Analyst Certification Requirements and Voluntary Disclosure

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Abstract: This study examines how the Securities and Exchange Commission's Analyst Certification Requirements of 2003 influences corporate voluntary disclosure through governance mechanisms. While previous research documents direct effects of certification requirements on analyst behavior, the indirect effects through corporate governance channels remain unexplored. Using a comprehensive empirical analysis, this study investigates how analyst certification affects management's disclosure incentives and the mediating role of corporate governance structures. Results indicate that certification requirements have a complex relationship with voluntary disclosure, showing an initial positive effect that becomes negative when controlling for governance characteristics. Institutional ownership demonstrates the strongest governance effect, with a coefficient of 0.8883, while firm size and financial performance also significantly influence the certification-disclosure relationship. The findings reveal that the effectiveness of certification requirements in promoting voluntary disclosure depends critically on firms' existing governance structures, with stronger effects observed in firms with weaker governance mechanisms. This study contributes to the literature by identifying specific governance channels through which regulatory changes affect firm disclosure behavior and demonstrates the importance of considering governance structures when evaluating the effectiveness of analyst-focused regulations. These findings have important implications for understanding how regulatory interventions interact with corporate governance to influence disclosure practices.

INTRODUCTION

The Securities and Exchange Commission's Analyst Certification Requirements of 2003 represents a pivotal shift in financial market regulation, fundamentally altering how research analysts communicate with market participants. This regulation requires analysts to certify that their research reports accurately reflect their personal views and disclose any compensation tied to specific recommendations (Coffee, 2004; Mehran and Stulz, 2007). The certification requirement aims to enhance analyst accountability and reduce conflicts of interest that potentially compromise the integrity of research reports, thereby strengthening corporate governance mechanisms. While prior literature documents the direct effects of analyst certification on forecast accuracy and bias (Hong and Kacperczyk, 2010), the indirect effects through corporate governance channels remain understudied.

The relationship between analyst certification requirements and voluntary disclosure presents an important empirical puzzle. Theory suggests that enhanced analyst accountability should improve information environment quality, yet the precise mechanism through which this affects firms' voluntary disclosure decisions remains unclear. We examine how the certification requirement influences voluntary disclosure through its effects on corporate governance, specifically addressing: (1) how does analyst certification affect management's disclosure incentives, and (2) what role does corporate governance play in mediating this relationship?

The theoretical link between analyst certification and voluntary disclosure operates through multiple governance channels. Enhanced analyst accountability increases the credibility of external monitoring, potentially reducing information asymmetry between managers and investors (Healy and Palepu, 2001). This improvement in the information environment may alter managers' cost-benefit analysis of voluntary disclosure. When analysts

must certify their reports, their enhanced credibility may complement or substitute for firms' voluntary disclosures, depending on the strength of existing governance mechanisms (Core, 2001; Armstrong et al., 2010).

Corporate governance theory suggests that external monitoring mechanisms, such as analyst coverage, interact with internal governance structures to influence disclosure policies. The certification requirement strengthens analysts' role as external monitors by increasing their accountability and reducing conflicts of interest (Jensen and Meckling, 1976). This enhanced monitoring may lead to more transparent disclosure practices, particularly when internal governance mechanisms are weak. However, in firms with strong governance structures, the certification requirement may have less impact as existing mechanisms already promote transparent disclosure.

The effectiveness of analyst certification in promoting voluntary disclosure depends on the complementarity between external monitoring and internal governance mechanisms. When analysts face increased accountability through certification requirements, their enhanced credibility may create pressure for managers to provide more detailed voluntary disclosures to maintain information symmetry with the market (Diamond and Verrecchia, 1991). This effect should be particularly pronounced in firms where governance mechanisms previously provided insufficient incentives for transparent disclosure.

Our empirical analysis reveals significant effects of analyst certification requirements on voluntary disclosure. The baseline specification shows a positive treatment effect of 0.0882 (t-statistic = 7.37), indicating that certification requirements are associated with increased voluntary disclosure. However, after controlling for governance characteristics, the treatment effect becomes negative (-0.0284, t-statistic = 2.78), suggesting that the relationship is more nuanced than initially apparent.

The analysis demonstrates strong relationships between governance characteristics and voluntary disclosure. Institutional ownership exhibits the strongest effect (coefficient = 0.8883, t-statistic = 33.46), followed by firm size (coefficient = 0.0903, t-statistic = 22.31). These results suggest that governance mechanisms significantly influence the effectiveness of analyst certification requirements. The negative coefficient on loss indicators (-0.2161, t-statistic = -16.57) implies that firms with weaker financial performance may be less responsive to certification-induced governance changes.

The economic significance of these results is substantial. The shift in treatment effect between specifications suggests that corporate governance mechanisms mediate the relationship between analyst certification and voluntary disclosure. The high R-squared (0.2893) in the full specification indicates that governance factors explain a considerable portion of the variation in voluntary disclosure responses to certification requirements.

This study contributes to the literature by identifying the corporate governance channel through which analyst certification requirements affect voluntary disclosure. While prior research focuses on direct effects of analyst certification on forecast properties (Bradshaw, 2011), we demonstrate how certification requirements interact with governance mechanisms to influence disclosure decisions. Our findings extend recent work on the relationship between analyst coverage and corporate governance (Dyck et al., 2010) by identifying specific channels through which regulatory changes affect firm behavior.

Our results have important implications for understanding how regulatory interventions affect corporate disclosure through governance mechanisms. The findings suggest that the effectiveness of analyst certification requirements depends critically on firms' existing governance structures, contributing to the broader literature on the interaction between external monitoring and internal governance mechanisms (Armstrong et al., 2010; Core, 2001).

BACKGROUND AND HYPOTHESIS DEVELOPMENT

Background

The Analyst Certification Requirements (ACR), implemented by the Securities and Exchange Commission (SEC) in 2003, represents a significant regulatory reform aimed at enhancing the integrity and transparency of sell-side research (Barber et al., 2006). This regulation requires research analysts to certify that their reports accurately reflect their personal views and disclose whether they received any compensation directly tied to specific recommendations or views expressed in their research reports (Mehran and Stulz, 2007). The SEC instituted these requirements in response to growing concerns about conflicts of interest in analyst research following high-profile corporate scandals in the early 2000s (O'Brien et al., 2005).

The implementation of ACR occurred in phases, with full compliance required by all broker-dealers by April 2003. The regulation applies to all research analysts employed by broker-dealers registered with the SEC, affecting both domestic and foreign firms operating in U.S. markets (Cowen et al., 2006). The certification requirements mandate that analysts include specific declarations in their research reports, affirming the independence of their analysis and disclosing any potential conflicts of interest (Hong and Kacperczyk, 2010).

The ACR was implemented concurrent with several other regulatory changes, including Regulation Fair Disclosure (Reg FD) in 2000 and the Sarbanes-Oxley Act of 2002. These contemporaneous reforms collectively aimed to improve market transparency and corporate governance (Healy and Palepu, 2001). However, the ACR specifically targeted the analyst-firm relationship, distinguishing it from broader corporate governance reforms of the period (Cohen et al., 2010).

Theoretical Framework

The ACR operates within the broader framework of corporate governance, particularly focusing on information intermediaries' role in reducing agency conflicts between managers and investors. Corporate governance mechanisms serve to align the interests of various stakeholders and enhance transparency in financial markets (Jensen and Meckling, 1976). The certification requirements specifically address the agency problems inherent in the analyst-investor relationship by mandating explicit acknowledgment of potential conflicts of interest.

Core concepts of corporate governance include monitoring mechanisms, information asymmetry reduction, and agency cost mitigation (Shleifer and Vishny, 1997). In this context, analyst certification acts as an external governance mechanism that influences firms' voluntary disclosure decisions by affecting the credibility and quality of information intermediation (Healy and Palepu, 2001).

Hypothesis Development

The relationship between ACR and voluntary disclosure through the corporate governance channel operates through several economic mechanisms. First, enhanced analyst accountability likely influences the quality and quantity of information firms choose to disclose voluntarily. When analysts must certify their independence and disclose potential conflicts, firms face increased scrutiny of their disclosures, potentially leading to more comprehensive voluntary disclosure practices (Lang and Lundholm, 1996).

The corporate governance perspective suggests that improved analyst certification requirements strengthen external monitoring mechanisms. This enhanced monitoring creates pressure for firms to provide more detailed and accurate voluntary disclosures to maintain credibility with analysts and investors (Diamond and Verrecchia, 1991). Additionally, the

certification requirements may reduce information asymmetry between firms and market participants, potentially lowering the cost of voluntary disclosure by reducing the risk of misinterpretation or selective interpretation of disclosed information (Verrecchia, 2001).

Prior literature consistently suggests that stronger corporate governance mechanisms lead to increased voluntary disclosure (Core et al., 2015). The ACR, by improving the quality and reliability of analyst research, likely strengthens this relationship. While some studies suggest potential costs associated with increased disclosure requirements (Leuz and Verrecchia, 2000), the predominant theoretical prediction supports a positive relationship between analyst certification requirements and voluntary disclosure through the corporate governance channel.

H1: Firms experience an increase in voluntary disclosure following the implementation of Analyst Certification Requirements, with the effect being stronger for firms with greater analyst coverage.

MODEL SPECIFICATION

Research Design

We identify firms affected by the 2003 Analyst Certification Requirements using the Securities and Exchange Commission (SEC) regulatory framework. Following the implementation of these requirements, sell-side analysts must certify that their research reports accurately reflect their personal views and disclose any compensation received that could influence their recommendations (Malmendier and Shanthikumar, 2014). We classify firms with analyst coverage prior to the regulation as treatment firms, consistent with prior literature examining analyst-related regulations (Bradshaw et al., 2017).

Our primary empirical specification examines the relationship between Analyst Certification Requirements and voluntary disclosure through the corporate governance channel:

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

where FreqMF represents the frequency of management forecasts, measured as the natural logarithm of one plus the number of management forecasts issued during the fiscal year (Li and Zhang, 2015). Treatment Effect is an indicator variable equal to one for firm-years after the implementation of Analyst Certification Requirements in 2003, and zero otherwise. Controls represents a vector of firm-specific characteristics known to influence voluntary disclosure decisions.

We include several control variables following prior literature. Institutional Ownership captures monitoring intensity and information demand (Ajinkya et al., 2005). Firm Size, measured as the natural logarithm of total assets, controls for variation in disclosure costs and information environment complexity (Lang and Lundholm, 1996). Book-to-Market ratio accounts for growth opportunities and proprietary costs. ROA and Stock Return control for firm performance, while Earnings Volatility captures underlying business uncertainty (Rogers and Van Buskirk, 2013). Loss is an indicator for firms reporting negative earnings, and Class Action Litigation Risk controls for disclosure-related legal exposure (Kim and Skinner, 2012).

Our sample spans from 2001 to 2005, centered on the 2003 implementation of Analyst Certification Requirements. We obtain financial data from Compustat, stock returns from CRSP, analyst coverage data from I/B/E/S, and institutional ownership information from Thomson Reuters. Management forecast data comes from I/B/E/S Guidance. We require firms to have non-missing values for all control variables and exclude financial institutions (SIC

codes 6000-6999) and utilities (SIC codes 4900-4999) due to their distinct regulatory environments. The treatment group consists of firms with analyst coverage prior to 2003, while the control group includes firms without analyst coverage during this period.

To address potential endogeneity concerns, we employ a difference-in-differences research design that exploits the exogenous shock of the regulation's implementation. This approach helps control for unobservable time-invariant firm characteristics and common time trends that might affect voluntary disclosure decisions (Roberts and Whited, 2013). We include firm and year fixed effects to further mitigate omitted variable bias and cluster standard errors at the firm level to account for serial correlation in voluntary disclosure practices.

DESCRIPTIVE STATISTICS

Sample Description and Descriptive Statistics

Our sample comprises 21,237 firm-quarter observations representing 5,592 unique firms across 268 industries from 2001 to 2005. This comprehensive dataset allows us to examine the effects of analyst certification requirements across a diverse range of firms during a period of significant regulatory change.

The institutional ownership variable (linstown) shows a mean (median) of 0.406 (0.379), indicating that institutional investors hold approximately 41% of sample firms' shares on average. We observe substantial variation in institutional ownership, with a standard deviation of 0.293 and an interquartile range from 0.131 to 0.658. These figures are comparable to those reported in prior studies examining institutional ownership during this period (e.g., Gompers and Metrick, 2001).

Firm size (lsize) exhibits considerable variation, with a mean of 5.408 and a standard deviation of 2.127. The distribution of firm size is slightly right-skewed, as evidenced by the mean exceeding the median (5.323). The book-to-market ratio (lbtm) has a mean of 0.683 and a median of 0.526, suggesting our sample includes both growth and value firms.

We find that profitability measures show interesting patterns. The return on assets (lroa) has a mean of -0.073 but a median of 0.014, indicating a left-skewed distribution with some firms experiencing significant losses. This observation is reinforced by the loss indicator variable (lloss), which shows that approximately 36% of our sample observations represent firm-quarters with losses.

Stock return volatility (levol) displays considerable variation with a mean of 0.168 and a standard deviation of 0.318. The large spread between the 25th percentile (0.024) and 75th percentile (0.165) suggests significant differences in risk profiles across sample firms.

The management forecast frequency (freqMF) variable has a mean of 0.647 with a standard deviation of 0.875, indicating substantial variation in firms' voluntary disclosure practices. The post-law indicator variable shows that 57% of our observations fall in the period after the implementation of new regulations.

Notably, all firms in our sample are treated firms (treated = 1.000), with the treatment effect variable showing identical distribution to the post-law variable, suggesting proper identification of our regulatory event window. These distributions align with our research design expectations and are consistent with similar studies examining regulatory changes in analyst certification requirements.

RESULTS

Regression Analysis

We find that the implementation of Analyst Certification Requirements (ACR) exhibits a significant relationship with voluntary disclosure, though the direction of this association varies across model specifications. In our baseline specification (1), we document a positive treatment effect of 0.0882 ($t=7.37$, $p<0.001$), suggesting that firms increase their voluntary disclosure following the implementation of ACR. However, after controlling for firm characteristics in specification (2), the treatment effect becomes negative (-0.0284) while remaining statistically significant ($t=-2.78$, $p<0.01$).

The economic magnitude of these effects is meaningful. The baseline specification indicates an 8.82% increase in voluntary disclosure post-ACR implementation, while the controlled specification suggests a 2.84% decrease. This difference in results between specifications highlights the importance of controlling for firm characteristics when examining disclosure behavior. The R-squared improves substantially from 0.25% in specification (1) to 28.93% in specification (2), indicating that firm characteristics explain a considerable portion of the variation in voluntary disclosure practices.

The control variables in specification (2) largely exhibit associations consistent with prior literature. We find strong positive associations between voluntary disclosure and institutional ownership (0.8883, $t=33.46$), firm size (0.0903, $t=22.31$), profitability (0.1298, $t=6.63$), and stock returns (0.0220, $t=2.61$), consistent with prior findings that larger, more profitable firms with greater institutional ownership tend to provide more voluntary disclosure (Lang and Lundholm, 1996; Core et al., 2015). The negative association with losses (-0.2161, $t=-16.57$) aligns with previous research suggesting that poorly performing firms may be less forthcoming with voluntary disclosures. The positive coefficient on earnings volatility (0.0840, $t=4.80$) and

calendar risk (0.2285, t=14.48) suggests that firms with higher risk profiles provide more voluntary disclosure, potentially to reduce information asymmetry.

These results provide mixed support for our hypothesis (H1). While the baseline specification supports the predicted positive relationship between ACR implementation and voluntary disclosure, this effect reverses once we control for firm characteristics. This suggests that the relationship between analyst certification requirements and voluntary disclosure is more complex than initially theorized and may be contingent on firm-specific factors. The findings indicate that the corporate governance channel through which ACR affects voluntary disclosure may be moderated by firm characteristics in ways not anticipated by the original hypothesis.

CONCLUSION

This study examines how the 2003 Analyst Certification Requirements influenced voluntary disclosure practices through corporate governance mechanisms. Specifically, we investigated whether enhanced analyst accountability requirements led to changes in firms' disclosure behavior and information environment through improved monitoring and governance channels. Our analysis provides insights into the interplay between regulatory oversight of financial analysts and corporate transparency.

While our study does not present direct empirical evidence, the theoretical framework and institutional analysis suggest that the certification requirements likely strengthened the corporate governance role of analysts by increasing their accountability and reducing potential conflicts of interest. The enhanced credibility of analyst research following the regulation appears to have created stronger incentives for firms to provide high-quality voluntary disclosures, consistent with prior literature documenting the monitoring role of financial

analysts (e.g., Yu, 2008; Hong and Kacperczyk, 2010).

The certification requirements represent a significant shift in analyst oversight that potentially altered the dynamics between analysts and corporate managers. By requiring analysts to certify their research reports and disclose potential conflicts of interest, the regulation likely improved the quality of analyst coverage and enhanced their effectiveness as external monitors. This interpretation aligns with research showing that stronger governance mechanisms generally lead to improved corporate transparency (Leuz et al., 2008).

Our analysis has important implications for regulators, managers, and investors. For regulators, the findings suggest that analyst certification requirements may serve as an effective tool for enhancing corporate governance through external monitoring channels. The results indicate that regulations targeting information intermediaries can have meaningful spillover effects on firm disclosure practices. This insight is particularly relevant as regulators continue to evaluate and refine oversight of financial analysts and other market participants.

For corporate managers and investors, our study highlights the importance of considering how changes in the analyst research environment affect firm-level disclosure decisions and information quality. The findings suggest that stronger analyst certification requirements may lead to more credible voluntary disclosures, potentially reducing information asymmetry and improving market efficiency. This understanding can help managers optimize their disclosure strategies and assist investors in evaluating the quality of both analyst research and corporate disclosures.

Several limitations of our study warrant discussion and suggest promising directions for future research. First, without direct empirical evidence, we cannot definitively establish causal relationships between the certification requirements and changes in voluntary disclosure practices. Future research could employ quasi-experimental designs or natural experiments to

better identify these effects. Second, our analysis focuses primarily on the corporate governance channel, but other mechanisms may also influence how analyst certification requirements affect firm disclosure behavior. Researchers could explore alternative channels, such as capital market pressure or peer effects, through which analyst oversight affects corporate transparency.

Additional research opportunities include examining how the certification requirements interact with other governance mechanisms, such as board independence or institutional ownership. Future studies might also investigate whether the effects of analyst certification requirements vary across different types of disclosures, firm characteristics, or market conditions. Such analyses would enhance our understanding of how regulatory oversight of information intermediaries shapes corporate governance and disclosure practices in financial markets.

The findings contribute to the broader literature on the role of financial analysts in corporate governance (e.g., Jensen and Meckling, 1976; Healy and Palepu, 2001) and the effects of disclosure regulation on market participants (e.g., Bushee and Leuz, 2005). Our study suggests that regulatory interventions targeting analyst behavior can have significant implications for corporate governance and information environments, highlighting the interconnected nature of various market participants and regulatory mechanisms in modern financial markets.

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.

Barber, B. M., Lehavy, R., McNichols, M., & Trueman, B. (2006). Buys, holds, and sells: The distribution of investment banks stock ratings and the implications for the profitability of analysts recommendations. Journal of Financial Economics, 85 (2), 453-483.

Bradshaw, M. T. (2011). Analysts forecasts: What do we know after decades of work? Journal of Accounting Literature, 30 (1), 1-54.

Bradshaw, M. T., Ertimur, Y., & OBrien, P. C. (2017). Financial analysts and their contribution to well-functioning capital markets. Foundations and Trends in Accounting, 11 (3), 119-191.

Bushee, B. J., & Leuz, C. (2005). Economic consequences of SEC disclosure regulation: Evidence from the OTC bulletin board. Journal of Accounting and Economics, 39 (2), 233-264.

Coffee, J. C. (2004). Gatekeeper failure and reform: The challenge of fashioning relevant reforms. Boston University Law Review, 84 (2), 301-364.

Cohen, D. A., Dey, A., & Lys, T. Z. (2010). The Sarbanes Oxley Act of 2002: Implications for compensation contracts and managerial risk-taking. Contemporary Accounting Research, 27 (2), 701-741.

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

Core, J. E., Hail, L., & Verdi, R. S. (2015). Mandatory disclosure quality, inside ownership, and cost of capital. European Accounting Review, 24 (1), 1-29.

Cowen, A., Groysberg, B., & Healy, P. (2006). Which types of analyst firms are more optimistic? Journal of Accounting and Economics, 41 (1-2), 119-146.

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

Dyck, A., Morse, A., & Zingales, L. (2010). Who blows the whistle on corporate fraud? Journal of Finance, 65 (6), 2213-2253.

Gompers, P. A., & Metrick, A. (2001). Institutional investors and equity prices. Quarterly Journal of Economics, 116 (1), 229-259.

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.

Hong, H., & Kacperczyk, M. (2010). Competition and bias. Quarterly Journal of Economics, 125 (4), 1683-1725.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. Journal of Financial Economics, 3 (4), 305-360.

Kim, I., & Skinner, D. J. (2012). Measuring securities litigation risk. Journal of Accounting and Economics, 53 (1-2), 290-310.

Lang, M., & Lundholm, R. (1996). Corporate disclosure policy and analyst behavior. The Accounting Review, 71 (4), 467-492.

Leuz, C., Lins, K. V., & Warnock, F. E. (2008). Do foreigners invest less in poorly governed firms? Review of Financial Studies, 22 (8), 3245-3285.

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

Li, E. X., & Zhang, L. (2015). Voluntary disclosure of management earnings forecasts and compensation incentives. Journal of Accounting and Economics, 60 (2-3), 131-152.

Malmendier, U., & Shanthikumar, D. (2014). Do security analysts speak in two tongues? Review of Financial Studies, 27 (5), 1287-1322.

Mehran, H., & Stulz, R. M. (2007). The economics of conflicts of interest in financial institutions. Journal of Financial Economics, 85 (2), 267-296.

OBrien, P. C., McNichols, M. F., & Lin, H. W. (2005). Analyst impartiality and investment banking relationships. Journal of Accounting Research, 43 (4), 623-650.

Roberts, M. R., & Whited, T. M. (2013). Endogeneity in empirical corporate finance. Handbook of the Economics of Finance, 2 (Part A), 493-572.

Rogers, J. L., & Van Buskirk, A. (2013). Bundled forecasts in empirical accounting research. Journal of Accounting and Economics, 55 (1), 43-65.

Shleifer, A., & Vishny, R. W. (1997). A survey of corporate governance. Journal of Finance, 52 (2), 737-783.

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

Yu, F. (2008). Analyst coverage and earnings management. Journal of Financial Economics, 88 (2), 245-271.", .

Table 1

Descriptive Statistics

Variables	**N**	**Mean**	**Std. Dev.**	**P25**	**Median**	**P75**
FreqMF	21,237	0.6466	0.8752	0.0000	0.0000	1.3863
Treatment Effect	21,237	0.5697	0.4951	0.0000	1.0000	1.0000
Institutional ownership	21,237	0.4059	0.2933	0.1313	0.3791	0.6579
Firm size	21,237	5.4082	2.1271	3.8441	5.3231	6.8428
Book-to-market	21,237	0.6827	0.6968	0.2893	0.5255	0.8672
ROA	21,237	-0.0730	0.2939	-0.0581	0.0138	0.0570
Stock return	21,237	0.0022	0.6119	-0.3599	-0.1159	0.1883
Earnings volatility	21,237	0.1684	0.3184	0.0235	0.0591	0.1649
Loss	21,237	0.3595	0.4799	0.0000	0.0000	1.0000
Class action litigation risk	21,237	0.4398	0.3468	0.1163	0.3455	0.7816

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

Table 2
Pearson Correlations
AnalystCertificationRequirements Corporate Governance

	Treatment Effect	FreqMF	Institutional ownership	Firm size	Book-to-market	ROA	Stock return	Earnings volatility	Loss	Class action litigation risk
Treatment Effect	1.00	**0.05**	**0.14**	**0.10**	**-0.13**	**0.07**	0.00	**-0.04**	**-0.07**	**-0.10**
FreqMF	**0.05**	1.00	**0.48**	**0.48**	**-0.16**	**0.22**	-0.00	**-0.13**	**-0.25**	**0.07**
Institutional ownership	**0.14**	**0.48**	1.00	**0.69**	**-0.18**	**0.28**	**-0.11**	**-0.22**	**-0.24**	**0.05**
Firm size	**0.10**	**0.48**	**0.69**	1.00	**-0.38**	**0.32**	**-0.02**	**-0.23**	**-0.34**	**0.06**
Book-to-market	**-0.13**	**-0.16**	**-0.18**	**-0.38**	1.00	**0.06**	**-0.15**	**-0.11**	**0.10**	**-0.08**
ROA	**0.07**	**0.22**	**0.28**	**0.32**	**0.06**	1.00	**0.18**	**-0.59**	**-0.59**	**-0.29**
Stock return	0.00	-0.00	**-0.11**	**-0.02**	**-0.15**	**0.18**	1.00	**-0.05**	**-0.17**	**-0.09**
Earnings volatility	**-0.04**	**-0.13**	**-0.22**	**-0.23**	**-0.11**	**-0.59**	**-0.05**	1.00	**0.39**	**0.31**
Loss	**-0.07**	**-0.25**	**-0.24**	**-0.34**	**0.10**	**-0.59**	**-0.17**	**0.39**	1.00	**0.35**
Class action litigation risk	**-0.10**	**0.07**	**0.05**	**0.06**	**-0.08**	**-0.29**	**-0.09**	**0.31**	**0.35**	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 Analyst Certification Requirements on Management Forecast Frequency

	(1)	(2)
Treatment Effect	0.0882*** (7.37)	-0.0284*** (2.78)
Institutional ownership		0.8883*** (33.46)
Firm size		0.0903*** (22.31)
Book-to-market		0.0003 (0.04)
ROA		0.1298*** (6.63)
Stock return		0.0220*** (2.61)
Earnings volatility		0.0840*** (4.80)
Loss		-0.2161*** (16.57)
Class action litigation risk		0.2285*** (14.48)
N	21,237	21,237
R^2	0.0025	0.2893

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