Global Analyst Research Settlement and Voluntary Disclosure

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Abstract: The Global Analyst Research Settlement of 2003 represents a landmark $1.4 billion regulatory intervention that mandated strict separation between investment banking and equity research functions, creating a natural experiment to examine how changes in the information environment affect corporate disclosure behavior. This study investigates whether and how the settlement influenced firms' voluntary disclosure practices through heightened litigation risk channels. The settlement reduced availability of biased positive research coverage, creating an information void that increased firms' reliance on voluntary disclosure and elevated litigation exposure for inadequate disclosure practices. Building on theoretical frameworks suggesting litigation risk creates incentives for increased voluntary disclosure as legal insurance against securities lawsuits, we develop testable predictions that firms subject to the settlement experienced significant increases in voluntary disclosure due to elevated litigation risk. Our empirical analysis provides robust evidence supporting the litigation risk channel, with treatment effects ranging from 0.0725 to 0.0894 across specifications, all statistically significant at the 1% level. The most comprehensive specification yielded a treatment effect of 0.0894, indicating that affected firms increased voluntary disclosure by approximately 8.94 percentage points relative to control firms. Results remained stable across multiple specifications with high model fit (R-squared of 0.8015), strengthening causal interpretation. This study contributes novel evidence on litigation risk channels through which regulatory interventions affect corporate disclosure behavior, extending prior research on the

settlement's direct effects and complementing literature on litigation risk determinants of disclosure decisions.

INTRODUCTION

The Global Analyst Research Settlement of 2003 represents one of the most significant regulatory interventions in the history of financial markets, fundamentally reshaping the relationship between investment banking and equity research through a comprehensive $1.4 billion settlement administered by the SEC, NYSE, and NASD. This landmark regulation emerged from widespread concerns about conflicts of interest that had compromised the independence of equity research, particularly during the dot-com bubble period when analysts faced pressure to issue favorable recommendations to support their firms' investment banking relationships (Kadan et al., 2009; Malmendier and Shanthikumar, 2007). The settlement mandated strict separation between research and investment banking functions, creating a natural experiment to examine how regulatory changes in the information environment affect corporate disclosure behavior.

The settlement's impact on voluntary disclosure operates primarily through the litigation risk channel, as the regulatory intervention fundamentally altered the legal and reputational consequences firms face for inadequate disclosure practices. Prior research demonstrates that litigation risk serves as a powerful determinant of corporate disclosure decisions, with managers increasing voluntary disclosure to mitigate potential legal exposure (Skinner, 1994; Francis et al., 1994). However, the specific mechanism through which analyst research reforms affect voluntary disclosure via litigation risk remains underexplored in the literature. This study addresses the critical research question of whether and how the Global Analyst Research Settlement influenced firms' voluntary disclosure practices through heightened litigation risk, and examines the economic magnitude of this relationship across different firm characteristics and market conditions.

The economic mechanism linking the Global Analyst Research Settlement to voluntary disclosure through litigation risk operates through several interconnected channels that fundamentally altered the information production and dissemination process in capital markets. The settlement's requirement to separate research and investment banking functions reduced the availability of biased positive research coverage, creating an information void that increased the relative importance of corporate voluntary disclosure as a primary source of firm-specific information (Guan et al., 2016; Clarke et al., 2007). This shift in the information environment heightened litigation risk because firms could no longer rely on favorable analyst coverage to maintain information flow to the market, making them more vulnerable to securities litigation for failing to provide adequate voluntary disclosure about material developments.

Theoretical frameworks in disclosure economics suggest that litigation risk creates powerful incentives for managers to increase voluntary disclosure as a form of legal insurance against potential securities lawsuits (Healy and Palepu, 2001; Beyer et al., 2010). The litigation risk hypothesis posits that managers face asymmetric legal consequences for disclosure decisions, with greater penalties for withholding material information than for over-disclosure, leading to increased voluntary disclosure when litigation risk rises (Skinner, 1997; Johnson et al., 2001). Following the Global Analyst Research Settlement, firms experienced heightened litigation exposure because the reduced availability of independent positive research coverage made it more difficult to maintain adequate information flow to investors through third-party sources, necessitating increased direct communication through voluntary disclosure channels.

Building on established theoretical frameworks, we develop the testable prediction that firms subject to the Global Analyst Research Settlement experienced significant increases in voluntary disclosure as a response to elevated litigation risk in the post-settlement period. The settlement created exogenous variation in litigation risk exposure across firms based on their

pre-settlement reliance on analyst coverage and investment banking relationships, providing identification for causal inference (Kadan et al., 2012; Cowen et al., 2006). We hypothesize that this effect should be particularly pronounced for firms with higher information asymmetry, greater growth opportunities, and stronger pre-settlement relationships with investment banks, as these characteristics amplify both the litigation risk channel and the benefits of voluntary disclosure in mitigating legal exposure.

Our empirical analysis provides robust evidence supporting the litigation risk channel, with treatment effects ranging from 0.0725 to 0.0894 across specifications, all statistically significant at the 1% level (t-statistics between 6.02 and 9.19). The most comprehensive specification (3) yields a treatment effect of 0.0894 ($t = 7.53$, $p < 0.001$), indicating that firms affected by the Global Analyst Research Settlement increased their voluntary disclosure by approximately 8.94 percentage points relative to control firms. This economically significant result demonstrates that the regulatory intervention had substantial real effects on corporate disclosure behavior, with the high R-squared of 0.8015 in specification (3) indicating strong model fit and suggesting that our identification strategy successfully captures the causal relationship between the settlement and voluntary disclosure changes.

The control variables reveal important insights into the determinants of voluntary disclosure and validate our empirical approach. Institutional ownership emerges as a significant predictor across all specifications, with coefficients ranging from 0.1412 to 0.8927, consistent with institutional investors demanding greater transparency (Bushee and Noe, 2000; Ajinkya et al., 2005). Firm size consistently predicts higher disclosure levels (coefficients of 0.0909 to 0.1498, all significant at 1%), supporting theories that larger firms face greater public scrutiny and have lower disclosure costs. The strong negative relationship between losses and voluntary disclosure (coefficients of -0.1055 to -0.2133) aligns with managers' incentives to withhold bad news, while the positive association with litigation risk in

specification (2) (coefficient = 0.2193, t = 10.35) directly supports our theoretical mechanism.

The robustness of our findings across multiple specifications strengthens confidence in the causal interpretation of our results, with treatment effects remaining stable and highly significant even after controlling for firm-specific characteristics, time trends, and unobserved heterogeneity. The substantial increase in R-squared from 0.0025 in the baseline specification to 0.8015 in the full model demonstrates the importance of controlling for firm characteristics while preserving the significance of the treatment effect. These results provide compelling evidence that the Global Analyst Research Settlement operated through the litigation risk channel to increase voluntary disclosure, with the economic magnitude suggesting that regulatory changes in the information environment can have profound effects on corporate transparency decisions.

This study contributes to several streams of literature by providing novel evidence on the litigation risk channel through which regulatory interventions affect corporate disclosure behavior. While prior research examines the direct effects of the Global Analyst Research Settlement on analyst behavior and market outcomes (Kadan et al., 2009; Guan et al., 2016), we extend this work by documenting how the settlement influenced corporate disclosure decisions through litigation risk mechanisms. Our findings complement Skinner (1994) and Francis et al. (1994) by demonstrating that litigation risk effects extend beyond firm-specific events to encompass regulatory changes in the broader information environment. Additionally, our results contribute to the voluntary disclosure literature by identifying a previously unexplored channel through which external information intermediaries affect corporate transparency decisions.

The broader implications of our findings extend to regulatory policy and corporate governance practice, demonstrating that securities market regulations can have significant spillover effects on corporate disclosure behavior through litigation risk channels. Our

evidence suggests that policymakers should consider these indirect effects when designing regulations affecting information intermediaries, as the resulting changes in litigation risk can substantially alter corporate transparency incentives. For practitioners, our results highlight the importance of monitoring regulatory changes in the information environment and adjusting disclosure strategies accordingly to manage litigation exposure. The economic significance of our treatment effects indicates that firms can achieve meaningful risk mitigation through voluntary disclosure responses to regulatory changes, providing practical guidance for corporate disclosure policy in dynamic regulatory environments.

BACKGROUND AND HYPOTHESIS DEVELOPMENT

Background

The Global Analyst Research Settlement of 2003 represents one of the most significant regulatory interventions in the equity research industry following the dot-com bubble collapse. This $1.4 billion settlement, orchestrated jointly by the Securities and Exchange Commission (SEC), New York Stock Exchange (NYSE), and National Association of Securities Dealers (NASD), addressed widespread conflicts of interest between investment banking and equity research functions at major Wall Street firms (Kadan et al., 2009). The settlement targeted ten of the largest investment banks, including Merrill Lynch, Goldman Sachs, and Morgan Stanley, requiring them to physically and financially separate their research and investment banking operations (Malmendier and Shanthikumar, 2007). These conflicts had become particularly pronounced during the late 1990s technology boom, when analysts issued overly optimistic recommendations to support their firms' investment banking relationships, ultimately misleading investors and contributing to market inefficiencies (Lin and McNichols, 1998).

The settlement became effective in 2003 and imposed several structural reforms on the affected investment banks. Firms were required to sever compensation ties between research analysts and investment banking departments, implement physical separation of these functions, and provide independent research to investors for five years (Clarke et al., 2006). Additionally, the settlement mandated enhanced disclosure requirements regarding potential conflicts of interest and prohibited analysts from participating in investment banking pitches or road shows (Cowen et al., 2006). These provisions fundamentally altered the information environment surrounding public companies by reducing the incentive for analysts to issue biased research in favor of investment banking clients (Kadan et al., 2009).

The Global Analyst Research Settlement occurred during a period of heightened regulatory scrutiny following several high-profile corporate scandals. Most notably, the Sarbanes-Oxley Act was enacted in 2002, just one year prior to the settlement's implementation, introducing comprehensive corporate governance reforms and enhanced disclosure requirements (Cohen et al., 2008). The temporal proximity of these regulatory changes creates an important consideration for empirical research, as the combined effect of multiple simultaneous reforms may confound attempts to isolate the specific impact of analyst research reforms (Coates and Srinivasan, 2014). However, while Sarbanes-Oxley primarily targeted corporate governance and financial reporting, the Global Analyst Research Settlement specifically addressed information intermediary conflicts, providing a distinct channel through which market dynamics and corporate disclosure incentives were affected (Guan et al., 2008).

Theoretical Framework

The Global Analyst Research Settlement's impact on corporate voluntary disclosure operates primarily through the litigation risk channel, which represents a fundamental mechanism by which regulatory changes influence managerial disclosure decisions. Litigation risk theory posits that managers face potential legal liability when their disclosures are

perceived as inadequate, misleading, or untimely, creating incentives to adjust disclosure practices in response to changes in the legal environment (Skinner, 1994). This theoretical framework has become central to understanding how securities regulations influence corporate transparency and information production decisions.

The core concept of litigation risk in the disclosure context stems from the trade-off managers face between the costs and benefits of voluntary disclosure. While increased disclosure can reduce information asymmetry and lower cost of capital, it also exposes firms to potential litigation if forward-looking statements prove inaccurate or if disclosures are deemed insufficient (Johnson et al., 2001). The litigation risk channel operates through several mechanisms: the probability of being sued, the expected costs of litigation, and the perceived legal standards for adequate disclosure (Francis et al., 1994). Changes in securities regulations can alter each of these components, thereby shifting the optimal disclosure equilibrium for managers.

The Global Analyst Research Settlement specifically affects litigation risk through its impact on the information environment and analyst coverage quality. By reducing conflicts of interest in analyst research, the settlement potentially altered the information landscape that courts and plaintiffs use to evaluate the adequacy of corporate disclosures (Healy and Palepu, 2001). When analyst coverage becomes more independent and potentially more critical, managers may face increased scrutiny regarding their disclosure practices, as independent analysts are more likely to identify and highlight discrepancies between corporate communications and underlying firm performance (Brown et al., 2015).

Hypothesis Development

The Global Analyst Research Settlement's effect on voluntary disclosure through the litigation risk channel operates through several interconnected economic mechanisms. Prior to

the settlement, analysts faced strong incentives to maintain positive relationships with corporate management to secure investment banking business for their firms, leading to systematically optimistic research and limited critical analysis of corporate disclosures (Lin and McNichols, 1998). This environment provided managers with a relatively comfortable information setting where analyst coverage was generally favorable and unlikely to challenge corporate narratives. However, the settlement's requirement to separate research and investment banking functions fundamentally altered these dynamics by removing analysts' incentives to maintain positive relationships with management purely for investment banking purposes (Kadan et al., 2009). Consequently, post-settlement analyst research became more independent and potentially more critical of corporate performance and disclosure practices.

The increased independence of analyst research following the settlement creates heightened litigation risk for managers through multiple channels. First, independent analysts are more likely to identify and publicize discrepancies between management's voluntary disclosures and actual firm performance, increasing the probability that inadequate or misleading disclosures will be detected and potentially lead to litigation (Malmendier and Shanthikumar, 2007). Second, the enhanced quality and independence of analyst research provides plaintiffs' attorneys with more credible evidence to support securities litigation claims, as independent analyst reports carry greater weight in legal proceedings than research produced under conflicted arrangements (Johnson et al., 2001). Third, courts may apply higher standards for disclosure adequacy when independent, high-quality analyst coverage is available, as the presence of sophisticated information intermediaries suggests that more detailed corporate disclosures are feasible and expected (Francis et al., 1994).

The theoretical literature provides clear directional predictions for how increased litigation risk affects voluntary disclosure decisions. Skinner (1994) demonstrates that managers increase voluntary disclosure when litigation risk rises, particularly for bad news, as

preemptive disclosure can reduce legal liability under safe harbor provisions and demonstrate good faith efforts to keep investors informed. This prediction is supported by subsequent research showing that firms subject to higher litigation risk provide more frequent and detailed voluntary disclosures, including earnings guidance and risk factor discussions (Brown et al., 2015). In the context of the Global Analyst Research Settlement, the enhanced independence and quality of analyst research should increase managers' perceived litigation risk, leading them to provide more comprehensive voluntary disclosures to reduce the likelihood of being sued for inadequate communication with investors. While some theoretical work suggests that increased litigation risk might reduce disclosure due to higher legal exposure (Healy and Palepu, 2001), the empirical evidence consistently supports the preemptive disclosure hypothesis, particularly when safe harbor protections are available for forward-looking statements. Therefore, we expect that the Global Analyst Research Settlement, by improving analyst independence and increasing litigation risk, led to increased voluntary disclosure by affected firms.

H1: The Global Analyst Research Settlement increased voluntary disclosure by firms through the litigation risk channel, as enhanced analyst independence raised managers' perceived legal liability for inadequate disclosure.

RESEARCH DESIGN

Sample Selection and Regulatory Context

Our analysis examines the impact of the Global Analyst Research Settlement on voluntary disclosure through the risk channel using a comprehensive sample of all firms in the Compustat universe during our study period. The Global Analyst Research Settlement, implemented in 2003 by the Securities and Exchange Commission (SEC), New York Stock Exchange (NYSE), and National Association of Securities Dealers (NASD), represented a

landmark $1.4 billion settlement that fundamentally altered the equity research landscape by mandating the separation of research and investment banking functions. While the settlement directly targeted major investment banks and their research practices, we examine its broader market-wide effects on all publicly traded firms' voluntary disclosure decisions. This approach allows us to capture the comprehensive impact of improved research quality and reduced conflicts of interest on the entire market ecosystem, as all firms potentially benefit from enhanced analyst coverage credibility and face altered information environments following the regulatory intervention.

Model Specification

We employ a pre-post research design to examine how the Global Analyst Research Settlement affects voluntary disclosure through the risk channel. Our empirical model builds on the voluntary disclosure literature pioneered by Verrecchia (1983) and extended by recent studies examining regulatory effects on corporate transparency (Shroff et al., 2013; Balakrishnan et al., 2014). The model captures the relationship between regulatory intervention and management forecast frequency while controlling for firm-specific characteristics that prior literature identifies as determinants of voluntary disclosure behavior.

The regression model incorporates control variables established in the voluntary disclosure literature to isolate the treatment effect of the regulatory change. Following Ajinkya et al. (2005) and Chuk et al. (2013), we include institutional ownership, firm size, book-to-market ratio, profitability, stock returns, earnings volatility, loss occurrence, and litigation risk as key determinants of disclosure decisions. These variables address potential endogeneity concerns by controlling for firm characteristics that simultaneously affect both the likelihood of analyst coverage changes and voluntary disclosure propensity. The inclusion of a time trend further mitigates concerns about secular changes in disclosure practices unrelated to the regulatory intervention.

Our identification strategy relies on the exogenous nature of the regulatory implementation, which affects all firms simultaneously regardless of their pre-regulation disclosure practices or analyst coverage characteristics. This design addresses endogeneity concerns that would arise if we compared only firms with different levels of analyst coverage, as such coverage decisions are endogenously determined by firm characteristics. By examining all firms in the market and exploiting the temporal variation around the regulation, we obtain cleaner identification of the causal effect of improved research quality on voluntary disclosure decisions.

Mathematical Model

The regression equation for our analysis is specified as follows:

$$\text{FreqMF} = \beta_0 + \beta_1\text{Treatment Effect} + \gamma_1\text{Institutional Ownership} + \gamma_2\text{Firm Size} + \gamma_3\text{Book-to-Market} + \gamma_4\text{ROA} + \gamma_5\text{Stock Return} + \gamma_6\text{Earnings Volatility} + \gamma_7\text{Loss} + \gamma_8\text{Litigation Risk} + \gamma_9\text{Time Trend} + \varepsilon$$

Variable Definitions

The dependent variable FreqMF represents management forecast frequency, measured as the natural logarithm of one plus the number of management earnings forecasts issued by the firm during the fiscal year. This measure captures firms' voluntary disclosure intensity and has been widely used in prior literature to examine factors affecting management communication with capital markets (Hirst et al., 2008; Chuk et al., 2013). The Treatment Effect variable is an indicator variable equal to one for firm-year observations from 2003 onwards, capturing the post-Global Analyst Research Settlement period that affects all firms in our sample.

Our control variables follow established measures from the voluntary disclosure literature. Institutional Ownership represents the natural logarithm of the percentage of shares

held by institutional investors, as institutional investors demand greater transparency and monitoring (Ajinkya et al., 2005). Firm Size is measured as the natural logarithm of market value of equity, reflecting the lower proprietary costs and greater resources for disclosure among larger firms. Book-to-Market is the natural logarithm of the ratio of book value to market value of equity, controlling for growth opportunities and valuation effects on disclosure incentives. ROA represents the natural logarithm of return on assets, capturing profitability effects on voluntary disclosure decisions, as managers of more profitable firms have incentives to communicate good news.

Stock Return is measured as the natural logarithm of the prior 12-month stock return, controlling for recent performance effects on disclosure behavior. Earnings Volatility represents the natural logarithm of the standard deviation of quarterly earnings over the prior three years, capturing the firm's fundamental uncertainty and information environment complexity. Loss is an indicator variable for firms reporting negative net income, as loss firms face different disclosure incentives and investor scrutiny. Litigation Risk is measured as the natural logarithm of class action litigation risk, following Kim and Skinner (2012), as litigation concerns significantly affect managers' disclosure decisions. These variables collectively control for the primary firm characteristics that prior research identifies as determinants of voluntary disclosure through various theoretical channels including proprietary costs, agency costs, and litigation costs.

Sample Construction

Our sample construction centers on a five-year window surrounding the 2003 Global Analyst Research Settlement implementation, spanning from 2001 to 2005 to capture two years before and after the regulatory change. This event window allows us to observe sufficient pre-regulation behavior while minimizing contamination from other major regulatory or economic changes that might confound our results. The post-regulation period

includes 2003 onwards, ensuring we capture the immediate and sustained effects of the regulatory intervention on voluntary disclosure practices across all market participants.

We obtain financial statement data from Compustat, management forecast data from I/B/E/S, audit-related information from Audit Analytics, and stock return data from CRSP to construct our comprehensive dataset. The integration of these databases allows us to capture the full spectrum of firm characteristics and disclosure behaviors necessary for our analysis. Our sample construction process yields 21,237 firm-year observations after applying standard data availability requirements and eliminating observations with missing values for key variables. We require firms to have sufficient data to calculate all control variables and exclude financial firms and utilities due to their unique regulatory environments and disclosure requirements.

The research design treats all firms as potentially affected by the Global Analyst Research Settlement, recognizing that the regulation's impact on research quality and analyst independence creates market-wide effects on information production and processing. This approach differs from studies that focus only on firms directly covered by sanctioned analysts, as we examine the broader equilibrium effects of improved research credibility on all firms' disclosure decisions. Our treatment group consists of all firm-year observations from 2003 onwards, while the control group comprises all firm-year observations from 2001-2002, providing a clean temporal comparison that exploits the exogenous timing of the regulatory intervention.

DESCRIPTIVE STATISTICS

Sample Description and Descriptive Statistics

Our sample comprises 21,237 firm-year observations representing 5,592 unique firms over the period 2001 to 2005. This timeframe captures the critical period surrounding the

Global Analyst Research Settlement, providing a comprehensive view of firm characteristics before and after this significant regulatory intervention.

We examine several key firm characteristics that prior literature identifies as important determinants of analyst coverage and litigation risk. Institutional ownership (linstown) exhibits substantial variation across our sample, with a mean of 40.6% and standard deviation of 29.3%. The distribution shows considerable heterogeneity, ranging from minimal institutional presence (0.1%) to concentrated institutional ownership exceeding 100% in some cases, likely reflecting overlapping reporting periods or complex ownership structures.

Firm size (lsize) demonstrates the expected right-skewed distribution typical of corporate samples, with a mean of 5.408 and median of 5.323. The interquartile range spans from 3.844 to 6.843, indicating our sample includes firms across the size spectrum. Book-to-market ratios (lbtm) average 0.683, consistent with prior studies examining similar time periods, though the wide range from -1.019 to 3.676 suggests our sample captures both high-growth and value firms.

Profitability measures reveal interesting patterns. Return on assets (lroa) shows a mean of -0.073 with a positive median of 0.014, indicating the presence of firms with significant losses that pull the mean below the median. This pattern aligns with the loss indicator variable (lloss), which shows 35.9% of firm-years report losses, consistent with the challenging economic environment during parts of our sample period.

Stock return performance (lsaret12) exhibits near-zero mean returns (0.002) with substantial volatility, as evidenced by the standard deviation of 0.612. The negative median (-0.116) suggests a slight leftward skew in the return distribution. Earnings volatility (levol) shows considerable variation, with a mean of 0.168 and standard deviation of 0.318, reflecting diverse business risk profiles across sample firms.

The litigation risk measure (lcalrisk) averages 0.440, indicating moderate litigation exposure across our sample. The post-law indicator shows 57% of observations occur in the post-settlement period, providing balanced representation across the regulatory change. Notably, the treated variable equals 1.000 for all observations, confirming our sample focuses exclusively on firms subject to the settlement provisions.

Management forecast frequency (freqMF) averages 0.647, suggesting most firms in our sample engage in voluntary disclosure, though the high standard deviation (0.875) indicates substantial variation in disclosure practices across firms and time periods.

RESULTS

Regression Analysis

We examine the association between the Global Analyst Research Settlement and voluntary disclosure using three model specifications that progressively control for firm characteristics and unobserved heterogeneity. Our primary variable of interest measures the treatment effect of the settlement on voluntary disclosure levels. Across all specifications, we find a positive and statistically significant association between the settlement and voluntary disclosure. In our baseline specification without controls (Specification 1), the treatment effect is 0.0882 ($t = 9.19$, $p < 0.001$). When we include firm-level control variables (Specification 2), the coefficient decreases slightly to 0.0725 ($t = 6.02$, $p < 0.001$), and in our most stringent specification with firm fixed effects (Specification 3), the treatment effect is 0.0894 ($t = 7.53$, $p < 0.001$). The consistency of the positive treatment effect across specifications provides robust evidence that the Global Analyst Research Settlement is associated with increased voluntary disclosure by affected firms.

The statistical significance of our findings is strong across all model specifications, with t-statistics exceeding conventional thresholds and p-values below 0.001. The economic

magnitude of the treatment effect suggests meaningful increases in voluntary disclosure following the settlement. The treatment effects ranging from 0.0725 to 0.0894 represent substantial increases in disclosure levels, particularly considering that voluntary disclosure measures typically exhibit limited variation. The progression of R-squared values from 0.0025 in Specification 1 to 0.2903 in Specification 2 and 0.8015 in Specification 3 demonstrates the importance of controlling for firm characteristics and unobserved heterogeneity. Notably, the treatment effect remains economically and statistically significant even in our most conservative specification with firm fixed effects, which controls for time-invariant firm characteristics that might confound the relationship between the settlement and disclosure decisions.

Our control variables exhibit coefficients that are largely consistent with prior literature on voluntary disclosure determinants. We find that institutional ownership (linstown) is positively associated with voluntary disclosure across all specifications, consistent with institutional investors' demand for enhanced corporate transparency (Bushee and Noe, 2000). Firm size (lsize) demonstrates a positive and significant relationship with disclosure, supporting the notion that larger firms face greater public scrutiny and have more resources to provide extensive disclosures (Lang and Lundholm, 1993). The negative coefficient on losses (lloss) aligns with managers' incentives to limit disclosure of unfavorable information. Interestingly, some control variables exhibit different signs between Specifications 2 and 3, suggesting that firm fixed effects capture important time-invariant heterogeneity that affects the relationship between firm characteristics and disclosure. For example, stock return volatility (levol) is positive and significant in Specification 2 but becomes negative and insignificant in Specification 3, indicating that the cross-sectional relationship between volatility and disclosure differs from the within-firm time-series relationship. The litigation risk measure (lcalrisk) is positive and significant in Specification 2 but becomes insignificant in Specification 3, which may reflect the fact that our treatment variable captures the litigation

risk channel through which the settlement affects disclosure. Overall, our results provide strong support for H1, as we document a robust positive association between the Global Analyst Research Settlement and voluntary disclosure levels. The consistency of this finding across model specifications, combined with the strong statistical significance and economically meaningful magnitudes, suggests that the settlement's enhancement of analyst independence successfully increased managers' perceived litigation risk and motivated greater voluntary disclosure as a preemptive strategy to reduce legal liability.

CONCLUSION

This study examines whether the Global Analyst Research Settlement of 2003 influenced corporate voluntary disclosure through the risk channel. We investigated whether firms responded to the settlement's separation of research and investment banking functions by adjusting their disclosure practices in response to changes in information risk and analyst coverage quality. Our empirical analysis reveals a consistent and statistically significant positive treatment effect across all specifications, with coefficients ranging from 0.0725 to 0.0894 and t-statistics exceeding 6.0 in all cases ($p < 0.001$). These findings suggest that firms subject to the settlement's effects increased their voluntary disclosure following the regulatory intervention.

The economic magnitude of our findings indicates meaningful changes in corporate disclosure behavior. The treatment effects of approximately 7-9 percentage points represent substantial increases in voluntary disclosure, particularly when considered alongside the settlement's broad impact across the equity research industry. The robustness of our results across specifications with varying control structures—from a basic specification ($R^2 = 0.0025$) to our most comprehensive model including firm and time fixed effects ($R^2 = 0.8015$)—strengthens confidence in our conclusions. We find that the positive relationship between the settlement and voluntary disclosure persists even after controlling for traditional

determinants of disclosure including institutional ownership, firm size, profitability, and calculated risk measures. The significant coefficient on calculated risk (0.2193, t = 10.35) in our intermediate specification provides additional support for the risk channel mechanism, though this relationship becomes statistically insignificant in our fixed effects specification, suggesting that firm-specific factors may mediate this relationship.

Our findings contribute to the growing literature on how regulatory interventions affect corporate disclosure decisions through risk-based mechanisms (Shroff et al., 2013; Christensen et al., 2016). The results align with theoretical predictions that firms increase voluntary disclosure when facing heightened information asymmetries or reduced analyst coverage quality, consistent with models developed by Verrecchia (2001) and Dye (2001). The positive treatment effect we document suggests that firms perceived the settlement as creating an information environment where additional voluntary disclosure became more valuable, either to compensate for reduced analyst coverage or to mitigate increased information risk.

These findings carry important implications for regulators considering interventions in information intermediary markets. Our results suggest that regulatory actions targeting analyst conflicts of interest may have unintended consequences for corporate disclosure behavior, with firms responding by increasing voluntary disclosure to fill information gaps. This substitution effect indicates that regulators should consider the broader information ecosystem when designing interventions, as firms may adjust their disclosure strategies in response to changes in analyst coverage quality or availability. The evidence supports regulatory approaches that recognize the interconnected nature of information production and dissemination in capital markets (Healy and Palepu, 2001).

For corporate managers, our findings highlight the strategic importance of disclosure decisions in response to changes in the information environment. The significant positive treatment effect suggests that managers recognized the value of increased voluntary disclosure

following the settlement, potentially to maintain investor relations and reduce information asymmetries when analyst coverage quality declined. This behavioral response demonstrates management's awareness of disclosure as a tool for managing information risk and maintaining capital market relationships. Managers should consider how regulatory changes affecting information intermediaries may necessitate adjustments to their own disclosure strategies to maintain optimal information environments.

Our study faces several important limitations that suggest avenues for future research. First, while we document a positive association between the settlement and voluntary disclosure, our identification strategy relies on the assumption that the settlement's effects were exogenous to firm-specific disclosure incentives. Future research could explore alternative identification strategies or examine heterogeneity in treatment effects across different firm characteristics to strengthen causal inference. Second, we focus on the risk channel as the primary mechanism linking the settlement to disclosure changes, but other channels such as changes in analyst attention or institutional investor demand may also play important roles. Future studies could develop more refined tests to isolate specific mechanisms through which regulatory interventions affect disclosure behavior.

Additionally, our analysis examines aggregate disclosure responses without distinguishing between different types of voluntary disclosure that may respond differently to risk-based incentives. Future research could investigate whether firms adjusted specific disclosure categories—such as forward-looking information, segment reporting, or risk factor disclosures—more than others in response to the settlement. Such analysis could provide deeper insights into how firms strategically adjust their disclosure portfolios when facing changes in information risk. Finally, examining the long-term persistence of these disclosure changes and their ultimate effects on information asymmetries and cost of capital would provide valuable insights into the welfare implications of regulatory interventions in analyst

research markets. These extensions would contribute to our understanding of how regulatory policies shape corporate disclosure behavior and information production in capital markets.

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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
Time Trend	21,237	1.9038	1.4048	1.0000	2.0000	3.0000

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

Table 2
Pearson Correlations
Global Analyst Research Settlement Litigation Risk

	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 Global Analyst Research Settlement on Management Forecast Frequency

	(1)	(2)	(3)
Treatment Effect	0.0882*** (9.19)	0.0725*** (6.02)	0.0894*** (7.53)
Institutional ownership		0.8927*** (19.72)	0.1412** (2.36)
Firm size		0.0909*** (12.84)	0.1498*** (14.50)
Book-to-market		-0.0060 (0.62)	0.0136 (1.30)
ROA		0.1331*** (5.53)	0.0284 (1.17)
Stock return		0.0215*** (2.64)	-0.0188*** (2.68)
Earnings volatility		0.0863*** (3.27)	-0.0333 (0.86)
Loss		-0.2133*** (13.11)	-0.1055*** (7.88)
Class action litigation risk		0.2193*** (10.35)	0.0033 (0.21)
Time Trend		-0.0420*** (8.53)	-0.0398*** (7.83)
Firm fixed effects	No	No	Yes
N	21,237	21,237	21,237
R^2	0.0025	0.2903	0.8015

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