer suggest that firms sometimes file undated contracts, especially employment-related ones such as incentive compensation agreements or option grant agreements. Untabulated results show that three out of four of these undated material contracts are related to employment.

[12] The tendency to consummate contracts at the end of the calendar month or year could be driven by compensation-related incentives. Section VI contains a sensitivity test to control for this tendency.

[13] Untabulated results show that the filing dates of material contracts filed via Form 8-K are distributed approximately evenly throughout the calendar year, with some minor clustering around the 8th day of each calendar month, consistent with the finding that the median disclosure lag is eight days for material contracts filed via Form 8-K.

FIGURE 1 (continued)

Panel B: Distribution of Material Contract Filing Dates



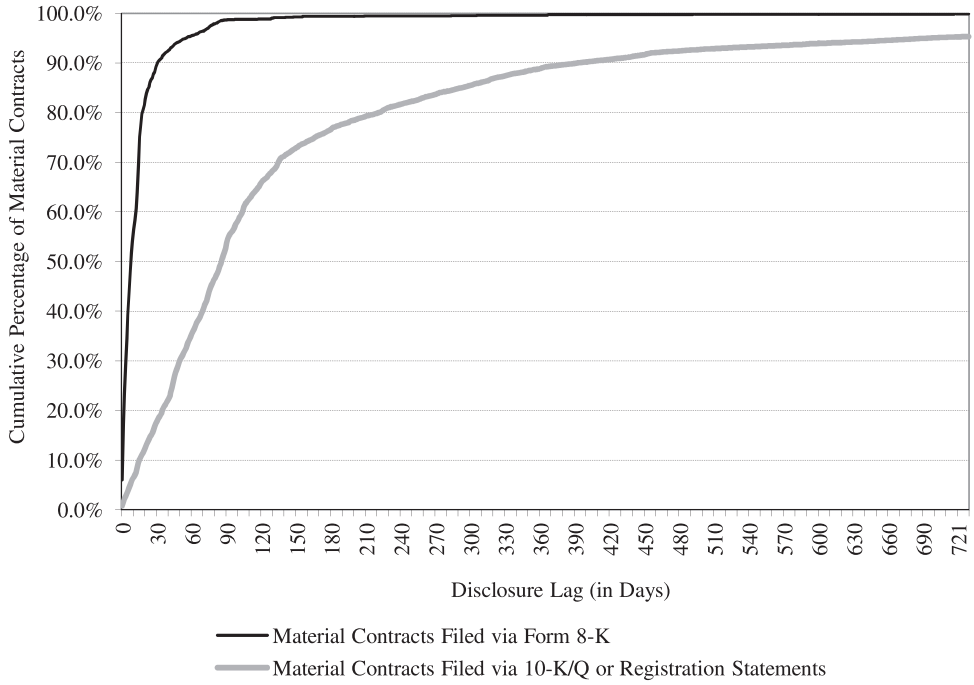
These figures are based on 64,242 material contracts with event dates filed in the period from 2001–2003. Panels A and B present the distribution of material contract event dates and filing dates over a typical calendar year, respectively. Frequencies represent the time-series average number of material contract events or contracts filed per day.

To assess the extent to which Form 8-K filing has helped accelerate material contract disclosures, Figure 2 plots, in black and gray lines respectively, the cumulative distributions of disclosure lags for contracts filed via Form 8-K and those filed through other reports. Disclosure lag is the number of calendar days between the event date and the filing date of a contract. Not surprisingly, the black line converges to 100.0% much more quickly than does the gray line. The median disclosure lags are 8 and 86 days, respectively, for Form 8-K and for other reports. Untabulated parametric and nonparametric tests confirm that Form 8-K is a much more timely filing vehicle than other SEC reports.[14]

As an initial step in examining firms' decisions to accelerate material contracts disclosure through Form 8-K, I present in Table 3, Panel A, a 2×2 frequency distribution of the individual contracts that are filed via Form 8-K *versus* those that are followed by management earnings

[14] I also find that, of the 61,554 non-accelerated contracts, 30,035 are delayed until the next 10-Q or 10-K (when it is signed in the fourth quarter) and 31,519 are delayed beyond that. To incorporate this difference into the analysis, I have estimated on the contract level an ordered probit model where I replace the dependent variable of Model (1) with *ODT* (ordered disclosure timeliness). *ODT* takes the value 3, 2, or 1 if the material contract is filed through Form 8-K, the next 10-K/Q, or beyond the next 10-K/Q, respectively. The median disclosure lags are 8, 51, and 192 days, respectively. An untabulated ordered probit model regression provides inferences that are very consistent with the ordinary probit regression.

FIGURE 2
Cumulative Distribution of the Material Contract Disclosure Lag by Forms of Filing



This figure is based on 64,242 material contracts with event dates filed in the 2001–2003 period. It presents the cumulative distribution of the material contract disclosure lag by two forms of SEC filing (i.e., current reports versus periodic reports or registration statements). Disclosure Lag is the number of calendar days between the material contract event date and the filing date.

forecast(s) within 30 days after the contract event date. Of the 64,242 contracts with an event date, 9.81 percent are filed via Form 8-K without subsequent MFs, while 9.68 percent are followed by an MF without a Form 8-K being filed. The untabulated correlation coefficient between these two choices is -0.044 ($p < 0.0001$). The low incidence in the intersection suggests that firms usually do not use accelerated contract filing and MF as complements. By relaxing the 30-day restriction on MFs, Panel B provides further evidence on the relation between these two disclosure mechanisms. Regardless of the timing of material contracts disclosure, 0.89 (i.e., 0.82 + 0.07) percent of contracts are filed concurrently with the issuance of MFs, indicating that firms usually do not supplement MFs with material contract filing. Taken together, the evidence suggests that firms' disclosure incentives could be different when choosing between these two alternative disclosure routes. I formally test firms' incentives to accelerate material contracts disclosure through Form 8-K in the next section.

V. FIRM CHARACTERISTICS AND CAPITAL MARKET IMPLICATIONS

Descriptive Statistics

Table 4 presents descriptive statistics for all the variables used in the models. The average percentage of material contracts filed through Form 8-K is 8.1 percent. The percentage of firm-years

TABLE 3

Accelerating Material Contracts Disclosure through Form 8-K and Management Earnings Forecasts

Panel A: Timeliness of Material Contracts Disclosure and Management Earnings Forecasts

		The Material Contract Was Filed through Form 8-K	
		No	**Yes**
The Firm Issued Earnings Forecast(s) within 30 Days after the Material Contract Event	No	51,296 (79.85%)	6,299 (9.81%)
	Yes	6,217 (9.68%)	430 (0.67%)

Panel B: Concurrence of Material Contracts Disclosure and Management Earnings Forecasts

		The Material Contract Was Filed through Form 8-K	
		No	**Yes**
The Firm Issued Earnings Forecast(s) on the Same Day as the Material Contract Filing	No	56,987 (88.71%)	6,684 (10.40%)
	Yes	526 (0.82%)	45 (0.07%)

This table is based on 64,242 material contracts with event dates filed in the 2001–2003 period. Panel A (B) presents the two-by-two frequencies of material contracts on two dimensions: whether the firm accelerated the disclosure of the contract through Form 8-K and whether the firm issued at least one earnings forecast within 30 days after the contract event (whether the firm issued at least one earnings forecast on the same day as the filing of the contract). Any earnings pre-announcement (a forecast made after the end of the forecasted period end) is not counted. The number in the parentheses is the percentage of all material contracts.

with a seasoned equity offering, a public debt issuance, and M&A activities are 7.7 percent, 5.4 percent, and 32.3 percent, respectively. Good news comprises 49.4 percent of the sample. The mean estimated probability of lawsuit is 2.3 percent. On average, firms are followed by 4.4 equity analysts. The average industry price-to-cost margin is 1.110 and, by construction, the mean *LowPPE* is about 10 percent. Untabulated statistics reveal that the average industry-weighted average gross PPE is $1,078 million. Nearly 25 percent of the firms operate in intellectual-property-intensive industries. In terms of control variables, about 43 percent of the sample suffered losses. The average unsigned cumulative excess returns surrounding the filing date is 4.7 percent, suggesting a considerable amount of information contained in material contracts. The average monthly share turnover (14 percent) and the average dollar depth ($8,300) are higher than those reported in Verrecchia and Weber (2006) because of their focus on smaller firms. The average *PIN* (0.204) is higher than the 0.182 reported in Brown et al. (2004), reflecting the fact that their sample consists of firms with conference calls, which are supposed to mitigate information asymmetry problems.

Untabulated results show a positive (negative) univariate correlation between *PIN* (*DollarDepth*) and *Percent8K*. While these correlation coefficients are apparently at odds with H2, they are likely because filing-acceleration firms provide fewer forecasts or conference calls and are covered by fewer analysts and institutions. I use a multiple regression analysis to control for these factors.

TABLE 4

Descriptive Statistics

Variables[a]	n	Mean	Std. Dev.	Q1	Median	Q3
Percent8K	10,393	0.081	0.215	0.000	0.000	0.000
MB	10,393	2.765	3.773	0.908	1.639	3.013
EquityIssue	10,393	0.077	0.266	0.000	0.000	0.000
DebtIssue	10,393	0.054	0.225	0.000	0.000	0.000
M&A	10,393	0.323	0.468	0.000	0.000	1.000
ERC	10,393	5.778	12.890	0.000	1.129	5.527
GoodNews	10,393	0.494	0.500	0.000	0.000	1.000
LitRisk	10,393	0.023	0.020	0.010	0.017	0.029
PCMargin	10,393	1.110	0.173	1.026	1.082	1.144
LowPPE	10,393	0.098	0.297	0.000	0.000	0.000
IPIntens	10,393	0.249	0.432	0.000	0.000	0.000
NumAnalyst	10,393	4.405	6.075	0.000	2.000	6.000
InstOwn	10,393	0.377	0.306	0.061	0.362	0.646
ROA	10,393	−0.115	0.379	−0.108	0.012	0.053
Loss	10,393	0.431	0.495	0.000	0.000	1.000
LnMVE	10,393	5.565	2.176	4.019	5.595	7.031
LnNumOwn	10,393	1.262	1.243	0.328	0.854	1.846
LnNumMC	10,393	1.492	0.906	0.693	1.609	2.197
AbsCAR	10,393	0.047	0.047	0.016	0.032	0.060
LnMCV	10,393	0.194	0.390	0.002	0.050	0.198
NumMF	10,393	2.000	3.400	0.000	0.000	3.000
NumCC	10,393	2.500	1.900	0.000	4.000	4.000
InsiderOwn	10,393	0.167	0.235	0.011	0.059	0.227
NYSE	10,393	0.369	0.483	0.000	0.000	1.000
AMEX	10,393	0.079	0.269	0.000	0.000	0.000
LnPrice	10,393	2.175	1.282	1.322	2.396	3.180
%Redact	10,393	0.053	0.160	0.000	0.000	0.000
MonthlyTurnover	10,393	0.140	0.179	0.043	0.087	0.169
PIN	9,971	0.204	0.095	0.135	0.193	0.259
DollarDepth	10,303	83.000	102.300	26.500	49.500	104.400

[a] All variables are defined in Appendix B. *MB*, *ERC*, *InstOwn*, *ROA*, *AbsCAR*, and *InsiderOwn* have been winsorized at the top and bottom 1 percent of their respective distributions.

Characteristics of Firms that Accelerate Material Contract Filings through Form 8-K

The multiple regression tests on the characteristics of firms that accelerate material contract filings are presented in Table 5 with the predicted signs in Column (1). The next two columns report the estimated coefficients and z-statistics from a GLM-based fractional response variable regression on Model (1) for the full sample. The significant results on *MB* (0.007), *EquityIssue* (0.160), and *M&A* (0.155) indicate that firms tend to accelerate contract filings when they have more investment opportunities, seasoned equity offerings, and M&A activities. The evidence is consistent with the H1a (i) prediction that when firms are experiencing significant changes in business that increase forecasting difficulty, they are more likely to choose a disclosure mechanism that involves no forecasts. Given the prior finding that firms with low earnings informativeness avoid earnings forecasts (Lennox and Park 2006), the negative coefficient on *ERC* (−0.003) indicates that when earnings forecasts become less effective, firms tend to take an alternative route. While having the

TABLE 5

Incentives of Accelerating Material Contracts Disclosure through Form 8-K[a]

Variables	Pred. Sign (1)	All MCs (DV = *Percent8K*) Coeff. (2)	(z-stat) (3)	Non-EMP MCs (DV = *Percent8K*) Coeff. (4)	(z-stat) (5)
Intercept		−2.421	(−16.76)***	−2.168	(−13.77)***
MB	+	0.007	(1.69)*	0.010	(2.48)**
EquityIssue	+	0.160	(3.01)***	0.143	(2.77)***
DebtIssue	+	0.120	(1.51)	0.154	(1.77)*
M&A	+	0.155	(4.41)***	0.160	(4.59)***
ERC	−	−0.003	(−1.90)*	−0.002	(−1.54)
GoodNews	+	0.103	(2.41)**	0.093	(2.01)**
LitRisk	+	0.114	(0.10)	−0.435	(−0.35)
*LitRisk * GoodNews*	−	−3.214	(−2.09)**	−3.370	(−2.09)**
NumAnalyst	−	−0.002	(−0.42)	−0.004	(−0.88)
InstOwn	−	−0.174	(−2.23)**	−0.221	(−2.75)***
PCMargin	+	0.336	(3.31)***	0.378	(3.71)***
LowPPE	+	0.162	(3.26)***	0.154	(3.04)***
IPIntens	−	−0.032	(−0.78)	−0.013	(−0.32)
ROA		−0.030	(−0.69)	−0.016	(−0.36)
Loss		0.017	(0.44)	0.018	(0.45)
LnMVE		−0.033	(−2.22)**	−0.052	(−3.50)***
LnNumOwn		−0.009	(−0.56)	−0.024	(−1.32)
LnNumMC		0.104	(5.22)***	0.169	(8.61)***
AbsCAR		1.540	(4.66)***	1.005	(4.00)***
LnMCV_BUS		0.022	(0.36)	0.043	(0.71)
LnMCV_LEA		−0.171	(−2.63)***	−0.155	(−2.49)**
LnMCV_AAD		0.185	(2.16)**	0.161	(1.97)**
LnMCV_EQU		0.134	(2.91)***	0.144	(3.21)***
LnMCV_BSC		0.119	(1.16)	0.135	(1.33)
LnMCV_CRE		0.107	(3.25)***	0.124	(3.74)***
LnMCV_EMP		0.142	(1.94)*		
LnMCV_OTH		0.089	(1.03)	0.140	(1.66)*
%BUS		0.537	(5.14)***	0.190	(1.80)*
%LEA		0.309	(2.48)**		
%AAD		1.432	(11.16)***	0.974	(8.15)***
%EQU		1.823	(22.07)***	1.229	(13.37)***
%BSC		2.150	(7.84)***	1.414	(7.20)***
%CRE		0.732	(11.34)***	0.379	(4.39)***
%OTH		1.029	(6.65)***	0.540	(3.99)***
Pseudo R^2		0.186		0.136	
Number of observations		10,393		8,155	

(continued on next page)

TABLE 5 (continued)

*, **, *** $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively, two-tailed tests. z-statistics have been adjusted for heteroscedasticity and firm-specific clustering in the panel data.
Coefficients and z-statistics on fiscal year indicator variables are suppressed

[a] This table is based on a sample period from 2001–2003. The All MCs and Non-EMP MCs regressions are based on all material contracts and non-employment-related material contracts, respectively. The dependent variables are *Percent8K*, defined as the percentage of material contracts that the firm filed through Form 8-K during the 12-month period ending four months after the end of the fiscal year. All other variables are defined in Appendix B. *MB*, *ERC*, *InstOwn*, *ROA*, and *AbsCAR* have been winsorized at the top and bottom 1 percent of their respective distributions. The GLM-based fractional response variable regressions developed by Papke and Wooldridge (1996) are used to estimate the models. Fiscal year indicator variables are included in both models.

predicted positive sign, the result on *DebtIssue* is not significant. A possible explanation is that information problems in public debt issuance could be better resolved through covenants or indentures. The significant positive coefficient on *GoodNews* (0.103) provides strong support for the H1a (ii) prediction that firms with good news material contracts are more likely to accelerate filings to avoid the inherent high credibility concerns over good news forecasts.[15]

While the coefficient on *LitRisk* is insignificant, the coefficient on the interaction term *LitRisk* ∗ *GoodNews* (−3.214) is significantly negative. This evidence supports H1b (ii), which predicts that due to the asymmetrically higher litigation exposure associated with withholding bad news, firms with high litigation risk are more likely to accelerate the filing of bad news material contracts. The lack of a significant result on good news is largely consistent with prior findings on litigation risk and disclosure (Field et al. 2005; Cao and Narayanamoorthy 2011).

The significant positive coefficient on *PCMargin* (0.336) is consistent with the H1c prediction that firms operating in a product market with higher product substitutability and, hence, strong competition among incumbents are less likely to accelerate contract filings. Both *LowPPE* (0.162) and *IPIntens* (−0.032) have the predicted sign, although the latter is insignificant. This evidence also supports H1c because firms in industries with lower entry costs provide more timely contract filings to discourage potential entrants. Prior empirical studies on disclosure usually treat competition as a single construct, and they appear to consider the predictions from theoretical works on competition and disclosure (e.g., Verrecchia 1990; Darrough and Stoughton 1990) as competing hypotheses (e.g., Verrecchia and Weber 2006; Berger and Hann 2007). However, my results suggest that these seemingly conflicting predictions are not actually in opposition, but instead pertain to different dimensions of competition.

[15] Given that *GoodNews* is based on the market reaction to the filing of material contracts, there could be two concerns. First, the measure can be contaminated if the filing also contains other significant information. While I acknowledge this limitation, I have conducted an untabulated sensitivity test by excluding 2,269 firm years that contain any of the following potentially contaminating scenarios: (1) 8-Ks with multiple items, (2) 10-K/Qs with significant earnings revisions (Hollie et al. 2005), or (3) concurrent earnings releases (Li and Ramesh 2009). Consistent with other concurrent disclosures adding noise to the measure of MC news, I find stronger results on *GoodNews* (0.145 with a t-statistic 2.72) and *LitRisk* ∗ *GoodNews* (−4.772 with a t-statistic −2.60) from the sensitivity regression. Second, managers may not know *ex ante* whether the market will interpret the contract as conveying good news versus bad news. However, given the economic significance of material contracts and the due diligence process before entering contracts, it is unlikely that managers are always uncertain about the sign. Nevertheless, in an untabulated test, I add the interaction between *GoodNews* and *AbsCAR* to the regression and find a significant positive coefficient. With the premise that bigger news makes it easier to predict the direction of market reactions, this analysis indicates that the result for H1a (ii) will be stronger when managers can better predict market responses.

Given the high proprietary costs associated with releasing contract documents, the negative coefficient on *InstOwn* (–0.174) is consistent with the notion that a firm's decision to accelerate contract filing depends critically on the marginal benefits it expects to derive. For firms with a richer information environment, where analysts and institutions work as intermediaries to produce information that decreases information asymmetry, the marginal benefits from making any extra disclosure effort is likely to be minimal (Core 2001; Beyer et al. 2010). While supporting H1d, this result contrasts with the positive association between market participant sophistication and firms' tendency to issue MFs documented by prior research (e.g., Kasznik and Lev 1995; Ajinkya et al. 2005; Graham et al. 2005). The key distinction here is the high disclosure costs associated with accelerated contract filing.

I also find that large firms tend to avoid accelerated contract filings. The positive coefficients on *AbsCAR* and most *LnMCV* variables support the view that firms tend to accelerate contract filings when contracts contain more information (Heitzman et al. 2010). The overall pseudo R^2 is 18.6 percent, indicating a reasonable fit for the model. Due to the arguably low materiality level and proprietary implications of employment-related contracts, I drop these contracts from the sample in a sensitivity test. The last two columns of Table 5 present the results based on the limited sample. The inference is almost identical.

Accelerating Material Contract Filings and Information Asymmetry

Table 6 presents the regression results on the association between accelerated contract filings and information asymmetry captured by the *PIN*, *MonthlyTurnover*, and *DollarDepth* measures. For the first measure, *PIN*, Column (2) shows a significantly negative coefficient on *Percent8K* (–0.110). The result indicates that moving one standard deviation higher in the distribution of *Percent8K* (0.215, see Table 4) is associated with a 2.4 percent reduction in the probability of private-information-based trading. This is economically significant given that the mean value of *PIN* is 20.4 percent. I also find that firms with more management forecasts, more conference calls, bad news, and more redaction in the disclosed contracts are also associated with a lower *PIN*.[16] Given that *NumMF*, *NumCC*, and *%Redact* are endogenous, the results for these variables must be interpreted cautiously.[17] The Anderson canonical correlation statistic is 57.109, indicating that the instrument for *Percent8K* is relevant and well identified. The inferences from the limited sample regression, shown in Column (3), are almost identical.

The results for *MonthlyTurnover* in Column (5) show that firms choosing the timely Form 8-K filing have a greater monthly share turnover (0.350), indicating higher market liquidity. The significant positive coefficient of 218.392 on *Percent8K* from the quoted dollar depth regression in Column (8) also suggests that the willingness of market-makers to trade is higher for filing-acceleration firms. The results on non-EMP contracts in Columns (6) and (9) provide similar

[16] The positive coefficient on *GoodNews* does not suggest that the disclosure of good news contracts increases information asymmetry. On the contrary, both good news and bad news contract disclosures help reduce information asymmetry, although the latter has a relatively larger effect due to its higher disclosure credibility. To show this, in a robustness check I replace *AbsCAR* with two interaction terms, *AbsCAR* $*$ *GoodNews* and *AbsCAR* $*$ (1 – *GoodNews*). I find that (1) while both coefficients are significantly negative, the latter has a slightly higher magnitude than the former, and (2) *GoodNews* becomes insignificant.

[17] Based on a hand-collected sample of 450 small firms, Verrecchia and Weber (2006) find that firms redacting information from material contracts have higher information asymmetry. To reconcile my work with their finding, in an untabulated analysis I literally follow their research design with my own machine-collected contract data; my results closely replicate theirs. This indicates that the negative coefficient on *%Redact* is unlikely to be caused by the differing data-collection methods. One possible explanation is that I have included additional correlated control variables in the model. Another could be that their inference may not be generalized to a broader sample.

TABLE 6

Accelerating Material Contract Filing through Form 8-K and Information Asymmetry[a]

	DV = *PIN*			DV = *MonthlyTurnover*			DV = *DollarDepth*		
Variables	**Pred. Sign (1)**	**All MCs (2)**	**Non-EMP MCs (3)**	**Pred. Sign (4)**	**All MCs (5)**	**Non-EMP MCs (6)**	**Pred. Sign (7)**	**All MCs (8)**	**Non-EMP MCs (9)**
Intercept		0.476	0.473		−0.090	−0.065		−21.206	−30.622
		(19.56)***	(20.71)***		(−4.17)***	(−3.10)***		(−0.80)	(−1.20)
Percent8K	−	−0.110	−0.096	+	0.350	0.464	+	218.392	139.491
		(−2.41)**	(−1.98)**		(2.47)**	(2.51)**		(3.26)***	(2.47)**
NumMF	−	−0.001	−0.001	+	0.002	0.002	+	−0.064	0.032
		(−3.81)***	(−3.46)***		(3.30)***	(2.59)***		(−0.19)	(0.09)
NumCC	−	−0.003	−0.003	+	0.002	0.001	+	−4.787	−4.297
		(−6.69)***	(−5.41)***		(1.16)	(0.56)		(−6.91)***	(−5.99)***
InsiderOwn	+	0.027	0.029	−	−0.058	−0.059	−	−7.533	−9.231
		(7.07)***	(6.94)***		(−6.50)***	(−5.16)***		(−2.16)**	(−2.59)***
NumAnalyst	−	0.000	0.000	+	0.002	0.003	+	3.965	3.879
		(0.52)	(−1.08)		(2.69)***	(3.81)***		(8.40)***	(7.86)***
InstOwn	?	−0.021	−0.016	?	0.062	0.047	?	−34.645	−25.266
		(−5.77)***	(−3.78)***		(5.04)***	(3.03)***		(−5.73)***	(−3.86)***
MB		−0.001	−0.001		0.002	0.002		0.382	0.444
		(−4.20)***	(−3.50)***		(3.66)***	(2.28)**		(1.30)	(1.42)
LnNumMC		−0.001	0.000		0.009	0.005		−0.766	0.042
		(−0.85)	(0.34)		(3.46)***	(1.11)		(−0.57)	(0.03)
LnMVE	−	−0.036	−0.037	+	0.022	0.026	+	28.334	24.673
		(−36.03)***	(−31.62)***		(7.78)***	(6.61)***		(13.82)***	(13.49)***
GoodNews		0.002	0.003		−0.007	−0.014		−2.373	−0.620
		(1.91)*	(2.10)**		(−2.07)**	(−2.78)***		(−1.43)	(−0.34)
%Redact		−0.010	−0.005		0.031	0.018		−14.341	−10.352
		(−1.95)*	(−2.00)**		(2.09)**	(2.08)**		(−2.19)**	(−3.55)***

(continued on next page)

TABLE 6 (continued)

Variables	DV = *PIN*			DV = *MonthlyTurnover*			DV = *DollarDepth*		
	Pred. Sign (1)	All MCs (2)	Non-EMP MCs (3)	Pred. Sign (4)	All MCs (5)	Non-EMP MCs (6)	Pred. Sign (7)	All MCs (8)	Non-EMP MCs (9)
Adjusted R^2		0.617	0.578		0.158	0.098		0.375	0.368
Anderson Canon. Corr. Stat.		57.109***	26.353***		53.658***	27.014***		52.219***	26.543***
Number of observations		9,971	7,806		10,393	8,155		10,303	8,099

*, **, *** $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively, two-tailed tests. t-statistics for the pooled regressions have been adjusted for heteroscedasticity and firm-specific clustering in the panel data.

Coefficients and t-statistics on *NYSE*, *AMEX*, *LnPrice*, *AbsCAR*, MC Value variables (*LnMCV_MCTYPE*), percentage of MC type variables (*%MCTYPE*), fiscal year indicator variables, and industry (two-digit SICCD code) indicator variables are suppressed.

[a] This table is based on a sample period from 2001–2003. The All MCs and Non-EMP MCs regressions are based on all material contracts and non-employment-related material contracts, respectively. All variables are defined in Appendix B. *InsiderOwn*, *InstOwn*, *MB*, and *AbsCAR* have been winsorized at the top and bottom 1 percent of their respective distributions. 2SLS instrumental variable regressions as suggested by Wooldridge (2002) are used to estimate the models. The fitted value of *Percent8K* from the first-stage Model (1) estimated by the maximum likelihood method is used as its own instrumental variable. Industry indicator variables (based on two-digit SICCD code) and fiscal year indicator variables are included in all the models. Anderson Canon. Corr. Stat. is the Anderson canonical correlation statistic for the identification and relevance test on IV.

inferences. An untabulated analysis that runs separate regressions on each of the three sample years shows consistent results across years. Taken together, the findings on all three measures consistently support the H2 prediction that accelerating material contract filings is incrementally associated with a lower level of information asymmetry.[18]

VI. FURTHER ROBUSTNESS CHECKS

Besides the controls and sensitivity tests discussed above, I perform several additional analyses in this section to ensure the robustness of the inferences made in the previous section. Specifically, I entertain various alternative specifications to the model, sample, measures, and unit of observation. My conclusions remain unaffected by these additional tests.

Time-Series Analysis with a Change Model

A common concern with the level regression presented in Table 5 is the omitted correlated variable bias. To address this issue, I conduct an untabulated time-series analysis by running a change regression on Model (1). *ERC* and *IPIntens* are dropped from the model due to their invariability over the sample period. Based on 5,677 firm-years from 2002 and 2003, the change regression provides an inference similar to the level regression, although ΔMB, $\Delta LowPPE$, and $\Delta InstOwn$ become marginally significant and $\Delta GoodNews$ and $\Delta LitRisk * GoodNews$ become insignificant. These weaker results are not surprising considering the generally low test power with change regressions and the reduced sample size.

Subsample of Material Contracts

The high incidence of Form 8-K filing on the Asset Acquisition or Disposition, Equity-Related, and Business Structure Changes categories raises a concern that the association between accelerated contract filing and new securities issuance/M&A activities is just a mechanical relationship due to the regulatory requirements for filing related contracts. For example, Regulation S-K mandates that plans for acquisition, reorganization, liquidation, or succession be filed as exhibits to Form 8-K. However, these plans are different because material contracts are ancillary agreements to these plans, not the plans *per se*. While material contracts are filed under EX-10, these plans are reported under EX-2. Nevertheless, to provide a robustness check, I drop from the sample all contracts in these three categories; I find very similar results.

As shown in Figure 1, Panel A, the tendency to consummate contracts at the end of calendar month can be driven by compensation-related incentives. Therefore, contracts signed at the end of month could drive my results. To test this possibility, I drop all contracts entered around the end of calendar month; the inferences remain unchanged.

Given the arguably limited information content and proprietary cost implications of employment-related contracts, I also conduct a counter-factual regression analysis by limiting the sample to 2,238 firm years with EMP contracts only. Consistent with the expectation, the inference on litigation and competition hypotheses, along with the information asymmetry results, does not hold in this employment-contracts-only sample.

[18] Although more timely disclosure should reduce information asymmetry, it is difficult to establish this causality empirically given a host of endogeneity issues. This is a common pitfall for disclosure research (e.g., Verrecchia and Weber 2006). Nevertheless, I control for endogeneity using the two-stage least square (2SLS) instrumental variable method suggested by Wooldridge (2002). Identification/IV relevance tests consistently show that the model is well identified and the instruments used are relevant. In addition, given the early finding that firms with a richer information environment are less likely to accelerate contract filings, it mitigates the concern of reverse causality whereby firms with lower information asymmetry tend to accelerate contract filings more frequently.

Alternative Measure Specifications

Aside from *Percent8K*, I have also used another measure, *Dummy8K*, to capture firms' tendency to accelerate material contract filing in a more general sense. Specifically, *Dummy8K* is a dichotomous variable that indicates whether the firm has accelerated at least one contract filing via Form 8-K during the year. Untabulated regressions based on this alternative measure yield very similar results on both firm characteristics and information asymmetry models.

While Figure 2 clearly demonstrates that Form 8-K, on average, serves as a much more timely filing vehicle than do other SEC reports, Form 8-K could be a noisy proxy for filing timeliness. As a robustness check, I use an alternative measure *PercentDlag15* to capture the percentage of material contracts that are filed within 15 days after the event. Fifteen days is the third quartile of the distribution of disclosure lag for all material contracts filed via Form 8-K. Untabulated regressions based on this alternative measure do not change the inferences for both firm characteristics and the information asymmetry models. I have also tried several alternative lengths such as 8 days (the median) or 31 days (90 percent percentile) and obtained similar results.

As material contract filings influence stock prices, using *ERC* as a proxy for earnings informativeness has an inherent endogeneity problem. Following Lougee and Marquardt (2004), I also considered two alternative proxies: *Intangible* (intangible assets deflated by total assets) and *SaleGrowth* (annual growth rate of sales). Results on both measures are consistent with the *ERC* result, although I acknowledge that intangible assets from acquisitions made pre- versus post-SFAS No. 141 could not be comparable due to the elimination of the pooling-of-interests method of accounting, and that growth could capture constructs other than earnings informativeness.

In addition, using CARs surrounding the filing date may not fully gauge the information content of contracts. As an alternative, I add the three-day CARs surrounding the event date to those surrounding the filing date so as to derive a more comprehensive six-day proxy for information content. This alternative specification of *AbsCAR* does not change any inference.

Alternative Unit of Observation

One limitation of annual regression is that it collapses contract-level information to a firm-year variable. For example, when there are multiple contracts filed during a year, *LnMCV_MCTYPE*, *GoodNews*, and *AbsCAR* would be the average value over multiple contracts, introducing an identification problem and measurement errors. To address this issue, I conduct two additional sets of regression analyses: one using individual contract and the other using the firm-quarter as the unit of observation. The inferences from the contract regression based on 42,146 material contracts with non-missing *LnMCV* are almost identical to those from the annual regression. In the firm-quarter regression, I restrict the sample to 7,521 quarters in which only one material contract is filed to clearly identify *GoodNews*. The results show inferences similar to the annual regression. In particular, both *GoodNews* and *LitRisk* $*$ *GoodNews* remain significant with the predicted signs. Although some variables lose significance, they are not the focus of this robustness check and primarily occur due to the low test power.

VII. ANALYSIS ON THE POST-REGULATION REGIME

In this section, I extend my analysis to the post-regulation era, when regulatory costs on delayed contract filing rose significantly. Such an extension would not only provide additional tests under a different scenario, but also it would help to quantify the impact of the 2004 Rule. I use a similar procedure to construct a post-regulation sample of 3,420 firms in 2005. Untabulated results show that the median number of contracts per firm increased from five in the pre-regulation era to six in 2005. The percentage of firms accelerating filings of entire contracts via Form 8-K jumped

from 18.2 percent in 2001–2003 to 73.8 percent in 2005, indicating that the 2004 Rule resulted in more "real time issuer disclosures" with material contract filings.

Table 7 provides evidence on the impact of the 2004 Rule on firm characteristics and the information asymmetry association regressions.[19] Similar to the descriptive evidence, Panel A shows a significant increase in the intercept. The magnitude of the coefficients on most of the predicted firm characteristics declines, suggesting that firms trade off increased regulatory costs for other disclosure incentives. In Panel B, the significance on *Percent8K* drops in all three information asymmetry regressions. The evidence indicates a weaker association between accelerated contract filings and information asymmetry in the post-regulation period. The result can be understood in the following ways. First, although 26.2 percent of firms rely on the safe harbor provision of the 2004 Rule to defer the filing of entire contracts until their next 10-K/10-Qs, they have to provide summary information about contracts immediately. This partial disclosure by delayed filers mitigates the effect of accelerated filing. Second, unlike in the pre-regulation regime, many firms are pressed to accelerate contract filings even when the expected marginal benefits are minimal, such as when the information content of contracts is small or when the existing information asymmetry is already low, thereby diluting the effect of accelerated filing. Taken together, the evidence confirms the effectiveness of the 2004 Rule in pushing firms toward more timely Form 8-K filing of material contracts, while simultaneously suggesting that the importance of accelerated contract filing as an alternative voluntary disclosure channel has been significantly reduced after 2004.[20]

VIII. CONCLUSION

The timing of material contract filings has received considerable attention in recent years with the promulgation of SOX Section 409 "Real Time Issue Disclosures" and the ensuing 2004 Rule. Because material contracts contain significant information about future operations, firms can use accelerated contract filing to communicate their prospects to investors. Unlike other future-related disclosure mechanisms such as management forecasts and conference calls, accelerated contract filing has many distinct features, including high disclosure credibility, low litigation exposure, and high proprietary costs for certain contracts.

Based on a comprehensive sample of material contracts filed during the pre-regulation period, I hypothesize and find that firms are more likely to accelerate contract filings when forward-looking disclosures could lack credibility due to either disclosure of good news or high forecasting difficulty. Consistent with litigation concerns, firms speed up contract filing when they face higher litigation risk, especially when there is downside risk due to bad news. I also find that firms with a richer information environment avoid accelerated filing, consistent with these firms being cautious about the potentially high proprietary costs, which could exceed the limited marginal benefits. These results contrast with prior findings that firms issuing management forecasts or holding open conference calls tend to have a richer information environment (Kasznik and Lev 1995; Frankel et al. 1999; Graham et al. 2005), lower investment opportunities, and higher earnings informativeness (Lennox and Park 2006). The evidence indicates that those firms labeled by prior research as being

[19] Specifically, I first estimate the firm characteristics models using the 2005 sample (presented in Columns (2) and (3) in Panel A). Then, I compare the estimated coefficients with those from the pre-regulation sample using a pooled regression with a separate intercept and dummy interactions. The differences are reported in Columns (4) and (5).

[20] In an untabulated analysis, I find that the percentage of firms requesting confidential treatment on material contracts increases significantly from 15.7 percent in 2001–2003 to 21.0 percent in the post-regulation period. This evidence is consistent with the view that some firms were trying to mitigate the negative effect from losing flexibility in timing.

TABLE 7

Analysis on the Post-Regulation Regime[a]

Panel A: Firm Characteristics Model

Variables	Pred. Sign (1)	Post-2004 Rule Coeff. (2)	Post-2004 Rule (Z-stat) (3)	Difference between Post- and Pre-2004 Rule Coeff. (4)	Difference between Post- and Pre-2004 Rule (Z-stat) (5)
Intercept		−0.274	(−2.09)**	2.296	(12.17)***
MB	+	0.001	(0.23)	−0.004	(−0.74)
EquityIssue	+	0.036	(0.61)	−0.130	(−1.66)*
DebtIssue	+	0.018	(0.25)	−0.095	(−0.90)
M&A	+	0.016	(0.45)	−0.140	(−2.88)***
ERC	−	−0.003	(−1.49)	0.001	(0.21)
GoodNews	+	0.016	(0.30)	−0.087	(−1.26)
LitRisk	+	0.492	(0.30)	1.326	(0.65)
*LitRisk * GoodNews*	−	0.767	(0.41)	4.085	(1.70)*
NumAnalyst	−	−0.003	(−0.81)	0.000	(−0.03)
InstOwn	−	0.093	(1.46)	0.258	(2.67)***
PCMargin	+	0.040	(0.54)	−0.311	(−2.51)**
LowPPE	+	−0.002	(−0.04)	−0.163	(−2.20)**
IPIntens	−	−0.018	(−0.46)	−0.001	(−0.02)
ROA		−0.158	(−1.56)	−0.136	(−1.25)
Loss		−0.087	(−1.81)*	−0.107	(−1.76)*
LnMVE		−0.023	(−1.44)	0.000	(−0.01)
LnNumOwn		−0.014	(−0.96)	−0.004	(−0.18)
LnNumMC		0.099	(4.73)***	−0.005	(−0.16)
AbsCAR		−0.485	(−0.85)	−2.025	(−3.09)***
Pseudo R^2		0.069			
Number of observations		3,420			

*, **, *** $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively, two-tailed tests. z-statistics have been adjusted for heteroscedasticity and firm-specific clustering in the panel data. Coefficients and z-statistics on MC Value variables (*LnMCV_MCTYPE*), percentage of MC type variables (*%MCTYPE*), and fiscal year indicator variables are suppressed.

(continued on next page)

TABLE 7 (continued)

Panel B: Information Asymmetry Model

Variables	DV = *PIN* Pred. Sign (1)	Post-2004 Rule Coeff. (2)	Post-2004 Rule (Z-stat) (3)	DV = *MonthlyTurnover* Pred. Sign (4)	Post-2004 Rule Coeff. (5)	Post-2004 Rule (Z-stat) (6)	DV = *DollarDepth* Pred. Sign (7)	Post-2004 Rule Coeff. (8)	Post-2004 Rule (Z-stat) (9)
Intercept		0.499	(8.01)***		−0.072	(−0.89)		−63.029	(−1.50)
Percent8K	−	−0.128	(−1.95)*	+	0.178	(0.88)	+	−160.111	(−1.28)
NumMF	−	0.000	(−0.32)	+	0.000	(0.09)	+	−1.303	(−1.18)
NumCC	−	−0.001	(−1.61)	+	−0.004	(−1.36)	+	−11.290	(−5.78)***
InsiderOwn	+	0.016	(2.31)**	−	−0.047	(−1.52)	−	−11.263	(−0.72)
NumAnalyst	−	−0.001	(−1.92)*	+	0.004	(4.26)***	+	3.940	(2.96)***
InstOwn	?	−0.001	(−0.09)	?	0.044	(1.97)**	?	−49.507	(−2.71)***
MB		−0.001	(−1.98)**		0.001	(0.89)		1.415	(0.71)
LnNumMC		0.004	(1.39)		0.003	(0.38)		15.924	(2.18)**
LnMVE	−	−0.025	(−14.34)***	+	−0.006	(−1.02)	+	45.185	(8.21)***
GoodNews		0.001	(0.43)		−0.017	(−2.15)**		0.309	(0.06)
%Redact		−0.037	(−1.75)*		0.099	(1.49)		−51.018	(−1.40)
Adjusted R2		0.506			0.119			0.268	
Anderson Canon. Corr. Stat.		9.900***			12.874***			12.323***	
Number of observations		3,266			3,420			3,317	

*, **, *** $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively, two-tailed tests. z-statistics have been adjusted for heteroscedasticity and firm-specific clustering in the panel data. Coefficients and t-statistics on *NYSE*, *AMEX*, *LnPrice*, *AbsCAR*, MC Value variables (*LnMCV_MCTYPE*), percentage of MC type variables (*%MCTYPE*), fiscal year indicator variables, and industry (two-digit SICCD code) indicator variables are suppressed.

[a] This table is based on a post-regulation sample period (2005). All other variables are defined in Appendix B. *MB*, *ERC*, *InstOwn*, *ROA*, *AbsCAR*, and *InsiderOwn* have been winsorized at the top and bottom 1 percent of their respective distributions. In Panel A, the GLM-based fractional response variable regressions developed by Papke and Wooldridge (1996) are used to estimate the models. Fiscal year indicator variables are included in both models. The differences between the post- and pre-2004 Rule are tested using a pooled regression with both post- and pre-regulation periods in a model with full levels and interactions (i.e., interaction with an indicator variable for post-regulation). In Panel B, 2SLS instrumental variable regressions as suggested by Wooldridge (2002) are used to estimate the models. The fitted value of *Percent8K* from the first-stage Model (1) estimated by the maximum likelihood method is used as its own instrumental variable. Industry indicator variables (based on two-digit SICCD code) and fiscal year indicator variables are included in all the models. Anderson Canon. Corr. Stat. is the Anderson canonical correlation statistic for the identification and relevance test on IV.

"less forthcoming" in disclosure (e.g., Lang and Lundholm 1993; Frankel et al. 1999) are not simply silent about their future operations. Instead, such firms tend to reveal their future prospects using an alternative disclosure mechanism that involves no forecasting.

In addition, I show that firms tend to accelerate material contract filings when they operate in industries with lower (higher) competition from incumbents (potential entrants). This evidence highlights the multi-dimensional nature of product market competition and lends support to *both* Verrecchia (1990) and Darrough and Stoughton (1990), two studies that are often pitted against each other as presenting competing hypotheses on proprietary information disclosure. Finally, from a consequences standpoint, my evidence indicates that accelerated filing of material contracts is incrementally associated with lower information asymmetry.

Overall, the evidence demonstrates that, while being distinctly different from other well-documented forward-looking disclosures, accelerated filing of material contracts is an important alternative disclosure mechanism that firms use to communicate future prospects to investors. As such, I view this evidence as introducing a potentially useful setting for disclosure research.

Two caveats are in order. First, material contracts are not homogeneous. While I have considered several measures of information content and the various categories of material contracts in my analyses, it is difficult to identify, measure, and control for all dimensions of heterogeneity. Future work can explore this issue more thoroughly. Second, firms seeking to provide information on material contracts can use disclosure channels other than SEC reports. Conversations with a securities lawyer and a manual check on a random sample of 100 material contracts filed during 2001–2003 reveal that although firms sometimes provide a condensed summary of material contracts through a press release, the disclosure of the entire contract is made *only* through the SEC filings. The manual check also reveals that when firms choose to delay contract filings, they do not pre-disclose such information via a press release. Regardless, any limited pre-disclosures would create bias against the findings of lower information asymmetry associated with Form 8-K contract filing. However, the interplay between the SEC filings and press releases and the information dissemination process for material contract disclosure more generally could be an interesting topic for future research.

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APPENDIX A

An Example of Material Contract

Excerpts from EX-10.1 License Agreement in the Form 8-K Report filed by Sontra Medical Corporation on July 30, 2003:[21]

LICENSE AGREEMENT (DATED AS OF JULY 28, 2003)

THIS AGREEMENT shall be effective on the last date of execution hereof and is by and between Sontra Medical Corporation, a Minnesota corporation having a principal place of business at 10 Forge Parkway, Franklin, MA 02038 (herein referred to as "LICENSOR"); and Bayer Healthcare LLC, a Delaware Limited Liability Company, acting through its Diagnostics Division and having a principal place of business at 511 Benedict Avenue, Tarrytown, New York 10591, USA (herein referred to as "BAYER").

[21] The text in the license agreement between "1.2 Patent Rights" and "3.1 Payment of License Fee" and that between "3.1 Payment of License Fee" and "i) BAYER shall enter into . . . " is not shown

WHEREAS, LICENSOR owns certain patent rights and possesses certain know-how relating to the transdermal collection of analytes by ultrasonic techniques;

WHEREAS, BAYER desires to be granted a worldwide right and license under such patent rights and know-how to develop and commercialize products and processes; and

WHEREAS, LICENSOR is willing to grant such a right and license under the terms hereof;

NOW, THEREFORE, in consideration of the mutual promises herein, the parties agree as follows:

ARTICLE 1

DEFINITIONS

1.1 "Test" shall mean a commercially viable system for the determination of glucose concentration in body fluid which glucose is obtained using ultrasonic techniques.

1.2 "Patent Rights" shall mean any and all patent applications and granted patents anywhere in the world which now or hereafter are owned or controlled by LICENSOR, which are listed in Exhibit A

3.1 *Payment of License Fee*—In consideration for the license granted hereunder, BAYER shall pay LICENSOR a non-refundable licensing fee of One Million Five Hundred Thousand U.S. Dollars ($1,500,000) no later than January 15, 2004 provided that LICENSOR satisfies each of the following conditions prior to such date: (a) LICENSOR is granted an exception by the Nasdaq Listing Qualifications Panel from the Nasdaq SmallCap Market's minimum $2.5 million stockholders' equity continued listing requirement as a result of a Nasdaq delisting panel hearing scheduled for the end of July, 2003 in connection with a delisting notice Sontra received on June 18, 2003;

i) BAYER shall enter into one or more agreements ("the Joint Development Agreement(s)") with LICENSOR to jointly continue development of the Licensed Product or Process through completion of Phase 3 (BAYER and LICENSOR will complete a work plan during Phase 3 that will validate the final design and manufacturing procedures as well as conducting the pivotal clinical trials required for regulatory approval) of the BAYER PACE process, and make a $3,000,000 milestone payment at the end of Phase 1 (as defined by the BAYER PACE process) to LICENSOR in addition to the non-refundable $1,500,000 license fee.

APPENDIX B

Variable Definitions

Percent8K = percentage of material contracts that the firm filed through Form 8-K during the 12-month period ending four months after the end of the fiscal year;

MB = market-to-book ratio at the beginning of the current fiscal year. It is calculated as the market value of equity (*PRCC_F* $*$ *CSHO*) divided by the book value of shareholder equity (*CEQ*) ;

EquityIssue = a dummy variable that takes on the value 1 if the firm issued equity during the 12-month period ending four months after the end of the fiscal year as reported on SDC, 0 otherwise;

DebtIssue = a dummy variable that takes on the value 1 if the firm issued public debt during the 12-month period ending four months after the end of the fiscal year as reported on SDC, 0 otherwise;

M&A = a dummy variable that takes on the value 1 if the firm engaged in mergers and acquisitions during the 12-month period ending four months after the end of the fiscal year as reported on SDC, 0 otherwise;

ERC = sum of the estimated coefficients $(\hat{\alpha}_1 + \hat{\alpha}_2)$ from the regression:

$$ABRET_t = \alpha_0 + \alpha_1 EARN_t + \alpha_2 \Delta EARN_t + \varepsilon_t$$

over the 20 quarters prior to the beginning of the current fiscal year, where:

ABRET = measured as the difference between the buy-and-hold return of the firm and that of the CRSP value-weighted market index over a window spanning two trading days after the prior quarter's earnings release date to one trading day after the current quarter's earnings release date;

EARN = quarterly earnings before extraordinary items (*IBQ*) deflated by market capitalization as of the beginning of the current quarter; and

$\Delta EARN$ = seasonally differenced quarterly earnings before extraordinary items deflated by market capitalization as of the beginning of the current quarter. This is the model suggested by Easton and Harris (1991);[22]

GoodNews = a dummy variable that takes on the value of 1 if the average cumulative excess returns over the three-day period [−1,+1] around the filing date of material contracts is positive, 0 otherwise. The excess return is calculated as the difference between the raw return and the CRSP value-weighted market return;

LitRisk = a measure of securities class action litigation risk estimated from the model suggested by Kim and Skinner (2012). Specifically, I estimate a probit regression over my sample period on the following model:

$$Sued_t = \beta_0 + \beta_1 FPS_t + \beta_2 LnAssets_{t-1} + \beta_3 SalesGrowth_{t-1} + \beta_4 Return_{t-1} + \beta_5 ReturnSkewness_{t-1} + \beta_6 ReturnStd_{t-1} + \beta_7 Turnover_{t-1} + \varepsilon,$$

where:

Sued = a dummy variable that takes on the value 1 if a class action lawsuit was filed against the firm during the fiscal year. Lawsuits are retrieved from the Stanford Litigation Database; any IPO, mutual fund, or analyst-related cases are excluded;

FPS = a dummy variable that takes on the value 1 if the firm is in the biotech, computer, electronics, or retail industry;

LnAssets = natural logarithm of total assets;

SalesGrowth = change in annual sales deflated by lagged total assets;

Return = market-adjusted annual return;

ReturnSkewness = skewness of the firm's 12-month returns;

ReturnStd = standard deviation of the firm's 12-month returns;

Turnover = annual trading volume deflated by beginning of the year shares outstanding; and

LitRisk is the predicted value from the probit regression;

[22] Using the CRSP equally weighted market index yields similar results. Earnings release is defined as either a press release or a periodic SEC filing through which earnings information is released to the public for the first time. I use the earnings release date rather than the earnings press release date because, subsequent to the calendar year 1999, Compustat would have included the SEC filing date as the "earnings announcement" date (*RDQ*) for firms that did not issue a press release or that issued a press release after the SEC filing date. See Li and Ramesh (2009) for details. Following Lougee and Marquardt (2004), I also tested a model without the level term, *EARN*, as a robustness check and found similar results.

NumAnalyst = number of equity analysts covering the firm as reported on I/B/E/S in the month immediately preceding the current fiscal year (if a firm is not covered by I/B/E/S, this is set to 0);

InstOwn = percent of shares held by institutions as reported on Spectrum by the end of the calendar quarter immediately preceding the current fiscal year (if a firm is not covered by Spectrum, this is set to 0);

PCMargin = measured as the aggregated sales (*SALE*) divided by the aggregated operating costs (including cost of goods sold (*COGS*), selling, general, and administrative expenses (*XSGA*), and depreciation, depletion, and amortization (*DP*)) in a particular industry (four-digit SICCD code) for the fiscal year;

LowPPE = a dummy variable that takes on the value 1 if the industry-average *PPE* is in the lowest decile of the distribution, 0 otherwise. Industry-average *PPE* is measured as the weighted average gross value of the cost of property, plant, and equipment (*PPEGT*) for a particular industry (four-digit SICCD code), weighted by each firm's market share (identified by sales) for the fiscal year;

IPIntens = a dummy variable indicating membership in those industries that are likely to have a high intellectual property investment—the CRSP standard industrial classification code (SICCD) at the end of the fiscal year is 2833–2836 (Pharmaceuticals), 8731–8734 (R&D Service), 7371–7379 (Programming), 3570–3577 (Computers), 3600–3674 (Electronics), or 3810–3845 (Precise Measurement Instruments), 0 otherwise.

ROA = net income (*NI*) deflated by the average of the beginning and ending total assets (*AT*) of the fiscal year;

Loss = a dummy variable that takes on the value 1 if a firm had a loss for the fiscal year (negative *NI*), 0 otherwise;

LnMVE = natural logarithm of the firm's market value of equity at the end of the calendar year ending during the fiscal year (*PRCC_C* $*$ *CSHO*);

LnNumMC = natural logarithm of the total number of material contracts filed by the firm within the 12-month window ending four months after the fiscal year-end;

LnNumOwn = natural logarithm of 1 plus the number of shareholders for the fiscal year (*CSHR*);

AbsCAR = average absolute value of the cumulative excess returns over the three-day period [−1,+1] around the filing date of material contracts. The excess return is calculated as the difference between the raw return and the CRSP value-weighted market return;

LnMCV = natural logarithm of 1 plus the material contract value measure (*MCV*), where *MCV* is the largest dollar value reported in the material contract deflated by revenue (*SALE*) of the year;

LnMCV_MCTYPE = average *LnMCV* of all material contracts filed during the year that belong to a specific contract type (i.e., BUS, LEA, AAD, EQU, BSC, CRE, EMP, or OTH). If no contracts of a specific type are filed or no dollar value is reported by the contract, then this variable is set to 0;

%MCTYPE = percentage variable for each of the eight contract types (i.e., BUS, LEA, AAD, EQU, BSC, CRE, EMP, or OTH), calculated as the proportion of all material contracts filed during the year that belong to a specific category;

PIN = calculated as the average of the four calendar-quarter Probability of Informed Trade measures downloaded from the website of Stephen Brown, who calculated *PIN* according to the Easley et al. (1997) microstructure model. The four calendar quarters are identified as the calendar quarters that begin during the 12-month period ending four months after the end of the fiscal year;

MonthlyTurnover = measured as the mean monthly trading volume deflated by the total shares outstanding during the 12-month period ending four months after the end of the fiscal year;

DollarDepth = measured using the TAQ quote files by keeping only the quotes that meet all of the following criteria: (1) quotes that appeared on the NYSE, AMEX, or NASDAQ (*EX* = "A," "N," or "T"); (2) quotes that were made under normal market conditions (*MODE* = 12); (3) quotes that were made within the normal trading hours (09:30:00 $\leq$ *TIME* $\leq$ 16:00:00); (4) quotes that were not aggregated (*NMID* is not "AA," "AI," "IA," or "II"); (5) the ask price was strictly higher than bid price; (6) the bid price was positive; (7) the relative spread, calculated as (ask price $-$ bid price)/[(ask price $+$ bid price)/2], was not higher than 20 percent. I first calculate the dollar depth of each quote as (*BID* $*$ *BIDSIZ* $+$ *OFR* $*$ *OFRSIZ*)/2 and get the daily median dollar depth as the median value of the dollar depths of all valid quotes within each firm/trading day. The final *DollarDepth* variable is the average of the daily median dollar depths during the 12-month period ending four months after the end of the fiscal year;

NumMF = total number of management earnings forecasts issued by the firm during the 12-month period ending four months after the end of the fiscal year, as reported on First Call Company-Issued Guidance. Any earnings pre-announcement (a forecast made after the end of the forecasted period) is not counted;

NumCC = total number of earnings conference calls held by the firm during the 12-month period ending four months after the end of the fiscal year;

InsiderOwn = percent of shares held by insiders (direct and indirect holdings by all directors, officers, and other top executives), as reported on the TFN Insider Filing database by the end of the calendar quarter immediately preceding the current fiscal year;

NYSE = a dummy variable that takes on the value 1 if the firm is traded on NYSE at the end of the fiscal year, 0 otherwise;

AMEX = a dummy variable that takes on the value 1 if the firm is traded on AMEX at the end of the fiscal year, 0 otherwise;

LnPrice = natural logarithm of the median price per share for the 12-month period ending four months after the end of the fiscal year; and

%Redact = percentage of material contracts for which the firm filed a request for confidential treatment during the 12-month period ending four months after the end of the fiscal year.