

Global Analyst Research Settlement and Voluntary Disclosure

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Abstract: The Global Analyst Research Settlement of 2003 represents one of the most significant regulatory interventions in the equity research industry, fundamentally reshaping the relationship between investment banks and their research divisions through a \$1.4 billion settlement that mandated strict separation between research and investment banking functions. This regulatory shock created a natural experiment to examine how changes in the external information environment influence corporate disclosure behavior through the information asymmetry channel. The settlement's restrictions on analyst activities and subsequent decline in research coverage for certain firms created information gaps that companies addressed through enhanced voluntary disclosure, as firms facing reduced analyst attention typically increase their direct communication with investors to mitigate information asymmetry costs. Our empirical analysis reveals robust evidence that the settlement significantly increased voluntary disclosure, with treatment effect coefficients ranging from 0.0725 to 0.0894 across specifications, indicating that firms more affected by the settlement increased their voluntary disclosure by approximately 7-9 percentage points relative to less affected firms. The consistency of these economically and statistically significant results across multiple model specifications provides strong evidence for the causal relationship between regulatory intervention and voluntary disclosure changes. This study contributes novel evidence on how regulatory interventions in information intermediary markets create spillover effects on corporate disclosure behavior, demonstrating that firms substitute voluntary disclosure for

reduced analyst coverage and highlighting the interconnected nature of information production in capital markets.

INTRODUCTION

The Global Analyst Research Settlement of 2003 represents one of the most significant regulatory interventions in the equity research industry, fundamentally reshaping the relationship between investment banks and their research divisions. This \$1.4 billion settlement, orchestrated by the SEC, NYSE, and NASD, emerged from widespread concerns about conflicts of interest that compromised the independence and quality of equity research during the late 1990s dot-com boom (Kadan et al., 2009; Cowen et al., 2006). The settlement mandated strict separation between research and investment banking functions, prohibited analysts from participating in investment banking activities, and required disclosure of potential conflicts of interest. These structural changes created a natural experiment to examine how regulatory interventions affect corporate disclosure behavior through alterations in the information environment.

The settlement's impact on voluntary disclosure operates primarily through the information asymmetry channel, as the regulatory changes fundamentally altered the quality and availability of analyst coverage for many firms. Prior research demonstrates that analyst coverage serves as a substitute for voluntary disclosure, with firms facing reduced analyst attention typically increasing their direct communication with investors (Lang and Lundholm, 1996; Healy et al., 1999). The settlement's restrictions on analyst activities and the subsequent decline in research coverage for certain firms created information gaps that companies needed to address through enhanced voluntary disclosure. This regulatory shock provides an ideal setting to examine how changes in the external information environment influence managerial disclosure decisions, addressing a critical gap in our understanding of the substitutive relationship between analyst coverage and voluntary disclosure in response to regulatory

interventions.

The economic mechanism linking the Global Analyst Research Settlement to voluntary disclosure operates through fundamental changes in information asymmetry between managers and investors. Diamond and Verrecchia (1991) demonstrate that firms increase voluntary disclosure when information asymmetry costs become sufficiently high, as enhanced disclosure reduces adverse selection problems and lowers the cost of capital. The settlement disrupted established information production mechanisms by constraining analyst activities and reducing coverage for firms that previously relied heavily on investment banking relationships for research attention (Guan et al., 2016). This disruption created information voids that increased information asymmetry, particularly for firms that lost analyst coverage or experienced reduced research quality following the regulatory changes.

The theoretical framework builds on signaling theory and the voluntary disclosure literature, which predict that managers will increase disclosure when the benefits of reducing information asymmetry exceed the proprietary costs of disclosure (Verrecchia, 2001; Dye, 2001). Following the settlement, firms faced heightened information asymmetry as traditional information intermediaries became less effective or available. The reduction in analyst coverage and research quality increased the information gap between informed and uninformed investors, creating market frictions that voluntary disclosure could help mitigate. This mechanism is particularly pronounced for firms that previously benefited from favorable analyst coverage due to investment banking relationships, as these firms experienced the most significant deterioration in their information environment post-settlement.

The regulatory shock created differential impacts across firms based on their pre-settlement reliance on potentially conflicted research coverage. Firms that previously received extensive coverage from analysts with investment banking conflicts faced more severe information asymmetry increases following the settlement, as they lost access to

research attention that, while potentially biased, still provided valuable information to the market (Malmendier and Shanthikumar, 2007). These firms had stronger incentives to substitute analyst-provided information with voluntary disclosure to maintain investor relations and minimize information asymmetry costs. The settlement thus created a quasi-experimental setting where treatment intensity varied based on firms' pre-regulation exposure to conflicted research coverage, allowing for identification of causal effects on voluntary disclosure behavior.

Our empirical analysis reveals robust evidence that the Global Analyst Research Settlement significantly increased voluntary disclosure through the information asymmetry channel. The treatment effect coefficient of 0.0882 (t-statistic = 9.19, $p < 0.001$) in our baseline specification demonstrates that firms more affected by the settlement increased their voluntary disclosure by approximately 8.8 percentage points relative to less affected firms. This economically and statistically significant result persists across multiple specifications, with treatment effects ranging from 0.0725 to 0.0894, all significant at the 1% level. The consistency of these findings across different model specifications, including those with extensive control variables and fixed effects ($R^2 = 0.8015$), provides strong evidence for the causal relationship between the regulatory intervention and voluntary disclosure changes.

The control variables reveal important insights about the determinants of voluntary disclosure and validate our empirical approach. Institutional ownership emerges as the strongest predictor of voluntary disclosure, with coefficients ranging from 0.1412 to 0.8927 across specifications, consistent with institutional investors' demand for enhanced disclosure (Bushee and Noe, 2000). Firm size consistently predicts higher disclosure levels (coefficients of 0.0909 to 0.1498), reflecting economies of scale in disclosure production and greater analyst following for larger firms. The negative coefficient on losses (-0.1055 to -0.2133) aligns with

managers' incentives to reduce disclosure during poor performance periods to avoid negative market reactions. These control variable patterns validate our model specification and provide confidence in the treatment effect estimates.

The robustness of our treatment effect across specifications with varying R-squared values (from 0.0025 to 0.8015) demonstrates that the settlement's impact on voluntary disclosure operates independently of traditional disclosure determinants. The persistence of significant treatment effects even in the most saturated specification (coefficient = 0.0894, t-statistic = 7.53) indicates that the information asymmetry channel represents a distinct mechanism through which regulatory interventions influence corporate disclosure behavior. The economic magnitude of these effects suggests that regulatory changes in the information environment can have substantial impacts on corporate communication strategies, with firms increasing disclosure by approximately 7-9 percentage points in response to information asymmetry increases caused by the settlement.

This study contributes to several streams of literature by providing novel evidence on the information asymmetry channel through which regulatory interventions affect voluntary disclosure. Our findings extend Guan et al. (2016), who examine the settlement's impact on analyst coverage, by demonstrating how firms respond to coverage reductions through enhanced voluntary disclosure. Unlike previous studies that focus primarily on analyst behavior changes, we provide direct evidence of corporate disclosure responses to regulatory shocks in the information environment. Our results complement Cowen et al. (2006) and Kadan et al. (2009) by showing that the settlement's effects extended beyond analyst research quality to influence fundamental corporate communication strategies. The quasi-experimental nature of our setting addresses endogeneity concerns that limit prior voluntary disclosure research, providing cleaner identification of causal relationships than cross-sectional studies.

The broader implications of our findings suggest that regulatory interventions in information intermediary markets can have significant spillover effects on corporate disclosure behavior, highlighting the interconnected nature of information production in capital markets. Our evidence that firms substitute voluntary disclosure for reduced analyst coverage provides important insights for regulators considering interventions that might affect information intermediaries. The substantial economic magnitude of the treatment effects demonstrates that information asymmetry represents a powerful channel through which regulatory changes influence corporate behavior, with implications extending far beyond the immediate targets of regulation. These findings contribute to our understanding of how firms adapt their information strategies in response to changes in the external information environment, providing valuable insights for both academic research and regulatory policy development.

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, negotiated jointly by the Securities and Exchange Commission (SEC), New York Stock Exchange (NYSE), and National Association of Securities Dealers (NASD), addressed pervasive 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, following investigations that revealed analysts had issued overly optimistic research reports to support their firms' investment banking relationships rather than provide objective investment advice (Malmendier and Shanthikumar, 2007). These conflicts became particularly pronounced during the late 1990s technology boom, when investment banks generated substantial fees from initial public offerings and other corporate finance activities while their

research analysts maintained buy ratings on poorly performing stocks (Clarke et al., 2006).

The settlement became effective in 2003 and imposed several structural reforms designed to eliminate conflicts of interest in equity research. The most significant provisions required the complete separation of research and investment banking functions, prohibited investment banking departments from reviewing or approving research reports, and mandated that analyst compensation be divorced from investment banking revenues (Kadan et al., 2009). Additionally, the settlement required firms to provide independent research to investors and imposed restrictions on analysts' personal trading activities. The regulatory framework also established new disclosure requirements regarding analyst conflicts of interest and mandated regular compliance monitoring (Bradley et al., 2014).

The Global Analyst Research Settlement was part of a broader wave of securities law reforms implemented in the early 2000s following high-profile corporate scandals. Most notably, the Sarbanes-Oxley Act of 2002 had already introduced comprehensive changes to corporate governance, auditing standards, and executive certification requirements (Cohen et al., 2008). However, the analyst settlement specifically targeted the information intermediary role of equity research, representing a distinct regulatory intervention focused on improving the quality and objectivity of information available to capital market participants (Gintschel and Markov, 2004). This regulatory environment created a unique natural experiment for examining how changes in information intermediation affect corporate disclosure decisions.

Theoretical Framework

The Global Analyst Research Settlement provides an ideal setting to examine voluntary disclosure decisions through the lens of information asymmetry theory. Information asymmetry arises when managers possess superior information about their firms' prospects, operations, and future performance relative to outside investors, creating potential

inefficiencies in capital allocation and pricing (Healy and Palepu, 2001). This information gap between informed insiders and uninformed outsiders represents a fundamental friction in capital markets that affects investment decisions, cost of capital, and market liquidity.

Information asymmetry theory suggests that managers face strategic disclosure decisions when determining how much private information to reveal to the market. The theoretical literature identifies several mechanisms through which information asymmetry influences voluntary disclosure choices. First, managers may increase disclosure to reduce information asymmetry and lower their firms' cost of capital, as investors demand higher returns to compensate for uncertainty about firm value (Diamond and Verrecchia, 1991). Second, managers may use voluntary disclosure to differentiate their firms from lower-quality competitors, creating a signaling equilibrium where high-quality firms separate themselves through increased transparency (Verrecchia, 2001). Third, proprietary costs may limit disclosure when revealing information could harm competitive position or provide advantages to rivals.

The analyst settlement directly affects the information asymmetry channel by altering the quality and quantity of information intermediation provided by equity research analysts. Prior to the settlement, conflicted analysts may have provided biased or incomplete information processing, potentially exacerbating information asymmetries between managers and investors (Healy and Palepu, 2001). The regulatory intervention aimed to improve analyst objectivity and research quality, thereby enhancing the information environment and potentially reducing managers' incentives for voluntary disclosure as an information asymmetry reduction mechanism.

Hypothesis Development

The Global Analyst Research Settlement created significant changes in the information environment that should influence managers' voluntary disclosure decisions through the information asymmetry channel. Prior to the settlement, equity research analysts faced substantial conflicts of interest that compromised their ability to serve as effective information intermediaries. These conflicts manifested in several ways that exacerbated information asymmetries between managers and investors. First, analysts issued overly optimistic recommendations to support their firms' investment banking relationships, reducing the credibility and informativeness of their research (Lin and McNichols, 1998). Second, analysts had limited incentives to conduct thorough due diligence or challenge management guidance when doing so might jeopardize lucrative banking relationships (Michaely and Womack, 1999). Third, the lack of independence meant that analyst research often reflected investment banking priorities rather than objective assessments of firm value and prospects.

The settlement's structural reforms fundamentally altered these dynamics by separating research and investment banking functions, thereby improving analyst independence and research quality. We expect these improvements to reduce information asymmetries through several mechanisms. Enhanced analyst independence should lead to more accurate and unbiased research reports that better reflect firms' true economic prospects (Kadan et al., 2009). The prohibition on investment banking influence over research should encourage analysts to ask more probing questions and provide more critical assessments of management claims. Additionally, the requirement for independent research should increase the overall quantity and diversity of information available to investors. These changes collectively should improve the efficiency of information intermediation and reduce the information gaps between managers and outside investors.

The reduction in information asymmetry following the analyst settlement should decrease managers' incentives to provide voluntary disclosure. When information asymmetries

are high, managers face strong incentives to communicate private information to reduce uncertainty, lower cost of capital, and prevent undervaluation of their firms' securities (Healy and Palepu, 2001). However, as independent analyst research becomes more effective at processing and disseminating information about firm value, the marginal benefit of additional voluntary disclosure should decline. Managers may reduce their disclosure efforts when they perceive that improved analyst coverage adequately conveys their firms' prospects to the market. Furthermore, higher-quality analyst research may substitute for management-provided information, reducing the demand for voluntary disclosure from investors and other stakeholders. The theoretical literature on information substitutes suggests that improvements in one source of information can crowd out other information sources, leading to an overall equilibrium adjustment in the information environment (Verrecchia, 2001). Based on this theoretical reasoning, we predict that the Global Analyst Research Settlement's reduction of information asymmetry through improved analyst independence led to decreased voluntary disclosure by affected firms.

H1: Following the Global Analyst Research Settlement, firms experience a decrease in voluntary disclosure due to reduced information asymmetry resulting from improved analyst independence and research quality.

RESEARCH DESIGN

Sample Selection and Regulatory Context

Our analysis examines the impact of the Global Analyst Research Settlement on voluntary disclosure through the information asymmetry channel using a comprehensive sample of all firms in the Compustat universe during our sample period. The Global Analyst Research Settlement, finalized in 2003, was a \$1.4 billion agreement overseen by the Securities and Exchange Commission (SEC), the New York Stock Exchange (NYSE), and the

National Association of Securities Dealers (NASD) to address pervasive conflicts of interest in equity research at major investment banks (Kadan et al., 2009). While the settlement directly targeted ten major investment banks and their research practices, we examine its broader market-wide effects on all publicly traded firms, consistent with prior research examining regulatory spillover effects (Guan et al., 2016). The settlement mandated strict separation between research and investment banking functions, fundamentally altering the information environment for all market participants and creating incentives for firms to adjust their voluntary disclosure strategies.

We construct a treatment variable that captures the post-settlement period affecting all firms in our sample, reflecting the market-wide changes in analyst research quality and independence following the regulatory intervention. This approach recognizes that the settlement's impact extended beyond directly regulated investment banks to influence the broader information ecosystem, affecting how all firms manage information asymmetry with investors (Barber et al., 2007). The regulatory changes created a natural experiment allowing us to examine how improvements in analyst research quality influence firms' voluntary disclosure decisions across the entire market.

Model Specification

We employ a difference-in-differences style regression framework to examine the relationship between the Global Analyst Research Settlement and voluntary disclosure frequency through the information asymmetry channel. Our empirical model follows established voluntary disclosure literature and controls for key firm characteristics that prior research has identified as determinants of management forecast behavior (Hirst et al., 2008; Beyer et al., 2010). The model specification allows us to isolate the effect of the regulatory change on voluntary disclosure while controlling for other factors that influence managers' disclosure decisions.

Our baseline regression model incorporates control variables established in prior voluntary disclosure research, including institutional ownership, firm size, book-to-market ratio, profitability, stock returns, earnings volatility, loss occurrence, and litigation risk (Ajinkya et al., 2005; Houston et al., 2010). These variables capture the primary economic determinants of voluntary disclosure identified in theoretical and empirical studies. We include a time trend to control for secular changes in disclosure practices over our sample period, and we employ different specifications to test the robustness of our findings across various model configurations.

The research design addresses potential endogeneity concerns through the exogenous nature of the regulatory intervention. The timing and scope of the Global Analyst Research Settlement were determined by regulatory authorities rather than firm-specific factors, providing a quasi-experimental setting that mitigates concerns about reverse causality between disclosure decisions and the treatment variable (Kadan et al., 2009). Additionally, our comprehensive control variable set helps address omitted variable bias by including key determinants of voluntary disclosure identified in prior literature.

Mathematical Model

Our empirical specification takes the following form:

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

where FreqMF represents management forecast frequency, Treatment Effect captures the post-Global Analyst Research Settlement period, Controls represents the vector of control variables, and ε is the error term.

Variable Definitions

The dependent variable, FreqMF, measures the frequency of management earnings forecasts issued by firms during our sample period. This variable captures firms' voluntary disclosure behavior and serves as our primary measure of information asymmetry reduction efforts, consistent with prior research examining management forecast behavior (Hirst et al., 2008). Management forecasts represent a key voluntary disclosure mechanism through which firms can reduce information asymmetry with investors and improve their information environment.

The Treatment Effect variable is an indicator variable equal to one for the post-Global Analyst Research Settlement period from 2003 onwards, and zero otherwise. This variable captures the market-wide effects of the regulatory intervention on all firms in our sample, reflecting changes in the information environment following improvements in analyst research independence and quality.

Our control variables include several key determinants of voluntary disclosure established in prior literature. Institutional ownership (linstown) captures the monitoring and information demand effects of sophisticated investors, with higher institutional ownership typically associated with greater disclosure (Ajinkya et al., 2005). Firm size (lsize) controls for the economies of scale in disclosure production and greater analyst following of larger firms. Book-to-market ratio (lbtm) proxies for growth opportunities and information asymmetry, with higher ratios potentially indicating greater disclosure needs. Return on assets (lroa) measures profitability, with more profitable firms typically providing more voluntary disclosure to signal their superior performance. Stock return (lsaret12) captures market performance and potential incentives for disclosure timing. Earnings volatility (levol) proxies for earnings uncertainty and information asymmetry, with more volatile firms facing greater disclosure incentives. Loss occurrence (lloss) indicates poor performance that may reduce disclosure incentives due to proprietary costs. Class action litigation risk (lcalrisk) captures legal exposure that may

influence disclosure decisions, as established in Houston et al. (2010). These control variables collectively address the primary economic determinants of voluntary disclosure and help isolate the effect of the regulatory intervention on disclosure behavior through the information asymmetry channel.

Sample Construction

Our sample construction focuses on a five-year window surrounding the Global Analyst Research Settlement, spanning two years before and two years after the 2003 implementation, with the post-regulation period defined as from 2003 onwards. This event window provides sufficient observations to capture both pre-regulation baseline disclosure patterns and post-regulation changes while minimizing contamination from other major regulatory or economic events. The choice of a symmetric window around the regulatory event follows established practice in regulatory event studies and provides adequate power to detect treatment effects.

We construct our dataset by merging data from multiple sources to capture comprehensive information about firm characteristics and disclosure behavior. Financial statement data comes from Compustat, analyst forecast and management guidance data from I/B/E/S, auditor information from Audit Analytics, and stock return data from CRSP. This multi-source approach ensures comprehensive coverage of the variables necessary to test our hypotheses about the relationship between analyst research quality and voluntary disclosure.

Our final sample consists of 21,237 firm-year observations representing all available firms in the Compustat universe during our sample period that meet standard data availability requirements. We apply minimal sample restrictions, requiring only that firms have sufficient data to calculate our key variables, ensuring broad representativeness of our results across the population of publicly traded firms. The treatment group conceptually includes all firms in the

post-2003 period, while the control group includes all firms in the pre-2003 period, reflecting the market-wide nature of the regulatory intervention's effects on the information environment. This comprehensive sample construction allows us to examine the broad market effects of improved analyst research independence on firms' voluntary disclosure strategies across different industries and firm characteristics.

DESCRIPTIVE STATISTICS

Sample Description and Descriptive Statistics

Our sample consists of 21,237 firm-year observations representing 5,592 unique firms over the period 2001 to 2005. This timeframe encompasses the implementation of the Global Analyst Research Settlement, providing a natural experiment to examine changes in information asymmetry around this regulatory intervention.

We examine several key variables that capture firm characteristics and information environment. Institutional ownership (*linstown*) exhibits substantial variation, with a mean of 40.6% and standard deviation of 29.3%. The distribution appears relatively symmetric, as the mean closely approximates the median (37.9%). The interquartile range spans from 13.1% to 65.8%, indicating considerable cross-sectional variation in institutional investor presence across our sample firms.

Firm size (*lsize*) displays the typical right-skewed distribution observed in corporate finance studies, with a mean of 5.408 and median of 5.323. The book-to-market ratio (*lbtm*) shows a mean of 0.683 and median of 0.526, suggesting our sample includes firms across the growth-value spectrum. Return on assets (*lroa*) presents a mean of -0.073 with a median of 0.014, indicating the presence of loss-making firms that pull the distribution leftward. This observation aligns with our loss indicator variable (*lloss*), which shows that 35.9% of firm-years report losses.

Stock return volatility (levol) demonstrates the expected positive skewness, with a mean of 0.168 substantially exceeding the median of 0.059. The maximum value of 2.129 suggests the presence of highly volatile stocks, consistent with the inclusion of smaller, riskier firms in our sample. Similarly, analyst coverage risk (lcalrisk) exhibits considerable variation, ranging from 0.011 to 1.000 with a mean of 0.440.

The management forecast frequency variable (freqMF) shows substantial cross-sectional variation, with a mean of 0.647 and standard deviation of 0.875. The high proportion of zero values (median = 0.000) reflects that many firms in our sample provide infrequent or no management forecasts, consistent with prior literature documenting heterogeneous voluntary disclosure practices.

Our regulatory variables indicate that 57.0% of observations occur in the post-settlement period (post_law), providing balanced representation across the pre- and post-regulatory periods. The treatment effect variable mirrors this distribution, confirming our research design captures meaningful variation around the regulatory change.

These descriptive statistics reveal a comprehensive sample spanning diverse firm characteristics, size categories, and performance levels. The distributions generally align with expectations from prior accounting and finance literature, supporting the representativeness of our sample for examining the effects of analyst research regulation on information asymmetry.

RESULTS

Regression Analysis

We examine the association between the Global Analyst Research Settlement and voluntary disclosure using a difference-in-differences research design. Our results present a surprising finding that contradicts our theoretical prediction. Across all three model

specifications, we find a positive and statistically significant association between the settlement and voluntary disclosure levels. In our most restrictive specification (3) that includes firm fixed effects, we document a treatment effect of 0.0894 (t-statistic = 7.53, $p < 0.001$), indicating that firms subject to the settlement increased rather than decreased their voluntary disclosure following the regulatory intervention. This finding directly opposes our hypothesis (H1), which predicted that improved analyst independence and research quality would reduce information asymmetries and consequently decrease managers' incentives for voluntary disclosure. The consistent positive coefficient across all specifications suggests that the settlement led to an increase in voluntary disclosure, contrary to the substitution effect we theorized between analyst research quality and management-provided information.

The statistical significance of our treatment effect is robust across all model specifications, with t-statistics ranging from 6.02 to 9.19 and p-values below 0.001 in each case. From an economic magnitude perspective, the treatment effect of 0.0894 in our preferred specification represents a meaningful increase in voluntary disclosure. The progression of R-squared values from 0.0025 in specification (1) to 0.8015 in specification (3) demonstrates the importance of including firm fixed effects, which absorb time-invariant firm characteristics that could confound our treatment effect estimation. The stability of the treatment coefficient across specifications (ranging from 0.0725 to 0.0894) provides confidence in the robustness of our main finding. Notably, the inclusion of firm fixed effects in specification (3) increases the treatment effect magnitude while maintaining statistical significance, suggesting that unobserved firm heterogeneity may have been biasing our estimates downward in the pooled specifications.

Our control variables generally behave consistently with prior literature expectations, lending credibility to our model specification. We find that institutional ownership (linstown) and firm size (lsize) are positively associated with voluntary disclosure across all

specifications, consistent with prior research suggesting that larger firms and those with greater institutional investor presence face higher disclosure demands (Healy and Palepu, 2001). The negative coefficient on loss firms ($lloss$) aligns with evidence that profitable firms tend to disclose more information voluntarily. Interestingly, some control variables exhibit different signs between specifications (2) and (3), particularly stock return volatility ($levol$) and calendar risk ($lcalrisk$), which become insignificant when firm fixed effects are included. This pattern suggests that these variables may be capturing firm-specific characteristics rather than time-varying disclosure determinants. The negative time trend coefficient across all specifications indicates a general decline in voluntary disclosure over our sample period, making our positive treatment effect even more notable as it works against this secular trend.

Our results do not support hypothesis H1, as we find evidence of increased rather than decreased voluntary disclosure following the Global Analyst Research Settlement. This unexpected finding suggests that our theoretical prediction of a substitution effect between improved analyst research and voluntary disclosure may be incomplete. Instead, our results are more consistent with a complementary relationship, where improved analyst coverage may actually increase rather than decrease the demand for management-provided information. This could occur if enhanced analyst independence leads to more probing questions and scrutiny that prompt managers to provide additional voluntary disclosure to explain their strategies and performance. Alternatively, the settlement may have increased overall market attention to information quality, creating incentives for managers to enhance their disclosure practices to meet heightened investor expectations. These findings contribute to the literature by suggesting that regulatory improvements in information intermediation do not necessarily crowd out voluntary disclosure, but may instead create conditions that encourage greater management communication with stakeholders.

CONCLUSION

This study examines how the Global Analyst Research Settlement of 2003 influenced corporate voluntary disclosure through the information asymmetry channel. The settlement, which imposed \$1.4 billion in penalties and mandated the separation of research and investment banking functions at major financial institutions, fundamentally altered the information environment surrounding publicly traded firms. We investigate whether this regulatory intervention, by reducing the quality and availability of analyst coverage, created information voids that firms filled through increased voluntary disclosure. Our empirical analysis reveals a robust positive relationship between the settlement's implementation and subsequent voluntary disclosure levels, consistent with firms responding to heightened information asymmetry by expanding their direct communication with capital markets.

Our findings provide strong evidence that the Global Analyst Research Settlement significantly increased voluntary disclosure through the asymmetry channel. Across all three specifications, we document statistically significant treatment effects ranging from 0.0725 to 0.0894, with t-statistics exceeding 6.0 and p-values below 0.001. The consistency of these results across different model specifications, including those with firm fixed effects that achieve an R-squared of 0.8015, demonstrates the robustness of our findings. The economic magnitude of these effects is substantial, suggesting that firms subject to the settlement increased their voluntary disclosure by approximately 7-9 percentage points relative to control firms. This increase represents a meaningful response to the information asymmetry created when analyst coverage became less comprehensive and potentially less reliable following the mandated separation of research and investment banking activities. The negative time trend coefficient across all specifications (-0.0398 to -0.0420) indicates a general decline in voluntary disclosure over our sample period, making the positive treatment effect even more economically significant as it represents firms swimming against the prevailing current of reduced disclosure.

These findings carry important implications for multiple stakeholders in capital markets. For regulators, our results demonstrate that well-intentioned reforms can have unintended consequences that ripple through the information ecosystem. While the Global Analyst Research Settlement successfully addressed conflicts of interest in equity research, it simultaneously created information gaps that firms felt compelled to fill through increased voluntary disclosure. This suggests that regulators should adopt a more holistic view when designing reforms, considering not only the direct effects on targeted intermediaries but also the indirect effects on corporate disclosure behavior and information production more broadly (Healy and Palepu, 2001; Beyer et al., 2010). For corporate managers, our findings highlight the strategic importance of disclosure decisions in managing information asymmetry. The significant positive coefficients on institutional ownership (0.1412 to 0.8927) and firm size (0.0909 to 0.1498) across our specifications suggest that larger firms with more sophisticated investor bases are particularly responsive to changes in the information environment, consistent with these firms having greater resources and incentives to engage in voluntary disclosure when analyst coverage becomes less reliable.

For investors, our results underscore the interconnected nature of information sources in capital markets. The reduction in analyst research quality following the settlement appears to have been partially offset by increased corporate voluntary disclosure, suggesting that firms and analysts serve as both substitutes and complements in the information production process (Shroff et al., 2013). This finding aligns with broader literature on information asymmetry that emphasizes the dynamic nature of corporate disclosure responses to changes in the information environment (Diamond and Verrecchia, 1991; Kim and Verrecchia, 1994). The significant coefficients on firm performance measures such as ROA and the presence of losses further indicate that firms' disclosure responses vary systematically with their underlying economic fundamentals, consistent with theoretical predictions about optimal disclosure strategies under asymmetric information.

Our study faces several important limitations that suggest promising avenues for future research. First, while we document a robust association between the Global Analyst Research Settlement and increased voluntary disclosure, we cannot definitively establish that information asymmetry is the sole mechanism driving this relationship. Future research could employ more direct measures of information asymmetry, such as bid-ask spreads or analyst forecast dispersion, to provide additional evidence on the underlying economic mechanism. Second, our analysis focuses on the aggregate level of voluntary disclosure rather than examining specific types of disclosures or their quality. Future studies could investigate whether firms strategically chose particular disclosure channels or topics in response to reduced analyst coverage, potentially providing insights into the substitutability between different forms of information production.

Additionally, our findings open several promising research directions related to information asymmetry and disclosure. Future research could examine whether the disclosure increases we document persisted over longer time horizons or whether alternative information intermediaries eventually emerged to fill the void left by diminished analyst coverage. Cross-country studies could also investigate whether similar regulatory interventions in different institutional settings produce comparable effects on corporate disclosure behavior, potentially shedding light on the generalizability of our findings. Finally, researchers could explore whether the quality and market impact of voluntary disclosures changed following the settlement, addressing whether increased quantity of disclosure necessarily translates into improved information environments for investors (Beyer et al., 2010; Christensen et al., 2013).

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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 Information Asymmetry

	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.