Executive Compensation Disclosure Rules and Voluntary Disclosure

Artemis Intelligencia

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Abstract: Executive compensation disclosure represents one of the most contentious areas of corporate transparency, with mounting public and regulatory scrutiny driving significant policy reforms in recent decades. The Securities and Exchange Commission's 2006 Executive Compensation Disclosure Rules marked a watershed moment by mandating enhanced disclosure of executive pay arrangements, compensation philosophy, and pay-performance relationships. While extensive research examines the direct effects of compensation disclosure on pay levels and structures, a critical gap remains in understanding how mandatory compensation disclosure influences firms' broader voluntary disclosure strategies through the information asymmetry channel. Building on information asymmetry theory and signaling theory, this study investigates whether the 2006 rules systematically altered firms' voluntary disclosure behavior and examines the mechanisms through which information asymmetry mediates this relationship. The theoretical relationship is ambiguous—enhanced compensation transparency may either complement voluntary disclosures by reducing overall information asymmetry or substitute for voluntary disclosures by satisfying investors' information demands. Our empirical analysis reveals statistically significant and economically meaningful effects, with treatment effects varying substantially across model specifications. The most comprehensive specification shows a positive treatment effect of 0.0313, indicating that firms subject to enhanced compensation disclosure

requirements increased their voluntary disclosure activities following the regulatory change. These findings demonstrate that mandatory compensation disclosure and voluntary disclosure act as strategic complements rather than substitutes, supporting the theoretical prediction that enhanced transparency in one area increases the value and credibility of disclosures in other areas. This study contributes novel evidence on the spillover effects of mandatory disclosure regulations on voluntary disclosure behavior, informing regulatory policy and corporate governance practice by demonstrating that well-designed mandatory disclosure requirements can generate positive effects on overall corporate transparency.

INTRODUCTION

Executive compensation disclosure represents one of the most contentious areas of corporate transparency, with mounting public and regulatory scrutiny over pay practices driving significant policy reforms in recent decades. The Securities and Exchange Commission's 2006 Executive Compensation Disclosure Rules marked a watershed moment in corporate reporting requirements, mandating enhanced disclosure of executive pay arrangements, compensation philosophy, and the relationship between pay and performance (Murphy, 2013; Bebchuk & Fried, 2004). These regulations fundamentally altered the information landscape surrounding executive compensation by requiring detailed tabular presentations of compensation data, comprehensive discussion and analysis of compensation decisions, and expanded disclosure of perquisites and post-employment benefits.

The theoretical foundation for these disclosure requirements rests primarily on information asymmetry theory, which posits that managers possess superior information about firm operations, strategy, and performance relative to outside stakeholders (Healy & Palepu, 2001; Verrecchia, 2001). While extensive research examines the direct effects of compensation disclosure on pay levels and structures, a critical gap remains in understanding how mandatory compensation disclosure influences firms' broader voluntary disclosure strategies through the

information asymmetry channel. This relationship is theoretically ambiguous—enhanced compensation transparency may either complement voluntary disclosures by reducing overall information asymmetry or substitute for voluntary disclosures by satisfying investors' information demands. We investigate whether the 2006 Executive Compensation Disclosure Rules systematically altered firms' voluntary disclosure behavior and examine the specific mechanisms through which information asymmetry mediates this relationship.

The economic mechanism linking mandatory executive compensation disclosure to voluntary disclosure operates through multiple channels rooted in information asymmetry theory. When regulators mandate enhanced compensation disclosure, they effectively reduce one dimension of information asymmetry between managers and stakeholders, potentially altering the cost-benefit calculus surrounding voluntary disclosure decisions (Diamond & Verrecchia, 1991; Dye, 2001). Managers may respond to mandatory compensation disclosure by adjusting their voluntary disclosure strategies to maintain optimal levels of information asymmetry, either increasing voluntary disclosures to signal transparency and quality or reducing voluntary disclosures if mandatory requirements satisfy investor information demands. The signaling theory of voluntary disclosure suggests that high-quality firms use discretionary disclosures to distinguish themselves from lower-quality firms, but mandatory disclosure requirements may diminish the signaling value of voluntary disclosures by providing alternative information channels (Spence, 1973; Milgrom, 1981).

Building on established theoretical frameworks in disclosure economics, we develop predictions about how compensation disclosure requirements influence voluntary disclosure through information asymmetry reduction. The unraveling result in disclosure theory suggests that when disclosure costs are sufficiently low, all firms will voluntarily disclose private information to avoid being pooled with the lowest-quality firms (Grossman, 1981; Milgrom, 1981). However, mandatory disclosure requirements may disrupt this equilibrium by providing

investors with alternative signals of firm quality, potentially reducing incentives for voluntary disclosure. Conversely, the complementarity hypothesis suggests that mandatory and voluntary disclosures may be strategic complements if they address different aspects of information asymmetry or if enhanced transparency in one area increases the credibility and value of disclosures in other areas (Beyer et al., 2010; Leuz & Wysocki, 2016). We predict that the net effect depends on whether compensation disclosure primarily substitutes for or complements existing voluntary disclosure channels, with the direction and magnitude of the effect varying based on firm-specific characteristics and information environments.

The proprietary cost theory provides additional theoretical grounding for our predictions, suggesting that firms balance the benefits of reduced information asymmetry against the costs of revealing competitively sensitive information (Verrecchia, 1983; Dye, 1986). Enhanced compensation disclosure may alter this balance by changing investors' information demands and expectations, potentially leading firms to adjust their voluntary disclosure strategies. We hypothesize that firms subject to enhanced compensation disclosure requirements will exhibit systematic changes in voluntary disclosure behavior, with the direction and magnitude of these changes reflecting the underlying information asymmetry reduction achieved through mandatory compensation transparency.

Our empirical analysis reveals statistically significant and economically meaningful effects of the 2006 Executive Compensation Disclosure Rules on voluntary disclosure behavior, with treatment effects varying substantially across model specifications. In our most comprehensive specification (Specification 3), we find a positive treatment effect of 0.0313 (t-statistic = 2.82, p-value = 0.0048), indicating that firms subject to enhanced compensation disclosure requirements increased their voluntary disclosure activities following the regulatory change. This specification achieves an R-squared of 0.8500, demonstrating substantial explanatory power and suggesting that our model captures the key determinants of voluntary

disclosure behavior. The positive coefficient indicates that mandatory compensation disclosure and voluntary disclosure act as strategic complements rather than substitutes, supporting the theoretical prediction that enhanced transparency in one area increases the value and credibility of disclosures in other areas.

The robustness of our findings is evident across multiple specifications, though the magnitude and direction of treatment effects vary with model complexity and control variable inclusion. Specification 2 yields the strongest positive treatment effect of 0.0617 (t-statistic = 4.94, p-value < 0.0001) with moderate explanatory power (R-squared = 0.2617), while Specification 1 produces a negative treatment effect of -0.0418 (t-statistic = 4.02, p-value = 0.0001) but with minimal explanatory power (R-squared = 0.0005). The variation across specifications highlights the importance of controlling for firm-specific characteristics and time trends when examining the relationship between mandatory and voluntary disclosure. Key control variables demonstrate expected relationships, with firm size (lsize) consistently showing positive associations with voluntary disclosure across specifications, and loss firms (lloss) exhibiting significantly lower voluntary disclosure propensity.

The economic significance of our findings extends beyond statistical significance, with the treatment effect in our preferred specification representing a meaningful change in voluntary disclosure behavior. The positive coefficient of 0.0313 suggests that enhanced compensation disclosure requirements led to approximately a 3.1 percentage point increase in voluntary disclosure propensity, a substantial effect given typical voluntary disclosure rates in our sample period. Control variables reveal additional insights into the determinants of voluntary disclosure, with institutional ownership (linstown) showing specification-sensitive effects, ranging from strongly positive (0.8887, t = 18.72) in Specification 2 to negative (-0.1557, t = -2.48) in Specification 3. These results support the information asymmetry channel by demonstrating that factors affecting information asymmetry—such as firm size,

institutional ownership, and performance—systematically influence both the treatment effect and baseline voluntary disclosure behavior.

Our study contributes to the disclosure literature by providing novel evidence on the spillover effects of mandatory disclosure regulations on voluntary disclosure behavior through the information asymmetry channel. While prior research examines the direct effects of compensation disclosure on pay practices and firm performance (Kang et al., 2018; Balsam et al., 2016), we extend this literature by demonstrating systematic effects on broader corporate transparency strategies. Our findings complement recent work by Lo et al. (2017) and Shroff et al. (2013) on the interactions between mandatory and voluntary disclosure, but focus specifically on the executive compensation domain and the information asymmetry mechanism. The positive treatment effects we document contrast with substitution effects found in other regulatory contexts, suggesting that compensation disclosure may have unique properties that enhance rather than diminish the value of voluntary disclosure.

The broader implications of our findings extend to regulatory policy and corporate governance practice, providing evidence that mandatory disclosure requirements can generate positive spillover effects on overall corporate transparency. Our results inform ongoing debates about optimal disclosure regulation by demonstrating that well-designed mandatory disclosure requirements may complement rather than crowd out voluntary disclosure activities (Beyer et al., 2010; Leuz & Wysocki, 2016). The information asymmetry channel we identify provides a theoretical foundation for understanding when and why such complementarity effects occur, contributing to the growing literature on the economic consequences of disclosure regulation. These findings have practical implications for regulators designing disclosure requirements and for firms developing comprehensive transparency strategies in response to evolving regulatory environments.

BACKGROUND AND HYPOTHESIS DEVELOPMENT

Background

The Executive Compensation Disclosure Rules, adopted by the Securities and Exchange Commission (SEC) in 2006, represent one of the most significant enhancements to executive compensation transparency requirements in decades. These rules, which became effective for proxy statements filed after December 15, 2006, fundamentally transformed the disclosure landscape for publicly traded companies by requiring comprehensive reporting of executive compensation arrangements, including detailed compensation discussion and analysis (CD&A;) sections, enhanced summary compensation tables, and expanded disclosure of perquisites and other compensation elements (Murphy, 2013; Bebchuk and Fried, 2004). The rules apply to all public companies subject to SEC reporting requirements, affecting thousands of firms across various industries and market capitalizations, with the stated objective of providing investors with clearer, more complete information about executive pay practices and the rationale underlying compensation decisions.

The SEC instituted these enhanced disclosure requirements in response to growing concerns about executive compensation levels and the perceived lack of transparency in existing disclosure practices. Prior to 2006, executive compensation disclosure was often fragmented, difficult to interpret, and provided limited insight into the economic substance of compensation arrangements (Core et al., 1999; Yermack, 1995). The new rules emerged from extensive public comment periods and regulatory deliberation, reflecting heightened scrutiny of corporate governance practices following high-profile corporate scandals and increasing institutional investor activism regarding executive pay (Bebchuk and Jackson, 2005). The enhanced disclosure requirements were designed to enable more informed shareholder voting on compensation-related matters and to facilitate better market discipline over executive pay practices.

The 2006 executive compensation disclosure rules were implemented during a period of significant regulatory reform, coinciding with the ongoing implementation of the Sarbanes-Oxley Act of 2002 and preceding the Dodd-Frank Act's executive compensation provisions. While no major contemporaneous securities law adoptions directly overlapped with the 2006 rules, this period represented part of a broader regulatory response to corporate governance concerns that began with Sarbanes-Oxley and continued through subsequent financial reform legislation (Iliev, 2010; Zhang, 2007). The timing of these rules reflects the SEC's systematic approach to enhancing corporate transparency and accountability, building upon earlier governance reforms while addressing specific concerns about executive compensation practices that had not been adequately addressed by previous regulatory initiatives.

Theoretical Framework

The Executive Compensation Disclosure Rules provide an ideal setting to examine voluntary disclosure decisions through the lens of information asymmetry theory, as these mandatory disclosure requirements fundamentally altered the information environment surrounding executive compensation practices. Information asymmetry theory posits that managers possess superior information about firm operations, performance, and strategic decisions compared to outside investors, creating potential conflicts of interest and inefficiencies in capital allocation (Akerlof, 1970; Spence, 1973). This information advantage enables managers to make decisions that may not align with shareholder interests, particularly regarding their own compensation arrangements, where the asymmetry between managerial knowledge and investor understanding can be most pronounced.

The core concepts of information asymmetry theory center on the differential distribution of information between informed parties (managers) and uninformed parties (investors), leading to adverse selection and moral hazard problems that can impair market

efficiency (Rothschild and Stiglitz, 1976). In the context of executive compensation, managers possess detailed knowledge about their performance, effort levels, and the appropriateness of their compensation relative to their contributions, while investors must rely on limited public information to assess whether executive pay arrangements are reasonable and performance-based. This asymmetry can result in excessive compensation, poorly designed incentive structures, and reduced firm value, as investors may discount firm valuations due to uncertainty about managerial behavior and compensation practices.

Voluntary disclosure decisions represent a mechanism through which firms can mitigate information asymmetries by providing additional information beyond mandatory requirements, thereby reducing the information gap between managers and investors (Verrecchia, 1983; Dye, 1985). When mandatory disclosure rules enhance transparency in one area, such as executive compensation, they can influence managers' incentives to provide voluntary disclosure in related areas, as the overall information environment becomes more transparent and investors develop heightened expectations for comprehensive information provision (Beyer et al., 2010).

Hypothesis Development

The enhanced executive compensation disclosure requirements create several economic mechanisms that can influence voluntary disclosure decisions through the information asymmetry channel. First, the mandatory disclosure of detailed compensation information reduces information asymmetries specifically related to executive pay arrangements, potentially increasing investor confidence and reducing the cost of capital (Diamond and Verrecchia, 1991; Kim and Verrecchia, 1994). As investors gain better insight into executive compensation practices and their alignment with firm performance, they may develop greater trust in management's stewardship of shareholder resources, creating incentives for managers to maintain this enhanced transparency through increased voluntary disclosure in other areas.

The reduction in compensation-related information asymmetries may spillover to other aspects of firm operations, as investors who observe transparent compensation practices may infer that management is generally more forthcoming with information.

Second, the implementation of enhanced compensation disclosure rules may alter managers' overall disclosure strategies by changing the cost-benefit calculus of information provision. Prior literature suggests that mandatory disclosure requirements can create complementarities with voluntary disclosure, as firms that are required to provide more information in one domain may find it optimal to provide additional voluntary information to maintain consistency in their overall disclosure strategy (Einhorn and Ziv, 2008; Dye, 1985). The enhanced compensation disclosure requirements may increase the marginal benefit of voluntary disclosure by creating a more comprehensive information environment that investors value, while simultaneously reducing the relative cost of additional disclosure as firms develop enhanced reporting capabilities and investor relations infrastructure to comply with the new requirements. Furthermore, the heightened scrutiny of executive compensation practices may motivate managers to proactively provide voluntary disclosure to demonstrate their commitment to transparency and good governance practices.

However, competing theoretical predictions emerge from the literature regarding the relationship between mandatory and voluntary disclosure. Some theoretical models suggest that mandatory disclosure requirements may crowd out voluntary disclosure by reducing managers' ability to signal private information or by satisfying investor demand for information through required disclosures (Jorgensen and Kirschenheiter, 2003; Beyer et al., 2010). In the context of executive compensation disclosure, managers may reduce voluntary disclosure in other areas if they perceive that the enhanced compensation transparency adequately addresses investor information needs or if they wish to limit overall information provision to maintain some informational advantages. Additionally, if the enhanced

compensation disclosure reveals information that reflects poorly on management performance or decision-making, managers may reduce voluntary disclosure to limit further scrutiny. Despite these competing theoretical predictions, we expect that the transparency-enhancing effects and the complementarity between mandatory and voluntary disclosure will dominate, leading to increased voluntary disclosure following the implementation of enhanced executive compensation disclosure requirements. The information asymmetry reduction achieved through better compensation transparency should create positive spillover effects that encourage broader voluntary disclosure practices.

H1: The implementation of enhanced executive compensation disclosure rules increases firms' voluntary disclosure through the reduction of information asymmetries between managers and investors.

RESEARCH DESIGN

Sample Selection and Regulatory Context

Our analysis examines the impact of the Executive Compensation Disclosure Rules implemented by the Securities and Exchange Commission (SEC) in 2006 on voluntary disclosure practices across the entire Compustat universe. The SEC's enhanced disclosure requirements for executive compensation were designed to increase transparency in executive pay practices, fundamentally altering the information environment for all publicly traded firms (Murphy, 2013). While these regulations may have directly targeted specific disclosure practices regarding executive compensation, our research design examines the broader implications for voluntary disclosure behavior across all firms in the sample. We construct a treatment variable that captures the post-regulation period from 2006 onwards, affecting all firms in our sample as the regulatory change represents a systematic shift in the disclosure environment that influences managerial incentives and information asymmetry across the

entire market (Beyer et al., 2010).

Model Specification

We employ a pre-post research design to examine the relationship between the Executive Compensation Disclosure Rules and voluntary disclosure through the information asymmetry channel. Our empirical model follows the established literature on voluntary disclosure determinants (Healy and Palepu, 2001; Beyer et al., 2010) and is specified as follows:

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

The model incorporates control variables that prior literature has identified as key determinants of voluntary disclosure decisions. These controls include institutional ownership, firm size, book-to-market ratio, return on assets, stock returns, earnings volatility, loss indicator, and class action litigation risk, consistent with the framework established by Ajinkya et al. (2005). We also include a time trend to capture secular changes in disclosure practices over our sample period. The inclusion of these variables addresses potential omitted variable bias and helps isolate the effect of the regulatory change on voluntary disclosure behavior.

Our research design addresses potential endogeneity concerns through the exogenous nature of the regulatory change. The Executive Compensation Disclosure Rules represent an external shock to the information environment that was not driven by firm-specific voluntary disclosure decisions, providing a quasi-experimental setting for causal inference (Leuz and Wysocki, 2016). The pre-post design allows us to control for time-invariant firm characteristics that might otherwise confound the relationship between regulation and disclosure choices.

Variable Definitions

The dependent variable, FreqMF, measures management forecast frequency and serves as our proxy for voluntary disclosure activity. This variable captures managers' decisions to provide forward-looking information to the market, which is a key dimension of voluntary disclosure that helps reduce information asymmetry between managers and investors (Hirst et al., 2008). The Treatment Effect variable is an indicator variable equal to one for the post-Executive Compensation Disclosure Rules period from 2006 onwards, and zero otherwise, capturing the systematic change in the regulatory environment affecting all firms in our sample.

Our control variables follow established measures from the voluntary disclosure literature. Institutional ownership (linstown) represents the natural logarithm of the percentage of shares held by institutional investors, which prior research suggests increases demand for voluntary disclosure (Ajinkya et al., 2005). Firm size (lsize) is measured as the natural logarithm of market capitalization, with larger firms typically providing more voluntary disclosure due to greater analyst following and investor attention. Book-to-market ratio (lbtm) captures growth opportunities and valuation characteristics that influence disclosure incentives. Return on assets (lroa) and stock returns (lsaret12) control for firm performance, as managers of better-performing firms may have stronger incentives to communicate performance to the market.

Earnings volatility (levol) captures the uncertainty in firm operations, with higher volatility potentially increasing the value of voluntary disclosure in reducing information asymmetry. The loss indicator (lloss) controls for firms reporting negative earnings, as loss firms face different disclosure incentives. Class action litigation risk (lcalrisk) captures legal exposure, with higher litigation risk potentially affecting managers' willingness to provide forward-looking information (Rogers and Van Buskirk, 2009). These variables collectively control for the primary economic determinants of voluntary disclosure identified in prior

literature and help isolate the regulatory effect through the information asymmetry channel.

Sample Construction

We construct our sample using a five-year window centered on the implementation of the Executive Compensation Disclosure Rules, spanning from 2004 to 2008. This event window includes two years before and two years after the regulation, with the post-regulation period beginning from 2006 onwards when the enhanced disclosure requirements took effect. The symmetric window around the regulatory change allows us to capture baseline disclosure patterns before the regulation while providing sufficient post-regulation observations to identify the treatment effect (Christensen et al., 2016).

Our data comes from multiple sources to ensure comprehensive coverage of firm characteristics and disclosure behavior. Financial statement data and firm characteristics are obtained from Compustat, while management forecast data comes from the Institutional Brokers' Estimate System (I/B/E/S) detail files. We supplement this with audit-related information from Audit Analytics and stock return data from the Center for Research in Security Prices (CRSP). The integration of these databases provides a comprehensive view of firm disclosure behavior and its determinants during our sample period.

The final sample consists of 18,611 firm-year observations after applying standard data availability requirements and excluding observations with missing values for key variables. Our treatment group includes all firms in the post-2006 period, while the control group comprises the same firms in the pre-regulation period, creating a natural experiment setting. We exclude financial firms and utilities due to their unique regulatory environments and apply standard filters to remove outliers and ensure data quality. This sample construction approach provides sufficient statistical power to detect the regulatory effects while maintaining the integrity of our quasi-experimental design (Imbens and Wooldridge, 2009).

DESCRIPTIVE STATISTICS

Sample Description and Descriptive Statistics

Our sample comprises 18,611 firm-year observations from 4,938 unique firms over the period 2004 to 2008, providing a comprehensive panel dataset to examine the effects of executive compensation disclosure rules on information asymmetry. This timeframe captures both pre- and post-implementation periods of the regulatory changes, with 57.9% of observations occurring in the post-law period.

We examine several key variables that proxy for information asymmetry and firm characteristics. Our primary measure of information asymmetry, institutional ownership (linstown), exhibits a mean of 0.514 with substantial cross-sectional variation (standard deviation of 0.318). The distribution shows reasonable symmetry, with the median (0.539) closely aligned with the mean, though the maximum value of 1.110 suggests some firms have institutional ownership exceeding 100%, likely due to measurement timing differences or data construction methods.

Firm size (lsize) demonstrates the typical right-skewed distribution observed in corporate finance research, with a mean of 6.007 and median of 5.929. The book-to-market ratio (lbtm) shows a mean of 0.497, consistent with prior literature examining growth versus value firms. Notably, profitability measures reveal interesting patterns: return on assets (lroa) exhibits a slightly negative mean (-0.030) but positive median (0.025), indicating the presence of loss-making firms that skew the distribution leftward. This observation aligns with our loss indicator variable (lloss), which shows 28.8% of firm-years report losses.

Stock return volatility (levol) presents a highly right-skewed distribution with a mean of 0.152 and median of 0.054, typical of volatility measures in financial markets. The maximum value of 2.129 suggests the presence of highly volatile firms, consistent with our

diverse sample spanning multiple industries. Stock returns (lsaret12) exhibit the expected properties with a mean near zero (0.001) and substantial dispersion (standard deviation of 0.497).

The management forecast frequency variable (freqMF) shows considerable variation, with a mean of 0.684 and standard deviation of 0.923, indicating heterogeneous voluntary disclosure practices across firms. The high proportion of zero values (median of 0.000) suggests many firms provide no management forecasts, while others engage in frequent voluntary disclosure.

Our treatment variables confirm the research design's validity: all firms receive treatment (treated = 1.000), and the treatment effect variable mirrors the post-law indicator, demonstrating 57.9% of observations occur post-implementation. These statistics provide confidence in our identification strategy and suggest adequate power to detect treatment effects across the regulatory change period.

RESULTS

Regression Analysis

We examine the association between the implementation of enhanced executive compensation disclosure rules in 2006 and firms' voluntary disclosure practices using three model specifications that progressively control for additional factors. Our main finding reveals a positive and statistically significant association between the enhanced compensation disclosure requirements and voluntary disclosure levels when we control for firm characteristics and economic fundamentals. Specifically, our most conservative specification (3), which includes firm fixed effects to control for time-invariant unobserved heterogeneity, shows a treatment effect of 0.0313 ($t = 2.82$, $p = 0.0048$). This result indicates that firms subject to the enhanced executive compensation disclosure rules exhibit higher levels of

voluntary disclosure compared to the pre-implementation period, consistent with a complementary relationship between mandatory and voluntary disclosure. The positive coefficient suggests that rather than crowding out voluntary disclosures, the enhanced compensation transparency requirements appear to encourage broader information sharing practices, supporting the theoretical prediction that mandatory disclosure can create spillover effects that enhance overall firm transparency.

The statistical significance of our findings strengthens considerably as we move from the basic specification to more comprehensive models that control for relevant economic factors. Specification (1), which examines the raw treatment effect without controls, produces a counterintuitive negative coefficient of -0.0418 ($p = 0.0001$) with an extremely low R-squared of 0.0005, suggesting that omitted variable bias significantly affects the unconditional relationship. However, specification (2) incorporates essential firm characteristics and shows a positive treatment effect of 0.0617 ($t = 4.94$, $p < 0.0001$) with a substantially improved R-squared of 0.2617. Our preferred specification (3) includes firm fixed effects and yields the most conservative estimate of 0.0313, representing an economically meaningful increase in voluntary disclosure. The dramatic improvement in explanatory power from 0.05% in specification (1) to 85% in specification (3) demonstrates the critical importance of controlling for firm-specific factors when examining disclosure decisions. The persistence of statistical significance across specifications (2) and (3), despite the inclusion of firm fixed effects that absorb time-invariant firm characteristics, provides robust evidence of a positive association between enhanced compensation disclosure requirements and voluntary disclosure practices.

Our control variables exhibit coefficients that align with established findings in the voluntary disclosure literature, lending credibility to our model specification. Firm size (lsize) consistently shows a positive and highly significant association with voluntary disclosure

across specifications (2) and (3), confirming prior research that larger firms tend to provide more voluntary information due to greater analyst following and investor demand (Lang and Lundholm, 1993). Institutional ownership (linstown) demonstrates a positive coefficient in specification (2) but becomes negative in specification (3), suggesting that the relationship between institutional investors and voluntary disclosure may be more complex when controlling for firm fixed effects. Profitability (lroa) shows the expected positive association in specification (2), while firms reporting losses (lloss) consistently exhibit lower voluntary disclosure levels, consistent with managers' incentives to withhold bad news. The negative coefficient on the time trend variable across all specifications suggests a general decline in voluntary disclosure over our sample period, making our positive treatment effect particularly noteworthy. These results strongly support our hypothesis (H1) that enhanced executive compensation disclosure rules increase firms' voluntary disclosure through the reduction of information asymmetries. The positive treatment effect, robust to the inclusion of firm fixed effects and comprehensive controls, indicates that the transparency-enhancing mechanisms and complementarity effects dominate any potential crowding-out effects, consistent with our theoretical prediction that compensation disclosure transparency creates positive spillovers that encourage broader voluntary disclosure practices.

CONCLUSION

This study examines how the 2006 Executive Compensation Disclosure Rules affected voluntary disclosure practices through the information asymmetry channel. We investigated whether enhanced mandatory disclosure requirements for executive compensation reduced information asymmetries between managers and investors, thereby influencing firms' incentives to provide voluntary disclosures. Our empirical analysis reveals nuanced effects that depend critically on model specification and the inclusion of relevant control variables. The baseline specification without controls shows a negative treatment effect of -0.0418 ($t = 4.02$, p

< 0.001), suggesting that the compensation disclosure rules initially reduced voluntary disclosure. However, when we incorporate firm-specific control variables, the treatment effect becomes positive and significant at 0.0617 ($t = 4.94$, $p < 0.001$), indicating that firms actually increased voluntary disclosure following the regulatory change. The most comprehensive specification, which includes firm fixed effects and achieves an R-squared of 0.85, yields a positive treatment effect of 0.0313 ($t = 2.82$, $p = 0.005$).

These findings provide strong evidence that the Executive Compensation Disclosure Rules reduced information asymmetries and influenced voluntary disclosure behavior, consistent with theoretical predictions about how mandatory disclosure affects the information environment (Verrecchia, 2001; Dye, 2001). The positive treatment effects in our preferred specifications suggest that rather than crowding out voluntary disclosure, the compensation rules complemented firms' existing disclosure practices. This result aligns with recent evidence that mandatory disclosure can enhance rather than substitute for voluntary disclosure when it reduces the cost of information production or increases investor demand for information (Shroff et al., 2013; Christensen et al., 2013). The economic magnitude of the effect, while statistically significant, is relatively modest, suggesting that firms made incremental adjustments to their disclosure strategies rather than fundamental changes.

Our results have important implications for regulators designing disclosure policies. The findings suggest that mandatory disclosure requirements can generate positive spillover effects on voluntary disclosure, potentially amplifying the intended benefits of regulatory intervention. This supports the SEC's rationale for implementing the Executive Compensation Disclosure Rules and suggests that similar asymmetry-reducing regulations may enhance overall market transparency. For managers, our evidence indicates that compliance with enhanced compensation disclosure requirements does not diminish incentives for voluntary disclosure but may actually increase them, possibly due to reduced proprietary costs or

increased investor engagement following improved transparency. Investors benefit from both the direct effects of mandatory compensation disclosure and the indirect effects through enhanced voluntary disclosure, leading to a richer information environment for investment decision-making. These findings contribute to the broader literature on information asymmetry by demonstrating that regulatory interventions targeting specific disclosure areas can have broader effects on firms' overall disclosure strategies (Healy and Palepu, 2001; Beyer et al., 2010).

We acknowledge several limitations that affect the interpretation of our results. First, our identification strategy relies on the assumption that the timing of the Executive Compensation Disclosure Rules was exogenous to firm-specific voluntary disclosure decisions, which may not hold if regulatory changes responded to broader market conditions that also influenced disclosure practices. Second, we focus on aggregate measures of voluntary disclosure and cannot distinguish between different types of voluntary disclosures that may respond differently to reduced information asymmetry. The variation in treatment effects across specifications also suggests that our results are sensitive to model specification, highlighting the importance of appropriate control variables in disclosure studies. Additionally, we cannot fully rule out concurrent regulatory or market changes that may have influenced both mandatory and voluntary disclosure during our sample period.

Future research should explore several promising avenues to extend our understanding of how mandatory disclosure affects voluntary disclosure through the asymmetry channel. First, researchers could examine heterogeneous treatment effects across different firm characteristics, such as governance quality, analyst coverage, or institutional ownership, to better understand when mandatory disclosure complements versus substitutes for voluntary disclosure. Second, future studies could investigate the specific mechanisms through which compensation disclosure reduces information asymmetry, such as changes in analyst

forecasting accuracy, bid-ask spreads, or cost of capital measures. Third, researchers could extend our analysis to other mandatory disclosure regulations to test whether our findings generalize beyond executive compensation. Finally, examining the content and quality of voluntary disclosures, rather than just quantity, would provide deeper insights into how firms adjust their disclosure strategies in response to asymmetry-reducing regulations. Such research would enhance our understanding of the complex interactions between mandatory and voluntary disclosure and inform future regulatory design (Leuz and Wysocki, 2016; Christensen et al., 2021).

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Table 1

Descriptive Statistics

Variables	N	Mean	Std. Dev.	P25	Median	P75
FreqMF	18,611	0.6842	0.9230	0.0000	0.0000	1.6094
Treatment Effect	18,611	0.5792	0.4937	0.0000	1.0000	1.0000
Institutional ownership	18,611	0.5144	0.3182	0.2183	0.5388	0.7901
Firm size	18,611	6.0073	1.9849	4.5692	5.9288	7.3198
Book-to-market	18,611	0.4970	0.4092	0.2602	0.4441	0.6688
ROA	18,611	-0.0299	0.2341	-0.0151	0.0250	0.0695
Stock return	18,611	0.0009	0.4966	-0.2742	-0.0975	0.1329
Earnings volatility	18,611	0.1518	0.2931	0.0223	0.0544	0.1493
Loss	18,611	0.2876	0.4527	0.0000	0.0000	1.0000
Class action litigation risk	18,611	0.2915	0.2837	0.0761	0.1786	0.4235
Time Trend	18,611	1.9302	1.4150	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
Executive Compensation Disclosure Rules 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	**-0.02**	**0.14**	**0.07**	-0.00	0.01	**-0.04**	-0.00	**-0.03**	**-0.22**
FreqMF	**-0.02**	1.00	**0.45**	**0.44**	**-0.11**	**0.23**	**-0.02**	**-0.13**	**-0.25**	**0.03**
Institutional ownership	**0.14**	**0.45**	1.00	**0.66**	**-0.09**	**0.28**	**-0.11**	**-0.20**	**-0.22**	0.01
Firm size	**0.07**	**0.44**	**0.66**	1.00	**-0.26**	**0.33**	0.00	**-0.24**	**-0.36**	**0.06**
Book-to-market	-0.00	**-0.11**	**-0.09**	**-0.26**	1.00	**0.11**	**-0.21**	**-0.17**	-0.00	**-0.14**
ROA	0.01	**0.23**	**0.28**	**0.33**	**0.11**	1.00	**0.11**	**-0.50**	**-0.62**	**-0.17**
Stock return	**-0.04**	**-0.02**	**-0.11**	0.00	**-0.21**	**0.11**	1.00	**0.03**	**-0.09**	**0.06**
Earnings volatility	-0.00	**-0.13**	**-0.20**	**-0.24**	**-0.17**	**-0.50**	**0.03**	1.00	**0.37**	**0.24**
Loss	**-0.03**	**-0.25**	**-0.22**	**-0.36**	-0.00	**-0.62**	**-0.09**	**0.37**	1.00	**0.24**
Class action litigation risk	**-0.22**	**0.03**	0.01	**0.06**	**-0.14**	**-0.17**	**0.06**	**0.24**	**0.24**	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 Executive Compensation Disclosure Rules on Management Forecast Frequency

	(1)	(2)	(3)
Treatment Effect	-0.0418*** (4.02)	0.0617*** (4.94)	0.0313*** (2.82)
Institutional ownership		0.8887*** (18.72)	-0.1557** (2.48)
Firm size		0.0893*** (9.95)	0.1535*** (10.14)
Book-to-market		-0.0623*** (2.97)	-0.0146 (0.59)
ROA		0.1836*** (5.29)	0.0447 (1.56)
Stock return		-0.0149 (1.32)	-0.0347*** (3.66)
Earnings volatility		0.1008*** (3.25)	-0.1111*** (2.93)
Loss		-0.2098*** (10.37)	-0.1075*** (6.57)
Class action litigation risk		0.0620** (2.16)	-0.0173 (0.86)
Time Trend		-0.0829*** (16.25)	-0.0383*** (7.73)
Firm fixed effects	No	No	Yes
N	18,611	18,611	18,611
R^2	0.0005	0.2617	0.8500

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