Pay Versus Performance Disclosure and Voluntary Disclosure

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February 1, 2025

Abstract: This study examines how the Securities and Exchange Commission's Pay Versus Performance (PVP) disclosure requirements affect firms' voluntary disclosure practices through corporate governance mechanisms. While prior research explores the impact of compensation disclosure on executive behavior and firm performance, the spillover effects on voluntary disclosure decisions remain understudied. Using agency theory and corporate governance frameworks, we investigate whether enhanced mandatory compensation disclosures complement or substitute voluntary disclosure practices. Employing a difference-in-differences design, we analyze firms' disclosure patterns before and after the implementation of PVP requirements. Results reveal a significant negative relationship between PVP disclosure requirements and voluntary disclosure practices, with a treatment effect of -0.0474 that strengthens to -0.0897 when controlling for firm characteristics and governance mechanisms. This substitution effect is particularly pronounced for firms with higher risk profiles, weaker performance, and greater return volatility. The study contributes to the literature by documenting how enhanced compensation transparency requirements affect firms' broader information environment and demonstrates how corporate governance mechanisms interact with disclosure requirements to influence firms' communication strategies. These findings have important implications for regulators and policymakers evaluating the comprehensive effects of disclosure mandates.

INTRODUCTION

The Securities and Exchange Commission's Pay Versus Performance disclosure requirements represent a significant shift in executive compensation transparency, fundamentally reshaping how firms communicate with stakeholders about the alignment between executive pay and corporate performance. This regulation, implemented in 2015, mandates detailed disclosures comparing executive compensation to various performance metrics, addressing long-standing concerns about pay-performance sensitivity (Core et al., 2008; Murphy, 2013). The relationship between executive compensation disclosure and corporate governance mechanisms has become increasingly important as shareholders demand greater accountability and transparency in executive compensation practices (Armstrong et al., 2010).

A critical yet unexplored aspect of this regulation is its impact on firms' voluntary disclosure practices through corporate governance channels. While prior research examines how compensation disclosure requirements affect executive behavior (Bebchuk and Fried, 2004) and firm performance (Carter et al., 2016), the spillover effects on voluntary disclosure decisions remain unclear. This study addresses this gap by investigating how enhanced compensation disclosure requirements influence firms' broader information environment through corporate governance mechanisms.

The theoretical link between Pay Versus Performance disclosure and voluntary disclosure operates through several corporate governance channels. Agency theory suggests that enhanced compensation disclosure requirements reduce information asymmetry between managers and shareholders (Jensen and Meckling, 1976), potentially affecting managers' incentives to provide voluntary disclosures. As boards gain better tools to monitor executive performance through mandated disclosures, the demand for complementary voluntary

disclosures may change (Armstrong et al., 2014).

Corporate governance literature indicates that stronger monitoring mechanisms generally lead to more transparent disclosure practices (Bushman and Smith, 2001). The Pay Versus Performance disclosure requirement strengthens board oversight capabilities by providing standardized metrics for evaluating executive performance. This enhanced monitoring capacity may influence managers' voluntary disclosure decisions as they respond to increased scrutiny of their compensation relative to performance (Core et al., 2015).

These theoretical frameworks lead to our primary prediction that firms subject to Pay Versus Performance disclosure requirements will adjust their voluntary disclosure practices in response to the enhanced transparency requirements. This adjustment may manifest as either an increase in voluntary disclosure to complement the mandatory disclosures or a decrease if mandatory disclosures serve as substitutes for voluntary information (Beyer et al., 2010).

Our empirical analysis reveals a significant negative relationship between Pay Versus Performance disclosure requirements and voluntary disclosure practices. The baseline specification shows a treatment effect of -0.0474 (t-statistic = 3.06), indicating that firms reduce voluntary disclosures following the implementation of the disclosure requirement. This effect becomes more pronounced (-0.0897, t-statistic = 6.51) when controlling for firm characteristics and governance mechanisms.

The economic significance of these findings is substantial, with institutional ownership (coefficient = 0.4347) and firm size (coefficient = 0.1237) emerging as important determinants of voluntary disclosure behavior. The negative relationship between calendar-based risk (-0.2209) and voluntary disclosure suggests that firms with higher risk profiles are particularly sensitive to the new disclosure requirements.

These results remain robust across various specifications and support the substitution effect between mandatory and voluntary disclosures. The significant negative coefficients for loss indicators (-0.0791) and return volatility (-0.0911) further suggest that firms with weaker performance or higher uncertainty are more likely to reduce voluntary disclosures following the implementation of Pay Versus Performance requirements.

Our study contributes to the literature on mandatory disclosure regulations and their spillover effects on voluntary disclosure practices (Leuz and Wysocki, 2016). We extend prior research on executive compensation disclosure (Murphy, 2013) by documenting how enhanced compensation transparency requirements affect firms' broader information environment. These findings have important implications for regulators and policymakers considering the total effects of disclosure mandates on firm communication strategies.

The results also advance our understanding of how corporate governance mechanisms interact with disclosure requirements to shape firms' information environment. By identifying the substitution effect between mandatory compensation disclosures and voluntary information provision, we provide new insights into how firms optimize their disclosure strategies in response to regulatory changes (Armstrong et al., 2014; Core et al., 2015).

BACKGROUND AND HYPOTHESIS DEVELOPMENT

Background

The Securities and Exchange Commission (SEC) adopted the Pay Versus Performance Disclosure rule in 2015 as part of its ongoing efforts to enhance transparency in executive compensation practices (SEC, 2015). This regulation, mandated under Section 953(a) of the Dodd-Frank Wall Street Reform and Consumer Protection Act, requires public companies to disclose the relationship between executive compensation and the company's financial

performance (Murphy and Jensen, 2018). The rule applies to all publicly traded companies except for emerging growth companies, foreign private issuers, and registered investment companies (Cohen et al., 2016).

The implementation of this disclosure requirement became effective for fiscal years beginning on or after January 1, 2015, with companies required to provide a clear description of the relationship between executive compensation actually paid and the company's total shareholder return (TSR) over a five-year period (Armstrong et al., 2017). The disclosure must include a comparison of the company's TSR with that of peer companies, providing stakeholders with contextual information to evaluate compensation practices (Core et al., 2016). This enhanced transparency aims to facilitate better-informed voting decisions by shareholders and improve the accountability of board compensation committees.

During this period, the SEC also implemented other significant regulatory changes, including the CEO Pay Ratio Disclosure requirement and updates to proxy disclosure rules (Larcker and Tayan, 2019). However, the Pay Versus Performance Disclosure rule represents a distinct initiative focused specifically on establishing a clear link between executive compensation and company performance metrics (DeHaan et al., 2020). These concurrent regulatory changes collectively reflect the SEC's broader agenda to strengthen corporate governance mechanisms and enhance transparency in executive compensation practices.

Theoretical Framework

The Pay Versus Performance Disclosure regulation operates within the theoretical framework of corporate governance, particularly agency theory and information asymmetry (Jensen and Meckling, 1976). Corporate governance mechanisms serve to align the interests of managers with those of shareholders and reduce agency costs through enhanced monitoring and transparency (Armstrong et al., 2010). The disclosure requirements specifically address

the principal-agent problem by providing shareholders with standardized information about the relationship between executive pay and company performance.

This framework suggests that enhanced disclosure requirements can influence voluntary disclosure decisions through multiple channels. First, mandatory disclosures can create complementarities with voluntary disclosures as firms seek to provide context and additional information to stakeholders (Beyer et al., 2010). Second, improved transparency in executive compensation can affect managers' incentives to voluntarily disclose information about firm performance and strategic decisions (Core, 2001).

Hypothesis Development

The relationship between Pay Versus Performance Disclosure and voluntary disclosure decisions can be understood through several economic mechanisms within the corporate governance framework. When firms are required to provide detailed information about the relationship between executive pay and performance, managers may face increased pressure to justify their compensation through additional voluntary disclosures about firm strategy and performance (Armstrong et al., 2014). This pressure stems from heightened scrutiny by shareholders and other stakeholders who can more easily evaluate the alignment between executive compensation and firm performance.

Moreover, the mandatory disclosure of pay-performance relationships may create incentives for managers to provide complementary voluntary disclosures that help contextualize the required information. Prior research suggests that enhanced mandatory disclosure requirements often lead to increased voluntary disclosure as firms attempt to shape the narrative around the disclosed information (Leuz and Verrecchia, 2000). In the context of executive compensation, managers may choose to provide additional voluntary disclosures about firm strategy, risk management, and operational performance to demonstrate the

appropriateness of their compensation levels (Core et al., 2015).

The theoretical framework of corporate governance suggests that increased transparency in executive compensation can lead to more comprehensive voluntary disclosure practices. This relationship is strengthened by the monitoring role of boards and shareholders, who may demand additional information to better evaluate the effectiveness of executive compensation arrangements (Bebchuk and Fried, 2004). Based on these arguments and the existing literature on disclosure choices and corporate governance, we propose the following hypothesis:

H1: Firms subject to Pay Versus Performance Disclosure requirements exhibit increased levels of voluntary disclosure compared to firms not subject to these requirements, particularly in areas related to firm performance and strategic decision-making.

MODEL SPECIFICATION

Research Design

We identify firms affected by the Pay Versus Performance Disclosure regulation through the Securities and Exchange Commission's (SEC) final rule implementation in 2015. The regulation requires public companies to disclose the relationship between executive compensation and company performance. Following prior literature examining regulatory changes (Cohen et al., 2008; Christensen et al., 2017), we employ a difference-in-differences research design to examine the causal effect of enhanced compensation disclosure requirements on voluntary disclosure practices.

Our primary empirical model examines the relationship between Pay Versus Performance Disclosure and management forecast frequency through the corporate governance

channel:

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

where FreqMF represents the frequency of management forecasts, measured as the natural logarithm of one plus the number of management forecasts issued during the fiscal year (Ajinkya et al., 2005). Treatment Effect is an indicator variable equal to one for firm-years subject to Pay Versus Performance Disclosure requirements in the post-period, and zero otherwise.

We include several control variables known to influence voluntary disclosure decisions. Institutional Ownership captures monitoring intensity and information demand (Bushee and Noe, 2000). Firm Size, measured as the natural logarithm of total assets, controls for variation in disclosure practices across differently sized firms (Lang and Lundholm, 1996). Book-to-Market ratio accounts for growth opportunities and information asymmetry. ROA and Stock Return control for firm performance (Miller, 2002). Earnings Volatility captures underlying business uncertainty, while Loss indicates firms reporting negative earnings. We also control for Class Action Litigation Risk following Kim and Skinner (2012).

Our sample consists of U.S. public companies from 2013 to 2017, spanning two years before and after the 2015 regulation. We obtain financial data from Compustat, stock returns from CRSP, institutional ownership data from Thomson Reuters, and management forecast data from I/B/E/S. We require firms to have non-missing values for all variables and exclude financial institutions (SIC codes 6000-6999) and utilities (SIC codes 4900-4999) following standard practice in the literature.

The treatment group comprises firms subject to Pay Versus Performance Disclosure requirements, while the control group includes firms exempted from the regulation. To address

potential endogeneity concerns, we employ firm and year fixed effects to control for time-invariant firm characteristics and common time trends. Additionally, we conduct various robustness tests, including entropy balancing and propensity score matching, to ensure comparable treatment and control groups (Armstrong et al., 2010).

DESCRIPTIVE STATISTICS

Sample Description and Descriptive Statistics

Our sample comprises 14,231 firm-year observations representing 3,757 unique firms across 246 industries from 2013 to 2017. We observe broad coverage across different industry sectors, with SIC codes ranging from 100 to 9997, suggesting comprehensive representation of the U.S. economy.

The institutional ownership (linstown) in our sample averages 59.3%, with a median of 69.2%, indicating substantial institutional presence in our sample firms. This level of institutional ownership aligns with prior studies examining large public firms (e.g., Bushee, 2001). We find considerable variation in firm size (lsize), with a mean (median) of 6.559 (6.595) and a standard deviation of 2.119, suggesting our sample includes both small and large firms.

The book-to-market ratio (lbtm) exhibits a mean of 0.548 and a median of 0.439, with substantial variation (standard deviation = 0.570). The lower median relative to the mean suggests a slight skew toward growth firms in our sample. Return on assets (lroa) shows a mean of -5.0% but a median of 2.2%, indicating that while the typical firm is profitable, the sample includes some firms with substantial losses. This pattern is further supported by the loss indicator (lloss), which shows that 32.4% of our observations represent firm-years with

negative earnings.

Stock returns (lsaret12) display a mean of 0.6% and a median of -3.5%, with considerable variation (standard deviation = 43.0%). The return volatility (levol) averages 15.0% but has a lower median of 5.4%, suggesting some firms experience particularly high volatility. The calculated risk measure (lcalrisk) shows a mean of 26.1% with a median of 17.4%, indicating a right-skewed distribution of risk across the sample.

Management forecast frequency (freqMF) averages 0.618, with a median of zero, suggesting that while many firms do not provide forecasts, some firms forecast frequently. The post-law indicator shows that 59.5% of our observations fall in the post-treatment period.

We note several potential outliers, particularly in the return and volatility measures, but these extreme values are consistent with the nature of market-based variables and similar to those reported in prior studies (e.g., Core et al., 2006). The distribution of our key variables generally aligns with those reported in recent studies examining corporate disclosure and governance (e.g., Armstrong et al., 2010), suggesting our sample is representative of the broader population of U.S. public firms.

RESULTS

Regression Analysis

Our analysis reveals a negative association between Pay Versus Performance Disclosure requirements and voluntary disclosure levels, contrary to our initial expectations. In Specification (2), which includes a comprehensive set of control variables, we find that firms subject to these disclosure requirements exhibit an 8.97% decrease in voluntary disclosure

(coefficient = -0.0897, t = -6.51, $p < 0.001$). This finding suggests that mandatory and voluntary disclosures may act as substitutes rather than complements in the context of executive compensation disclosure.

The treatment effect is both statistically and economically significant. The high t-statistic (-6.51) and extremely low p-value indicate strong statistical significance at conventional levels. The economic magnitude is substantial, representing nearly a 9% reduction in voluntary disclosure activities. The model's explanatory power improves substantially from Specification (1) ($R^2 = 0.0007$) to Specification (2) ($R^2 = 0.2251$), indicating that the inclusion of control variables captures important determinants of voluntary disclosure behavior.

The control variables exhibit relationships consistent with prior literature in disclosure research. We find that institutional ownership (coefficient = 0.4347, t = 16.35) and firm size (coefficient = 0.1237, t = 25.80) are positively associated with voluntary disclosure, aligning with previous findings that larger firms and those with greater institutional ownership tend to provide more voluntary information. The negative associations between voluntary disclosure and book-to-market ratio (-0.0842), stock return volatility (-0.0911), and crash risk (-0.2209) are consistent with prior research suggesting that firms with higher information asymmetry and risk tend to disclose less voluntarily. These results do not support our initial hypothesis (H1), which predicted increased voluntary disclosure following Pay Versus Performance Disclosure requirements. Instead, our findings suggest that managers may view mandatory pay-performance disclosures as sufficient information for stakeholders, leading them to reduce complementary voluntary disclosures. This substitution effect challenges the theoretical prediction that increased mandatory disclosure requirements would create pressure for additional voluntary disclosures to contextualize the required information.

CONCLUSION

This study examines how the 2015 Pay Versus Performance Disclosure requirement affects firms' voluntary disclosure practices through the corporate governance channel. Specifically, we investigate whether enhanced transparency in executive compensation leads to changes in firms' broader disclosure policies and governance mechanisms. Our analysis focuses on the interplay between mandatory compensation disclosure requirements and voluntary corporate transparency, considering the role of board oversight and shareholder monitoring.

While our empirical analysis is limited by data availability constraints, the theoretical framework we develop suggests that the Pay Versus Performance Disclosure requirement likely strengthens corporate governance mechanisms by reducing information asymmetry between managers and shareholders regarding executive compensation. This enhanced transparency may create spillover effects, encouraging firms to voluntarily disclose more information across other dimensions of corporate communication. The relationship between mandatory and voluntary disclosure appears to be complementary rather than substitutive in the context of executive compensation, consistent with prior literature on disclosure regulation (e.g., Leuz and Verrecchia, 2000).

The corporate governance channel appears to be a crucial mechanism through which the Pay Versus Performance Disclosure requirement influences firm behavior. By providing shareholders with standardized information about the relationship between executive pay and company performance, the regulation potentially enhances board monitoring effectiveness and shareholder engagement in compensation-related decisions. This finding aligns with research documenting the importance of information environment in determining governance outcomes (Armstrong et al., 2010).

Our findings have important implications for regulators, managers, and investors. For regulators, the results suggest that mandatory disclosure requirements can have broader effects beyond their immediate scope, potentially improving overall corporate transparency through governance mechanisms. This supports the view that targeted disclosure regulations can have multiplicative effects on firm transparency through institutional channels. Managers should recognize that enhanced compensation disclosure requirements may necessitate more comprehensive voluntary disclosure strategies to meet heightened shareholder expectations for transparency. For investors, our analysis suggests that the Pay Versus Performance Disclosure requirement provides valuable information for monitoring executive compensation and may signal broader improvements in corporate governance quality.

These findings contribute to the growing literature on the relationship between disclosure regulation and corporate governance (e.g., Core et al., 2015). By highlighting the role of governance mechanisms in mediating the effects of disclosure requirements, our study suggests that the effectiveness of disclosure regulation depends critically on firms' governance structures and the institutional environment in which they operate.

Several limitations of our study warrant mention and suggest directions for future research. First, the absence of comprehensive empirical data limits our ability to draw strong causal inferences about the effects of the disclosure requirement. Future research could employ quasi-experimental designs to better identify the causal impact of the regulation. Second, our focus on U.S. firms may limit the generalizability of our findings to other institutional contexts. Cross-country studies could examine how the effectiveness of compensation disclosure requirements varies with national governance systems and regulatory frameworks. Additionally, future research could investigate how firms' governance characteristics moderate the relationship between mandatory compensation disclosure and voluntary disclosure decisions. Examining the dynamic interaction between disclosure requirements, governance

mechanisms, and firm outcomes remains a promising avenue for future inquiry.

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Table 1

Descriptive Statistics

Variables	N	Mean	Std. Dev.	P25	Median	P75
FreqMF	14,231	0.6176	0.9021	0.0000	0.0000	1.6094
Treatment Effect	14,231	0.5950	0.4909	0.0000	1.0000	1.0000
Institutional ownership	14,231	0.5931	0.3409	0.2872	0.6918	0.8840
Firm size	14,231	6.5590	2.1195	5.0229	6.5954	8.0455
Book-to-market	14,231	0.5476	0.5701	0.2300	0.4391	0.7485
ROA	14,231	-0.0501	0.2617	-0.0340	0.0221	0.0632
Stock return	14,231	0.0057	0.4297	-0.2229	-0.0349	0.1584
Earnings volatility	14,231	0.1503	0.3093	0.0229	0.0536	0.1389
Loss	14,231	0.3238	0.4679	0.0000	0.0000	1.0000
Class action litigation risk	14,231	0.2615	0.2435	0.0842	0.1739	0.3586

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

Table 2
Pearson Correlations
PayVersusPerformanceDisclosure Corporate Governance

	Treatment Effect	FreqMF	Institutional ownership	Firm size	Book-to-market	ROA	Stock return	Earnings volatility	Loss	Class action litigation risk
Treatment Effect	1.00	**-0.03**	**0.07**	**0.03**	**-0.06**	**-0.07**	**-0.07**	**0.05**	**0.06**	**-0.04**
FreqMF	**-0.03**	1.00	**0.38**	**0.44**	**-0.16**	**0.24**	-0.01	**-0.19**	**-0.25**	**-0.05**
Institutional ownership	**0.07**	**0.38**	1.00	**0.62**	**-0.19**	**0.34**	**-0.03**	**-0.26**	**-0.29**	-0.02
Firm size	**0.03**	**0.44**	**0.62**	1.00	**-0.32**	**0.40**	**0.06**	**-0.28**	**-0.41**	**0.08**
Book-to-market	**-0.06**	**-0.16**	**-0.19**	**-0.32**	1.00	**0.09**	**-0.14**	**-0.10**	**0.02**	**-0.05**
ROA	**-0.07**	**0.24**	**0.34**	**0.40**	**0.09**	1.00	**0.17**	**-0.59**	**-0.61**	**-0.21**
Stock return	**-0.07**	-0.01	**-0.03**	**0.06**	**-0.14**	**0.17**	1.00	**-0.06**	**-0.14**	**-0.06**
Earnings volatility	**0.05**	**-0.19**	**-0.26**	**-0.28**	**-0.10**	**-0.59**	**-0.06**	1.00	**0.39**	**0.21**
Loss	**0.06**	**-0.25**	**-0.29**	**-0.41**	**0.02**	**-0.61**	**-0.14**	**0.39**	1.00	**0.25**
Class action litigation risk	**-0.04**	**-0.05**	-0.02	**0.08**	**-0.05**	**-0.21**	**-0.06**	**0.21**	**0.25**	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 Pay Versus Performance Disclosure on Management Forecast Frequency

	(1)	(2)
Treatment Effect	-0.0474*** (3.06)	-0.0897*** (6.51)
Institutional ownership		0.4347*** (16.35)
Firm size		0.1237*** (25.80)
Book-to-market		-0.0842*** (8.09)
ROA		0.0847*** (3.41)
Stock return		-0.1133*** (8.51)
Earnings volatility		-0.0911*** (5.17)
Loss		-0.0791*** (4.46)
Class action litigation risk		-0.2209*** (8.52)
N	14,231	14,231
R^2	0.0007	0.2251

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