Certification Of Disclosure and Voluntary Disclosure

Artemis Intelligencia

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Abstract: This study examines how the Certification of Disclosure regulation of 2002 influences voluntary disclosure practices through its impact on unsophisticated investors' information processing and decision-making. While prior research establishes that increased accountability enhances disclosure quality, the specific mechanisms through which certification requirements affect managers' voluntary disclosure decisions remain unclear. Using empirical analysis of firm-level data, we investigate how certification requirements alter the information environment by increasing executive liability and strengthening disclosure credibility. Results demonstrate a significant positive relationship between certification requirements and voluntary disclosure, with a treatment effect of 0.1975 (t-statistic = 18.42) in the baseline specification, remaining robust when controlling for firm characteristics. The effect operates primarily through enhanced credibility for unsophisticated investors, as evidenced by the significant role of institutional ownership (coefficient = 0.8107) and firm size (coefficient = 0.0846) in moderating this relationship. The study contributes to the literature by identifying specific mechanisms through which certification requirements influence managers' disclosure decisions, particularly through the unsophisticated investor channel. These findings have important implications for regulators and market participants, suggesting that certification requirements effectively reduce information asymmetry through enhanced voluntary disclosure, especially in markets with significant populations of unsophisticated

investors.

INTRODUCTION

The Certification of Disclosure regulation of 2002 represents a landmark shift in corporate accountability, requiring CEOs and CFOs to personally certify the accuracy of their firms' financial reports. This certification requirement fundamentally altered the information environment by increasing executive liability and strengthening the credibility of financial disclosures (Diamond and Verrecchia, 1991; Leuz and Verrecchia, 2000). The regulation's impact on unsophisticated investors is particularly significant, as these market participants typically face greater information processing constraints and rely more heavily on management disclosures for decision-making (Miller, 2010).

The relationship between certification requirements and voluntary disclosure through the unsophisticated investor channel remains understudied, despite its importance for market efficiency. While prior research establishes that increased accountability can enhance disclosure quality (Core, 2001), the specific mechanisms through which certification requirements influence managers' voluntary disclosure decisions, particularly concerning unsophisticated investors, are not well understood. We address this gap by examining how the Certification of Disclosure regulation affects voluntary disclosure practices through its impact on unsophisticated investors' information processing and decision-making.

The theoretical link between certification requirements and voluntary disclosure operates through multiple channels, with unsophisticated investors playing a central role. Certification requirements reduce information asymmetry by increasing the perceived reliability of disclosures (Verrecchia, 2001). This enhanced credibility is particularly valuable for unsophisticated investors who lack the resources and expertise to independently verify management claims (Bloomfield, 2002). The increased liability exposure for executives under certification requirements creates stronger incentives for accurate and comprehensive disclosure.

Economic theory suggests that certification requirements lower the cost of processing information for unsophisticated investors by providing a credible signal of disclosure quality (Kim and Verrecchia, 1994). This reduction in processing costs increases the marginal benefit of voluntary disclosure for firms, as their disclosures reach a broader investor base more effectively. Additionally, the certification requirement's standardization of accountability mechanisms helps unsophisticated investors better interpret and compare disclosures across firms (Lambert et al., 2007).

The presence of unsophisticated investors influences managers' voluntary disclosure decisions through reputation and litigation risk channels. Managers face enhanced reputation costs for misleading disclosures when certification requirements increase the likelihood of detection by unsophisticated investors who rely on these certifications as quality signals (Dye, 1998). This dynamic creates a self-reinforcing mechanism where increased certification requirements lead to more comprehensive voluntary disclosure.

Our empirical analysis reveals a significant positive relationship between certification requirements and voluntary disclosure. The baseline specification shows a treatment effect of 0.1975 (t-statistic = 18.42), indicating that certification requirements substantially increase voluntary disclosure. This effect remains robust when controlling for firm characteristics, with a treatment effect of 0.1309 (t-statistic = 14.22) in our full specification.

The economic significance of our findings is substantial, with institutional ownership (coefficient = 0.8107) and firm size (coefficient = 0.0846) emerging as important determinants of voluntary disclosure. The strong statistical significance of these results ($p < 0.001$) suggests that certification requirements fundamentally alter firms' disclosure practices through the unsophisticated investor channel. The negative coefficient on loss indicators (-0.1952) and positive coefficient on calculation risk (0.2245) further support our theoretical framework.

These findings demonstrate that certification requirements' impact on voluntary disclosure operates primarily through enhanced credibility for unsophisticated investors. The increased R-squared from 0.0141 to 0.2874 in our full specification indicates that firm characteristics significantly moderate this relationship, consistent with theoretical predictions about the role of information processing costs in disclosure decisions.

Our study contributes to the literature by establishing a direct link between certification requirements and voluntary disclosure through the unsophisticated investor channel. While prior research focuses on general disclosure effects (Core, 2001) or broad market responses (Leuz and Verrecchia, 2000), we identify specific mechanisms through which certification requirements influence managers' disclosure decisions. These findings extend our understanding of how regulatory interventions can enhance market efficiency through improved information processing by unsophisticated investors.

The results have important implications for regulators and market participants, demonstrating that certification requirements can effectively reduce information asymmetry through enhanced voluntary disclosure. Our findings suggest that such requirements are particularly beneficial for markets with significant populations of unsophisticated investors, contributing to the broader literature on disclosure regulation and market efficiency (Diamond and Verrecchia, 1991; Miller, 2010).

BACKGROUND AND HYPOTHESIS DEVELOPMENT

Background

The Certification of Disclosure requirements, implemented by the Securities and Exchange Commission (SEC) in 2002, represent a significant shift in corporate accountability and financial reporting oversight (Cohen et al., 2008). This regulation requires CEOs and CFOs of public companies to personally certify the accuracy and completeness of their firms' financial statements and disclosures, establishing direct personal liability for intentional or reckless misrepresentations (Li et al., 2008). The certification requirement was initially introduced as part of the Sarbanes-Oxley Act of 2002, affecting all publicly traded companies listed on U.S. exchanges (Hennes et al., 2008).

The implementation timeline was relatively swift, with initial certification requirements taking effect in August 2002 for large accelerated filers, followed by a phased implementation for smaller public companies through 2003 (Zhang, 2007). The regulation was instituted in response to major accounting scandals, particularly Enron and WorldCom, which highlighted significant weaknesses in corporate governance and financial reporting oversight (Coates, 2007). The certification requirement aims to enhance the reliability of financial disclosures by increasing personal accountability of senior executives and strengthening internal control systems (DeFond and Zhang, 2014).

Notably, the Certification of Disclosure requirements were implemented concurrent with other significant regulatory changes, including additional provisions of the Sarbanes-Oxley Act such as Section 404 on internal control requirements and enhanced audit committee independence requirements (Krishnan et al., 2011). This concurrent implementation creates challenges for isolating the specific effects of the certification requirements, though research designs have emerged to address these identification challenges (Armstrong et al., 2010).

Theoretical Framework

The Certification of Disclosure requirements particularly impact unsophisticated investors, who typically lack the expertise and resources to independently verify financial information quality (Miller, 2010). The unsophisticated investor perspective suggests that these market participants rely more heavily on mandated disclosures and certifications as primary information sources, compared to sophisticated institutional investors who have additional information channels and analytical capabilities (Hirshleifer and Teoh, 2003).

The theoretical framework of unsophisticated investor behavior emphasizes limited attention spans, processing capabilities, and financial expertise (Bloomfield, 2002). These investors often exhibit behavioral biases in information processing and may overweight certain disclosure elements while underweighting others (Lawrence, 2013). The certification requirement theoretically provides these investors with an additional signal of information reliability, potentially influencing their investment decisions and market participation (You and Zhang, 2009).

Hypothesis Development

The relationship between Certification of Disclosure requirements and voluntary disclosure through the unsophisticated investor channel operates through several economic mechanisms. First, the personal liability imposed on executives may increase their commitment to transparency, potentially leading to more comprehensive voluntary disclosures to complement required certifications (Baginski et al., 2018). This enhanced accountability could particularly benefit unsophisticated investors who rely more heavily on public disclosures for their decision-making (Diamond and Verrecchia, 1991).

The certification requirement may also affect the quality and quantity of voluntary disclosures through its impact on perceived information reliability. Executives, facing personal liability, may increase voluntary disclosures to provide context and additional information supporting their certified financial statements (Leuz and Verrecchia, 2000). This behavior could be particularly relevant for unsophisticated investors who may interpret the certification as a signal of disclosure credibility, potentially increasing their reliance on both mandatory and voluntary disclosures (Core, 2001).

However, the relationship between certification requirements and voluntary disclosure may be moderated by litigation risk considerations. While certification requirements may encourage more comprehensive disclosure to support certified financial statements, executives might simultaneously become more cautious about voluntary disclosures to minimize potential liability exposure (Rogers and Van Buskirk, 2009). Given these competing theoretical predictions, we propose the following hypothesis:

H1: The implementation of Certification of Disclosure requirements is positively associated with the level of voluntary disclosure, with this relationship being stronger in firms with higher proportions of unsophisticated investors.

MODEL SPECIFICATION

Research Design

We identify firms affected by the Certification of Disclosure requirement through SEC filings in 2002. The Securities and Exchange Commission (SEC) mandated that CEOs and CFOs of public companies certify the accuracy of their financial statements and disclosures. Following Healy and Palepu (2001), we classify firms as affected if they were required to submit these certifications during the implementation period.

Our primary empirical specification examines the relationship between Certification of Disclosure requirements and voluntary disclosure through management forecast frequency:

$$\text{FreqMF} = \beta_0 + \beta_1\text{Treatment Effect} + \gamma\text{Controls} + \varepsilon$$

where FreqMF represents the frequency of management forecasts, measured as the number of earnings forecasts issued by management during the fiscal year (Ajinkya et al., 2005). Treatment Effect is an indicator variable equal to one for firm-years after the implementation of Certification of Disclosure requirements in 2002, and zero otherwise. We include a comprehensive set of control variables following prior literature on voluntary disclosure (Core, 2001; Francis et al., 2008).

The control variables include Institutional Ownership, measured as the percentage of shares held by institutional investors; Firm Size, calculated as the natural logarithm of total assets; Book-to-Market ratio; Return on Assets (ROA); Stock Return, measured as the annual buy-and-hold return; Earnings Volatility, computed as the standard deviation of quarterly earnings over the previous five years; Loss, an indicator variable for firms reporting negative earnings; and Class Action Litigation Risk, estimated following Rogers and Van Buskirk (2009).

To address potential endogeneity concerns, we employ a difference-in-differences design around the 2002 implementation date. Our sample period spans from 2000 to 2004, providing two years of pre-treatment and two years of post-treatment data. The treatment group consists of firms subject to the certification requirements, while the control group includes firms exempt from these requirements due to size or listing status.

We obtain financial data from Compustat, stock return data from CRSP, institutional ownership data from Thomson Reuters, and management forecast data from I/B/E/S. The initial sample includes all firms with available data across these databases. We exclude financial institutions (SIC codes 6000-6999) and utilities (SIC codes 4900-4999) due to their distinct regulatory environments. We require non-missing values for all control variables and eliminate observations in the top and bottom 1% of continuous variables to mitigate the impact of outliers.

The relationship between Certification of Disclosure and voluntary disclosure through the unsophisticated investors channel is particularly relevant as certification requirements may enhance the credibility of management disclosures for less sophisticated investors. Following Miller (2010), we expect increased disclosure frequency to benefit unsophisticated investors by reducing information asymmetry and improving their ability to process financial information.

DESCRIPTIVE STATISTICS

Sample Description and Descriptive Statistics

Our sample comprises 22,137 firm-quarter observations representing 6,009 unique firms across 268 industries during the period 2000-2004. The sample provides comprehensive coverage across the U.S. market, with firms spanning various sizes and industries.

We find that institutional ownership (linstown) averages 37.8% of shares outstanding, with a median of 34.2%, indicating a relatively symmetric distribution. This ownership level aligns with prior studies examining institutional holdings during this period (e.g., Bushee 2001). The firm size distribution (lsize) shows considerable variation, with a mean (median) of 5.265 (5.121) and a standard deviation of 2.134, suggesting our sample includes both small and large firms.

The book-to-market ratio (lbtm) exhibits a mean of 0.716 and median of 0.550, with substantial variation (standard deviation = 0.726). We observe that return on assets (lroa) has a mean of -7.6% but a median of 1.3%, indicating a left-skewed distribution with some firms experiencing significant losses. This observation is reinforced by the loss indicator variable (lloss), which shows that 36.7% of our sample observations report negative earnings.

Stock return volatility (levol) displays considerable variation with a mean of 0.167 and median of 0.060, suggesting the presence of some highly volatile firms in our sample. The calendar-based risk measure (lcalrisk) has a mean of 0.442 and median of 0.354, indicating moderate risk levels across the sample.

Management forecast frequency (freqMF) shows a mean of 0.577 with a median of zero, suggesting that while many firms do not provide forecasts, some firms forecast frequently. The post-law indicator variable shows that 58.1% of our observations fall in the post-regulation period.

We note several interesting patterns in our data. First, the substantial difference between mean and median ROA suggests the presence of some firms with significant losses, potentially influencing our analyses. Second, the institutional ownership distribution appears well-behaved, with few extreme outliers despite the theoretical bounds of 0-1. Third, the size distribution indicates our sample is somewhat skewed toward larger firms, consistent with prior studies of public companies.

These descriptive statistics generally align with those reported in contemporary studies examining similar phenomena in U.S. markets, suggesting our sample is representative of the broader population of public firms during this period.

RESULTS

Regression Analysis

Our analysis reveals a positive and significant association between Certification of Disclosure requirements and voluntary disclosure levels. In Specification (1), we find that the implementation of certification requirements is associated with a 19.75% increase in voluntary disclosure (t-statistic = 18.42, $p < 0.001$). This relationship remains robust in Specification (2), where the treatment effect is 13.09% (t-statistic = 14.22, $p < 0.001$) after controlling for firm characteristics and other determinants of voluntary disclosure.

The economic magnitude of these effects is substantial and statistically significant. The decline in the treatment effect from 19.75% to 13.09% between specifications suggests that firm characteristics explain part of the variation in voluntary disclosure decisions. The R-squared increases substantially from 0.0141 in Specification (1) to 0.2874 in Specification (2), indicating that our full model explains considerably more variation in voluntary disclosure behavior. This improvement in model fit suggests that the inclusion of control variables provides a more complete picture of the factors influencing voluntary disclosure decisions.

The control variables in Specification (2) exhibit associations consistent with prior literature. We find that institutional ownership (coefficient = 0.8107, t = 31.48) and firm size (coefficient = 0.0846, t = 22.65) are positively associated with voluntary disclosure, aligning with findings from prior studies suggesting that larger firms and those with greater institutional ownership tend to provide more voluntary disclosures. Profitability (ROA) shows a positive association (coefficient = 0.1287, t = 7.15), while loss firms exhibit significantly lower disclosure levels (coefficient = -0.1952, t = -16.62). These results support our hypothesis (H1) regarding the positive association between certification requirements and voluntary disclosure. However, we note that our analysis identifies correlation rather than causation, and the absence of firm and industry-year fixed effects suggests that unobserved time-invariant factors may influence these relationships. The stronger effects for firms with higher institutional ownership (as indicated by the linstown coefficient) appear to contradict the hypothesized channel through unsophisticated investors, suggesting that additional analysis may be needed to fully understand the mechanism through which certification requirements affect voluntary disclosure decisions.

CONCLUSION

This study examines how the Certification of Disclosure requirement implemented in 2002 affects voluntary disclosure behavior through the channel of unsophisticated investors. Specifically, we investigate whether enhanced executive accountability through CEO/CFO certification requirements influences firms' voluntary disclosure practices, particularly in contexts where unsophisticated investors comprise a significant portion of the shareholder base. Our analysis contributes to the growing literature on the interaction between regulatory requirements and information asymmetry in financial markets.

While our empirical analysis faces certain data limitations, the theoretical framework we develop suggests that Certification of Disclosure requirements may have meaningful effects on voluntary disclosure through the unsophisticated investor channel. The certification requirement likely reduces information asymmetry by providing additional assurance to unsophisticated investors who may lack the expertise to fully evaluate complex financial information. This alignment with prior literature, such as Miller (2010) in The Accounting Review and Lawrence (2013) in the Journal of Accounting Research, suggests that regulatory interventions can help level the information playing field between sophisticated and unsophisticated investors.

The implications of our findings are particularly relevant for regulators and policymakers. The results suggest that certification requirements may serve as an effective mechanism for protecting unsophisticated investors without imposing excessive costs on firms. This supports the broader regulatory objective of maintaining market integrity while promoting efficient information dissemination. Our findings complement the work of Diamond and Verrecchia (1991) in the Review of Financial Studies, suggesting that enhanced disclosure requirements can improve market liquidity and reduce information asymmetry.

For corporate managers, our analysis implies that certification requirements may actually reduce the cost of voluntary disclosure by increasing its credibility among unsophisticated investors. This could lead to more efficient capital allocation and potentially lower costs of capital, as suggested by Lambert, Leuz, and Verrecchia (2007) in the Journal of Accounting Research. The findings also suggest that managers should consider the composition of their investor base when making voluntary disclosure decisions, as the benefits of certification may be particularly pronounced when unsophisticated investors comprise a larger share of ownership.

For investors, our results highlight the importance of certification requirements in potentially reducing information risk, particularly for those who may lack sophisticated financial analysis capabilities. This suggests that unsophisticated investors may benefit from paying attention to certified disclosures as a more reliable source of information compared to uncertified voluntary disclosures.

Our study has several limitations that future research could address. First, the lack of detailed data on investor sophistication at the firm level limits our ability to draw strong causal inferences. Future studies could benefit from more granular data on investor characteristics and their trading behavior. Second, our analysis focuses primarily on the direct effects of certification requirements, while indirect effects through market intermediaries and information cascades remain unexplored. Future research could examine how certification requirements affect the role of financial analysts and other information intermediaries in disseminating information to unsophisticated investors.

Promising avenues for future research include examining the interaction between certification requirements and other regulatory changes affecting unsophisticated investors, such as Regulation Fair Disclosure and the JOBS Act. Additionally, researchers could investigate how technological advances in information dissemination affect the relationship between certification requirements and voluntary disclosure, particularly as retail investing platforms become more sophisticated. Such research could provide valuable insights for regulators and practitioners as they continue to adapt disclosure requirements to evolving market conditions and investor needs.

References

Here are the formatted references in APA style:.

Ajinkya, B., Bhojraj, S., & Sengupta, P. (2005). The association between outside directors, institutional investors and the properties of management earnings forecasts. Journal of Accounting Research, 43 (3), 343-376.

Armstrong, C. S., Guay, W. R., & Weber, J. P. (2010). The role of information and financial reporting in corporate governance and debt contracting. Journal of Accounting and Economics, 50 (2-3), 179-234.

Baginski, S. P., Campbell, J. L., Moon, J. R., & Warren, D. E. (2018). How effective are management earnings forecasts in mitigating disclosure-related litigation risk? Review of Accounting Studies, 23 (4), 1472-1508.

Bloomfield, R. J. (2002). The "incomplete revelation hypothesis" and financial reporting. Accounting Horizons, 16 (3), 233-243.

Bushee, B. J. (2001). Do institutional investors prefer near-term earnings over long-run value? Contemporary Accounting Research, 18 (2), 207-246.

Coates, J. C. (2007). The goals and promise of the Sarbanes-Oxley Act. Journal of Economic Perspectives, 21 (1), 91-116.

Cohen, D. A., Dey, A., & Lys, T. Z. (2008). Real and accrual-based earnings management in the pre- and post-Sarbanes-Oxley periods. The Accounting Review, 83 (3), 757-787.

Core, J. E. (2001). A review of the empirical disclosure literature: Discussion. Journal of Accounting and Economics, 31 (1-3), 441-456.

DeFond, M., & Zhang, J. (2014). A review of archival auditing research. Journal of Accounting and Economics, 58 (2-3), 275-326.

Diamond, D. W., & Verrecchia, R. E. (1991). Disclosure, liquidity, and the cost of capital. The Journal of Finance, 46 (4), 1325-1359.

Dye, R. A. (1998). Investor sophistication and voluntary disclosures. Review of Accounting Studies, 3 (3), 261-287.

Francis, J., Nanda, D., & Olsson, P. (2008). Voluntary disclosure, earnings quality, and cost of capital. Journal of Accounting Research, 46 (1), 53-99.

Healy, P. M., & Palepu, K. G. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. Journal of Accounting and Economics, 31 (1-3), 405-440.

Hennes, K. M., Leone, A. J., & Miller, B. P. (2008). The importance of distinguishing errors from irregularities in restatement research: The case of restatements and CEO/CFO turnover. The Accounting Review, 83 (6), 1487-1519.

Hirshleifer, D., & Teoh, S. H. (2003). Limited attention, information disclosure, and financial reporting. Journal of Accounting and Economics, 36 (1-3), 337-386.

Kim, O., & Verrecchia, R. E. (1994). Market liquidity and volume around earnings announcements. Journal of Accounting and Economics, 17 (1-2), 41-67.

Krishnan, J., Rama, D., & Zhang, Y. (2011). Costs to comply with SOX Section 404. Auditing: A Journal of Practice & Theory, 30 (1), 267-289.

Lambert, R., Leuz, C., & Verrecchia, R. E. (2007). Accounting information, disclosure, and the cost of capital. Journal of Accounting Research, 45 (2), 385-420.

Lawrence, A. (2013). Individual investors and financial disclosure. Journal of Accounting and Economics, 56 (1), 130-147.

Leuz, C., & Verrecchia, R. E. (2000). The economic consequences of increased disclosure. Journal of Accounting Research, 38 (supplement), 91-124.

Li, C., Sun, L., & Ettredge, M. (2008). Financial executive qualifications, financial executive turnover, and adverse SOX 404 opinions. Journal of Accounting and Economics, 46 (1), 46-75.

Miller, B. P. (2010). The effects of reporting complexity on small and large investor trading. The Accounting Review, 85 (6), 2107-2143.

Rogers, J. L., & Van Buskirk, A. (2009). Shareholder litigation and changes in disclosure behavior. Journal of Accounting and Economics, 47 (1-2), 136-156.

Verrecchia, R. E. (2001). Essays on disclosure. Journal of Accounting and Economics, 32 (1-3), 97-180.

You, H., & Zhang, X. J. (2009). Financial reporting complexity and investor underreaction to 10-K information. Review of Accounting Studies, 14 (4), 559-586.

Zhang, I. X. (2007). Economic consequences of the Sarbanes-Oxley Act of 2002. Journal of Accounting and Economics, 44 (1-2), 74-115., .

Table 1

Descriptive Statistics

Variables	**N**	**Mean**	**Std. Dev.**	**P25**	**Median**	**P75**
FreqMF	22,137	0.5769	0.8215	0.0000	0.0000	1.0986
Treatment Effect	22,137	0.5808	0.4934	0.0000	1.0000	1.0000
Institutional ownership	22,137	0.3778	0.2821	0.1174	0.3421	0.6140
Firm size	22,137	5.2653	2.1337	3.6724	5.1206	6.7038
Book-to-market	22,137	0.7157	0.7261	0.2837	0.5498	0.9385
ROA	22,137	-0.0759	0.2966	-0.0629	0.0134	0.0558
Stock return	22,137	-0.0005	0.6729	-0.4154	-0.1571	0.1924
Earnings volatility	22,137	0.1671	0.3141	0.0241	0.0603	0.1652
Loss	22,137	0.3674	0.4821	0.0000	0.0000	1.0000
Class action litigation risk	22,137	0.4420	0.3442	0.1210	0.3544	0.7752

This table shows the descriptive statistics. All continuous variables are winsorized at the 1st and 99th percentiles.

Table 2
Pearson Correlations
CertificationofDisclosure Unsophisticated Investors

	Treatment Effect	FreqMF	Institutional ownership	Firm size	Book-to-market	ROA	Stock return	Earnings volatility	Loss	Class action litigation risk
Treatment Effect	1.00	**0.12**	**0.10**	**0.05**	**-0.05**	**-0.05**	-0.00	**0.02**	**0.04**	**0.09**
FreqMF	**0.12**	1.00	**0.48**	**0.47**	**-0.15**	**0.21**	-0.01	**-0.12**	**-0.23**	**0.11**
Institutional ownership	**0.10**	**0.48**	1.00	**0.69**	**-0.16**	**0.27**	**-0.11**	**-0.23**	**-0.24**	**0.09**
Firm size	**0.05**	**0.47**	**0.69**	1.00	**-0.38**	**0.30**	0.00	**-0.22**	**-0.32**	**0.11**
Book-to-market	**-0.05**	**-0.15**	**-0.16**	**-0.38**	1.00	**0.09**	**-0.18**	**-0.13**	**0.07**	**-0.12**
ROA	**-0.05**	**0.21**	**0.27**	**0.30**	**0.09**	1.00	**0.12**	**-0.60**	**-0.59**	**-0.27**
Stock return	-0.00	-0.01	**-0.11**	0.00	**-0.18**	**0.12**	1.00	0.01	**-0.09**	**-0.03**
Earnings volatility	**0.02**	**-0.12**	**-0.23**	**-0.22**	**-0.13**	**-0.60**	0.01	1.00	**0.39**	**0.30**
Loss	**0.04**	**-0.23**	**-0.24**	**-0.32**	**0.07**	**-0.59**	**-0.09**	**0.39**	1.00	**0.32**
Class action litigation risk	**0.09**	**0.11**	**0.09**	**0.11**	**-0.12**	**-0.27**	**-0.03**	**0.30**	**0.32**	1.00

This table shows the Pearson correlations for the sample. Correlations that are significant at the 0.05 level or better are highlighted in bold.

Table 3

The Impact of Certification of Disclosure on Management Forecast Frequency

	(1)	(2)
Treatment Effect	0.1975*** (18.42)	0.1309*** (14.22)
Institutional ownership		0.8107*** (31.48)
Firm size		0.0846*** (22.65)
Book-to-market		0.0042 (0.71)
ROA		0.1287*** (7.15)
Stock return		0.0110 (1.56)
Earnings volatility		0.0804*** (5.01)
Loss		-0.1952*** (16.62)
Class action litigation risk		0.2245*** (15.40)
N	22,137	22,137
R^2	0.0141	0.2874

Notes: t-statistics in parentheses. *, **, and *** represent significance at the 10%, 5%, and 1% level, respectively.