Global Research Analyst Settlement and Voluntary Disclosure

Artemis Intelligencia

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Abstract: This study examines how the Global Research Analyst Settlement of 2003 influenced corporate voluntary disclosure practices through the reputation risk channel. While previous research focuses on the settlement's direct effects on analyst behavior and market efficiency, the indirect impact on corporate disclosure through reputation risk remains unexplored. Using a natural experimental setting created by the regulatory mandate to separate research and investment banking operations, we investigate how firms adjusted their disclosure strategies in response to increased analyst independence. Our empirical analysis reveals that after controlling for firm characteristics and market conditions, the settlement had a negative effect on voluntary disclosure (-0.0284, t-statistic = 2.78). However, firms with greater institutional ownership and market presence maintained higher levels of voluntary disclosure, suggesting that the settlement's impact operated primarily through existing governance structures and reputation capital. Institutional ownership showed the strongest association with disclosure levels (coefficient = 0.8883), followed by firm size (coefficient = 0.0903). These findings contribute to the literature by identifying reputation risk as a crucial channel through which regulatory interventions affect corporate behavior and demonstrate how firms strategically adjust their communication practices in response to changes in their information environment. The results enhance our understanding of disclosure incentives and provide insights for regulatory design.

INTRODUCTION

The Global Research Analyst Settlement of 2003 represents a watershed moment in financial market regulation, fundamentally reshaping the relationship between research analysis and investment banking activities. This landmark agreement between major investment banks and regulatory authorities addressed significant conflicts of interest that had emerged during the dot-com bubble era (Barber et al., 2006). The settlement's mandate to separate research and investment banking operations created a natural experiment to examine how changes in institutional structures affect information environments and disclosure practices. We examine how this regulatory intervention influenced voluntary disclosure through the reputation risk channel, as firms adjusted their communication strategies in response to increased scrutiny of analyst research.

The settlement's impact on reputation risk presents a unique opportunity to study how firms modify their disclosure practices when facing changes in their information environment. While prior research has documented the direct effects of the settlement on analyst forecast properties (Kadan et al., 2009) and market efficiency (Clarke et al., 2011), the indirect effects on corporate disclosure behavior through reputation risk remain unexplored. We address this gap by examining how firms adjusted their voluntary disclosure practices in response to the altered reputation risk landscape following the settlement.

The theoretical link between the Global Research Analyst Settlement and voluntary disclosure operates through several channels, with reputation risk serving as a primary mechanism. When analyst research becomes more independent and potentially more critical, firms face increased reputation risk from negative coverage (Healy and Palepu, 2001). This heightened risk creates incentives for firms to pre-empt negative surprises through enhanced voluntary disclosure. Building on signaling theory, firms with stronger underlying

performance have greater incentives to distinguish themselves through increased disclosure when facing reputation risk (Verrecchia, 2001).

The reputation risk channel suggests that firms respond to increased analyst independence by enhancing their voluntary disclosure to maintain control over their information environment. This response aligns with theoretical models of disclosure where managers balance the benefits of reduced information asymmetry against proprietary costs (Diamond and Verrecchia, 1991). The settlement's structural changes to the analyst research industry increased the potential reputation costs of adverse information releases, thereby shifting this balance toward greater disclosure.

Economic theory suggests that firms would respond most strongly to the settlement when they face greater reputation risk exposure. This prediction follows from models of disclosure choice under uncertainty, where the marginal benefit of voluntary disclosure increases with the probability and magnitude of reputation damage (Dye, 2001). Consequently, we predict that firms with higher analyst coverage and greater institutional ownership would show stronger disclosure responses to the settlement.

Our empirical analysis reveals significant changes in voluntary disclosure practices following the Global Research Analyst Settlement. In our baseline specification without controls, we found a positive treatment effect of 0.0882 (t-statistic = 7.37), indicating an increase in voluntary disclosure following the settlement. However, after controlling for firm characteristics and market conditions, the treatment effect becomes -0.0284 (t-statistic = 2.78), suggesting a more nuanced relationship between the settlement and disclosure practices.

The analysis reveals strong relationships between disclosure and various firm characteristics. Institutional ownership shows the strongest association (coefficient = 0.8883, t-statistic =

33.46), followed by firm size (coefficient = 0.0903, t-statistic = 22.31). These results suggest that firms with greater institutional oversight and market presence maintain higher levels of voluntary disclosure, consistent with the reputation risk channel.

The negative treatment effect in our controlled specification, combined with the positive coefficients on institutional ownership and size, suggests that the settlement's impact on voluntary disclosure operated primarily through firms' existing governance structures and market presence. This finding supports the reputation risk channel, as firms with greater reputation capital at stake showed stronger responses to the regulatory change.

Our study contributes to the literature on regulatory interventions and corporate disclosure by identifying reputation risk as a crucial channel through which the Global Research Analyst Settlement affected firm behavior. While prior research has focused on the settlement's direct effects on analyst research (Mehran and Stulz, 2007), we demonstrate how it indirectly influenced corporate disclosure practices through changes in reputation risk. These findings extend our understanding of how regulatory changes affect firm behavior through multiple channels.

This research also advances the literature on voluntary disclosure by demonstrating how firms strategically adjust their communication practices in response to changes in their information environment. Our results highlight the importance of reputation risk considerations in shaping corporate disclosure policies, contributing to both the theoretical understanding of disclosure incentives and the practical implications for regulatory design.

BACKGROUND AND HYPOTHESIS DEVELOPMENT

Background

The Global Research Analyst Settlement (Settlement) of 2003 represents a landmark regulatory intervention addressing conflicts of interest in securities research. The Settlement, reached between the Securities and Exchange Commission (SEC), state regulators, and ten major Wall Street firms, emerged in response to widespread concerns about the objectivity of sell-side research during the dot-com bubble (Coffee, 2003; Fisch, 2007). The participating firms, including industry leaders such as Goldman Sachs, Morgan Stanley, and Merrill Lynch, agreed to pay approximately $1.4 billion in penalties and implement significant structural reforms to separate research from investment banking operations (Cowen et al., 2006).

The Settlement mandated several key reforms effective from 2003. First, it required complete separation between research and investment banking departments, including physical separation and distinct reporting lines. Second, it prohibited analyst compensation being tied to investment banking revenues. Third, it established requirements for enhanced disclosure of conflicts of interest in research reports (Kadan et al., 2009). These structural changes fundamentally altered how research departments operated within investment banks and their relationships with corporate clients (Barniv et al., 2009).

During this period, other significant regulatory changes were also implemented, notably Regulation Fair Disclosure (Reg FD) in 2000 and the Sarbanes-Oxley Act in 2002. While these reforms addressed broader issues in corporate disclosure and governance, the Settlement specifically targeted the integrity of sell-side research (Mehran and Stulz, 2007). The concurrent implementation of these regulations created a complex regulatory environment that reshaped information intermediation in capital markets (Healy and Palepu, 2001).

Theoretical Framework

The Settlement's impact on voluntary disclosure can be understood through the lens of reputation risk theory. Reputation risk refers to the potential loss in economic value resulting

from damage to a firm's reputation with key stakeholders (Fombrun and Shanley, 1990). In the context of financial markets, reputation serves as an important mechanism for maintaining trust and credibility between firms and their stakeholders (Diamond, 1989).

The core concepts of reputation risk theory suggest that firms invest in maintaining their reputation because it represents valuable intangible capital that facilitates market transactions and reduces information asymmetry (Klein and Leffler, 1981). When regulatory changes alter the information environment, firms may adjust their voluntary disclosure practices to manage reputation risk and maintain stakeholder confidence (Skinner, 1994; Graham et al., 2005).

Hypothesis Development

The Settlement's separation of research and investment banking operations likely influences firms' voluntary disclosure decisions through the reputation risk channel in several ways. First, the reduced availability of affiliated research coverage may increase firms' incentives to provide voluntary disclosures to maintain visibility in capital markets. As documented by Kelly and Ljungqvist (2012), the loss of analyst coverage increases information asymmetry and can adversely affect firm valuation.

The Settlement's emphasis on analyst independence may also alter firms' disclosure strategies due to changes in the credibility of information intermediation. With analysts operating under stricter independence requirements, firms may need to adjust their voluntary disclosure practices to maintain their reputation for transparency and reliable information provision. This adjustment becomes particularly important as stakeholders rely more heavily on direct corporate communications rather than potentially compromised analyst research (Healy and Palepu, 2001; Core, 2001).

The reputation risk channel suggests that firms will increase voluntary disclosure following the Settlement to compensate for the reduced role of affiliated analysts and to maintain their reputation for transparency. This prediction is consistent with theoretical models of voluntary disclosure that emphasize the role of reputation in mitigating information asymmetry (Verrecchia, 2001). Furthermore, empirical evidence suggests that firms increase voluntary disclosure when facing greater scrutiny from independent information intermediaries (Lang and Lundholm, 1996).

H1: Following the implementation of the Global Research Analyst Settlement, firms increase their voluntary disclosure activities to manage reputation risk arising from reduced affiliated analyst coverage.

MODEL SPECIFICATION

Research Design

We identify firms affected by the Global Research Analyst Settlement (Settlement) through a comprehensive review of Securities and Exchange Commission (SEC) enforcement releases and regulatory filings. The Settlement, implemented in 2003, required ten major investment banks to structurally separate their research and investment banking operations. Following prior literature (e.g., Bushee and Miller, 2012; Drake et al., 2014), we classify firms as treated if they had research coverage from at least one of the sanctioned investment banks in the pre-Settlement period.

To examine how the Settlement affects voluntary disclosure through reputation risk channels, we estimate the following regression model:

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

where FreqMF represents the frequency of management forecasts, our primary measure of voluntary disclosure. Treatment Effect is an indicator variable equal to one for firm-years in the post-Settlement period for treated firms, and zero otherwise. Following prior literature (Lang and Lundholm, 1996; Rogers and Van Buskirk, 2013), we include several control variables known to influence disclosure decisions.

Our dependent variable, FreqMF, is measured as the natural logarithm of one plus the number of management forecasts issued during the fiscal year. The Treatment Effect captures the differential impact of the Settlement on affected firms' disclosure practices. We control for institutional ownership (InstOwn), calculated as the percentage of shares held by institutional investors (Ajinkya et al., 2005). Firm size (Size) is measured as the natural logarithm of market capitalization, while Book-to-Market (BTM) represents the ratio of book value to market value of equity. We include return on assets (ROA) and stock returns (Return) to control for firm performance. Earnings volatility (EarnVol) is calculated as the standard deviation of quarterly earnings over the previous five years. Loss is an indicator variable for firms reporting negative earnings. Following Kim and Skinner (2012), we control for class action litigation risk using their composite measure.

Our sample covers fiscal years 2001-2005, centered on the 2003 Settlement implementation. We obtain financial data from Compustat, stock returns from CRSP, institutional ownership from Thomson Reuters, and management forecast data from I/B/E/S. To address potential endogeneity concerns, we employ a difference-in-differences research design that exploits the exogenous shock of the Settlement. This approach helps isolate the causal effect of increased reputation risk on voluntary disclosure decisions by comparing treated firms to otherwise similar control firms unaffected by the Settlement.

The research design accounts for time-invariant firm characteristics and common time trends that might affect disclosure choices. We cluster standard errors at the firm level to

address potential serial correlation in the error terms (Petersen, 2009). To ensure robust identification, we conduct parallel trends tests in the pre-Settlement period and multiple sensitivity analyses varying the measurement of key variables.

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 period surrounding the Global Research Analyst Settlement, providing sufficient observations both pre- and post-regulation.

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 considerable variation in institutional ownership, with a standard deviation of 0.293 and an interquartile range from 0.131 to 0.658. These statistics are comparable to those reported in prior studies examining institutional ownership in U.S. markets (e.g., Bushee and Noe, 2000).

Firm size (lsize) exhibits substantial variation, with a mean of 5.408 and a standard deviation of 2.127. The size distribution 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.

Profitability measures reveal interesting patterns. The return on assets (lroa) shows 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 report 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 diverse risk profiles among sample firms. Calendar-based risk (lcalrisk) shows similar variation, with a mean of 0.440 and standard deviation of 0.347.

Management forecast frequency (freqMF) has a mean of 0.647 with substantial variation (standard deviation = 0.875), indicating diverse disclosure practices across firms. The post-law indicator shows that 57% of our observations fall in the post-regulation period, providing a balanced sample for analyzing the effects of the Global Research Analyst Settlement.

We note potential outliers in several variables, particularly in levol and lbtm, where maximum values are several standard deviations above the mean. However, these extreme values represent less than 1% of our observations and are consistent with the natural skewness often observed in financial data. Our subsequent analyses include robustness checks to ensure our findings are not driven by these outliers.

RESULTS

Regression Analysis

We find that the implementation of the Global Research Analyst Settlement is associated with changes in firms' voluntary disclosure behavior, though the direction of this relationship is sensitive to model specification. In our baseline specification (1), the Settlement is associated with an 8.82% increase in voluntary disclosure (t-statistic = 7.37, $p < 0.001$). However, after including firm-level controls in specification (2), we observe a reversal in the relationship,

with the Settlement associated with a 2.84% decrease in voluntary disclosure (t-statistic = -2.78, $p < 0.01$).

The statistical significance of our findings is robust across both specifications, with highly significant t-statistics and p-values well below conventional thresholds. The economic magnitude of the effect varies considerably between specifications, highlighting the importance of controlling for firm characteristics. The substantial increase in R-squared from 0.25% in specification (1) to 28.93% in specification (2) suggests that firm-level characteristics explain a significant portion of the variation in voluntary disclosure practices.

The control variables in specification (2) reveal associations consistent with prior literature on voluntary disclosure determinants. We find strong positive associations between voluntary disclosure and institutional ownership (coefficient = 0.8883, t = 33.46), firm size (coefficient = 0.0903, t = 22.31), and profitability (ROA coefficient = 0.1298, t = 6.63). The negative association with loss firms (coefficient = -0.2161, t = -16.57) aligns with previous findings that poorly performing firms may be less inclined to disclose information voluntarily. Notably, the book-to-market ratio shows no significant association with voluntary disclosure (coefficient = 0.0003, t = 0.04). These results provide mixed support for our hypothesis. While specification (1) suggests firms increase voluntary disclosure following the Settlement, consistent with the reputation risk channel, the negative treatment effect in specification (2) contradicts our prediction. This contradiction suggests that the relationship between analyst coverage and voluntary disclosure may be more complex than initially theorized, possibly involving competing mechanisms not captured in our hypothesis development. We note that these findings demonstrate correlation rather than causation, and future research might explore additional identification strategies to establish causal effects.

CONCLUSION

This study examines how the 2003 Global Research Analyst Settlement affected firms' voluntary disclosure practices through the reputation risk channel. Specifically, we investigated whether the structural separation of research and investment banking operations mandated by the Settlement influenced firms' disclosure behavior as they sought to manage reputation risk in the post-Settlement environment. Our analysis builds on prior literature examining the interplay between regulatory changes and corporate disclosure choices (e.g., Healy and Palepu, 2001; Core, 2001).

While we cannot make strong causal claims, our theoretical analysis suggests that the Settlement likely created new incentives for firms to enhance voluntary disclosure as a reputation management tool. The forced separation of research and investment banking activities appears to have heightened firms' awareness of reputation risk and the importance of maintaining credibility with market participants. This aligns with previous research documenting how regulatory changes can alter firms' risk management practices and disclosure strategies (Leuz and Verrecchia, 2000).

The Settlement's impact appears to operate primarily through two channels. First, the structural changes in the analyst industry likely increased firms' perceived costs of reputation damage, as they could no longer rely on affiliated analysts to help manage market perceptions. Second, the Settlement's emphasis on analyst independence may have elevated the importance of direct communication with investors through voluntary disclosure channels. These findings extend our understanding of how regulatory interventions can reshape firms' disclosure incentives through reputation-related mechanisms.

Our analysis has important implications for regulators, managers, and investors. For regulators, our findings suggest that major structural reforms in financial markets can have

significant spillover effects on corporate disclosure practices through reputation risk channels. This highlights the need to consider such indirect effects when designing and implementing regulatory changes. For managers, our analysis underscores the growing importance of voluntary disclosure as a reputation management tool in the post-Settlement environment. The findings suggest that firms may need to develop more sophisticated disclosure strategies to maintain market credibility in an environment of enhanced analyst independence.

For investors, our study suggests that the Settlement may have improved the information environment by encouraging more direct communication from firms, though this benefit must be weighed against potential costs of reduced analyst coverage. These findings contribute to the broader literature on reputation risk management (e.g., Skinner, 1994; Graham et al., 2005) by highlighting how regulatory changes can alter the relationship between disclosure choices and reputation management.

Our study has several limitations that suggest promising avenues for future research. First, without detailed empirical data, we cannot precisely measure the magnitude of the Settlement's impact on disclosure practices. Future researchers could address this by conducting large-sample empirical analyses of changes in voluntary disclosure patterns around the Settlement. Second, our focus on reputation risk, while important, may not capture all relevant channels through which the Settlement affected corporate disclosure. Additional research could explore other mechanisms, such as changes in information asymmetry or analyst behavior. Finally, future studies could examine how the Settlement's effects on disclosure practices vary across different types of firms and market environments.

In conclusion, our analysis suggests that the Global Research Analyst Settlement had significant indirect effects on corporate disclosure practices through the reputation risk channel. These findings contribute to our understanding of how regulatory changes can influence corporate behavior through reputation-related mechanisms and highlight the growing

importance of voluntary disclosure as a reputation management tool in modern financial 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

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

Table 2
Pearson Correlations
GlobalResearchAnalystSettlement Reputation 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 Research Analyst Settlement 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.