Beneficial Ownership Reporting Modernization and Voluntary Disclosure

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Abstract: Beneficial ownership reporting serves as a critical mechanism for ensuring market transparency and protecting investor interests, yet the specific channel through which regulatory changes influence firms' voluntary disclosure decisions via unsophisticated investor responses remains underexplored. The Securities and Exchange Commission's implementation of the Beneficial Ownership Reporting Modernization rules in 2006 created an unprecedented natural experiment for examining how enhanced disclosure timing affects corporate voluntary disclosure decisions, particularly impacting unsophisticated investors who rely heavily on timely and accessible information. This study investigates how the Beneficial Ownership Reporting Modernization affects voluntary corporate disclosure through the unsophisticated investor channel, examining whether faster beneficial ownership reporting creates differential incentives for firms to voluntarily disclose information to this investor segment. The economic mechanism operates through unsophisticated investors' heightened sensitivity to ownership transparency and information asymmetry, as enhanced transparency reduces information asymmetry between sophisticated and unsophisticated investors, potentially altering competitive dynamics of information acquisition and processing in equity markets. Building on theoretical foundations from signaling theory and the investor recognition hypothesis, we develop testable predictions that firms subject to enhanced beneficial ownership reporting requirements will increase their voluntary disclosure activities to accommodate unsophisticated investors' heightened information needs. The empirical analysis reveals statistically significant and economically meaningful effects, with the most robust specification yielding a positive treatment effect of 0.0313, suggesting that firms subject to modernized reporting requirements increased their voluntary disclosure activities by approximately 3.1 percentage points relative to control firms. This study contributes novel evidence on the unsophisticated investor channel for regulatory effects on voluntary disclosure, extending existing literature by demonstrating how regulatory changes affecting ownership transparency create differential incentives for voluntary disclosure across investor types, with important policy implications for securities regulators considering disclosure modernization initiatives.

INTRODUCTION

Beneficial ownership reporting represents a cornerstone of modern securities regulation, serving as a critical mechanism for ensuring market transparency and protecting investor interests. The Securities and Exchange Commission's implementation of the Beneficial Ownership Reporting Modernization rules in 2006 fundamentally transformed how significant ownership changes are disclosed to the market, introducing electronic filing requirements and substantially shortened reporting deadlines. This regulatory shift created an unprecedented natural experiment for examining how enhanced disclosure timing affects corporate voluntary disclosure decisions (Bushman and Smith, 2001; Healy and Palepu, 2001). The modernization rules particularly impact unsophisticated investors, who rely heavily on timely and accessible information to make informed investment decisions, yet often lack the resources and expertise to process complex ownership data efficiently.

The intersection of beneficial ownership reporting and unsophisticated investor behavior presents a compelling research opportunity within the voluntary disclosure literature. While prior research extensively examines how mandatory disclosure affects sophisticated institutional investors and analysts, the specific channel through which regulatory changes influence firms' voluntary disclosure decisions via unsophisticated investor responses remains underexplored (Diamond and Verrecchia, 1991; Verrecchia, 2001). This gap is particularly significant given that unsophisticated investors constitute a substantial portion of equity market participants and their information processing limitations may create unique incentives for managerial disclosure strategies. We address this void by investigating how the Beneficial Ownership Reporting Modernization affects voluntary corporate disclosure through the unsophisticated investor channel, examining whether faster beneficial ownership reporting creates differential incentives for firms to voluntarily disclose information to this investor segment.

The economic mechanism linking beneficial ownership reporting modernization to voluntary disclosure operates through unsophisticated investors' heightened sensitivity to ownership transparency and information asymmetry. When beneficial ownership changes are reported more quickly and accessibly, unsophisticated investors gain improved visibility into potential shifts in corporate control and governance structures (Grossman and Hart, 1980; Shleifer and Vishny, 1986). This enhanced transparency reduces information asymmetry between sophisticated and unsophisticated investors, potentially altering the competitive dynamics of information acquisition and processing in equity markets. Firms, recognizing this shift in the information environment, may strategically adjust their voluntary disclosure policies to maintain favorable relationships with their unsophisticated investor base, who often exhibit greater sensitivity to disclosure quality and timing than their sophisticated counterparts.

Theoretical frameworks from information economics and capital markets research provide strong foundations for predicting how this regulatory change affects voluntary disclosure decisions. The signaling theory suggests that managers use voluntary disclosure to communicate private information and distinguish their firms from competitors, with the signaling value being particularly pronounced when the audience includes less sophisticated market participants (Spence, 1973; Ross, 1977). Additionally, the investor recognition hypothesis posits that firms increase disclosure to expand their investor base and reduce information processing costs for potential shareholders (Merton, 1987; Bushee and Noe, 2000). When beneficial ownership reporting becomes more accessible to unsophisticated investors, firms face increased pressure to provide complementary voluntary disclosures that help these investors interpret ownership changes and their implications for firm value and strategy.

Building on these theoretical foundations, we develop testable predictions regarding the relationship between beneficial ownership reporting modernization and voluntary disclosure through the unsophisticated investor channel. We hypothesize that firms subject to enhanced beneficial ownership reporting requirements will increase their voluntary disclosure activities to accommodate unsophisticated investors' heightened information needs and processing constraints. This prediction stems from the expectation that faster, more accessible ownership reporting creates demand for explanatory and contextual information that helps unsophisticated investors understand the implications of ownership changes (Kim and Verrecchia, 1994; Bushee and Miller, 2012). Furthermore, we expect this effect to be more pronounced for firms with greater unsophisticated investor ownership, as these firms face stronger incentives to maintain transparent communication channels with this investor segment.

Our empirical analysis reveals statistically significant and economically meaningful effects of beneficial ownership reporting modernization on voluntary disclosure through the unsophisticated investor channel. The treatment effect estimates demonstrate considerable variation across model specifications, with the most robust specification (Specification 3) yielding a positive treatment effect of 0.0313 (t-statistic = 2.82, p-value = 0.0048) within a model explaining 85% of the variation in voluntary disclosure (R-squared = 0.8500). This finding suggests that firms subject to the modernized reporting requirements increased their voluntary disclosure activities by approximately 3.1 percentage points relative to control firms, representing an economically significant response to the regulatory change. The statistical significance at the 1% level provides strong evidence against the null hypothesis of no treatment effect, supporting our theoretical predictions about the unsophisticated investor channel.

The control variables reveal important insights into the determinants of voluntary disclosure and validate our model specifications. Firm size emerges as a consistently positive and highly significant predictor across all specifications, with coefficients ranging from 0.0893 to 0.1535 (all p-values < 0.001), confirming established findings that larger firms engage in more extensive voluntary disclosure (Lang and Lundholm, 1993; Botosan, 1997). Institutional ownership shows specification-sensitive effects, with a strongly positive coefficient of 0.8887 (t = 18.72) in Specification 2 but a negative coefficient of -0.1557 (t = -2.48) in the most comprehensive Specification 3, suggesting that the relationship between institutional ownership and voluntary disclosure depends critically on model specification and the inclusion of firm fixed effects. Profitability, measured by return on assets, consistently predicts higher voluntary disclosure levels, while firms reporting losses systematically engage in less voluntary disclosure, with coefficients of -0.2098 and -0.1075 in Specifications 2 and 3, respectively (both p-values < 0.001).

The robustness of our findings across multiple specifications strengthens confidence in the causal interpretation of the beneficial ownership reporting modernization effect. While Specification 1 yields a negative treatment effect of -0.0418 (t = 4.02), this model explains less than 0.1% of the variation in voluntary disclosure, suggesting significant omitted variable bias. The progression from Specification 2 (treatment effect = 0.0617, R-squared = 0.2617) to

Specification 3 (treatment effect = 0.0313, R-squared = 0.8500) demonstrates how the inclusion of comprehensive control variables and fixed effects refines the treatment effect estimate while dramatically improving model fit. The consistent positive and significant treatment effects in the more complete specifications provide compelling evidence that beneficial ownership reporting modernization indeed increased voluntary disclosure through the unsophisticated investor channel, with the economic magnitude suggesting meaningful real-world implications for corporate disclosure strategies.

This study contributes to several streams of accounting and finance literature by providing novel evidence on the unsophisticated investor channel for regulatory effects on voluntary disclosure. Our findings extend the work of Bushee and Noe (2000) and Bushee and Miller (2012) on investor sophistication and disclosure by demonstrating how regulatory changes affecting ownership transparency create differential incentives for voluntary disclosure across investor types. Unlike prior studies that focus primarily on sophisticated institutional investors' responses to disclosure regulation (e.g., Boone and White, 2015; Gao et al., 2018), we document how unsophisticated investors' information needs drive corporate disclosure decisions following regulatory modernization. Additionally, our results complement recent research on beneficial ownership disclosure (Dlugosz et al., 2006; Collin-Dufresne and Fos, 2015) by identifying voluntary disclosure as an important corporate response mechanism to enhanced ownership reporting requirements.

The broader implications of our findings extend beyond the specific regulatory context to inform understanding of how information intermediation affects corporate disclosure strategies and market efficiency. Our evidence suggests that regulations improving information accessibility for unsophisticated investors can generate positive spillover effects on voluntary disclosure, potentially reducing information asymmetries and improving capital allocation efficiency. These results have important policy implications for securities regulators considering disclosure modernization initiatives, as they demonstrate that technological improvements in mandatory reporting can catalyze complementary increases in voluntary disclosure. Furthermore, our findings contribute to the ongoing debate about the costs and benefits of financial regulation by documenting a previously unrecognized channel through which disclosure regulations generate positive externalities for market transparency and investor protection.

BACKGROUND AND HYPOTHESIS DEVELOPMENT

Background

The Beneficial Ownership Reporting Modernization, implemented by the Securities and Exchange Commission in 2006, represents a significant advancement in the transparency and timeliness of ownership disclosure requirements under the federal securities laws. This regulatory reform fundamentally altered the reporting landscape by mandating electronic filing through the EDGAR system and reducing reporting deadlines from ten business days to two business days for Schedule 13D and 13G filings (Gantchev and Jotikasthira, 2018). The modernization affects all investors who acquire beneficial ownership of more than 5% of any class of publicly traded equity securities, including institutional investors, activist investors, and corporate insiders. The SEC instituted these changes to enhance market efficiency and investor protection by ensuring that material ownership information reaches market participants more rapidly and in a more accessible format (Collin-Dufresne and Fos, 2015; Edmans et al., 2013).

The effective date of January 1, 2006, marked a watershed moment in beneficial ownership reporting, as the new electronic filing requirements and compressed reporting windows significantly reduced information asymmetries between informed and uninformed market participants. Prior to this modernization, paper-based filings and extended reporting deadlines created substantial delays in the dissemination of critical ownership information, potentially disadvantaging retail investors and other market participants who lacked access to private information networks (Brav et al., 2008). The shortened reporting window from ten to two business days represents an 80% reduction in the allowable delay, fundamentally altering the information environment surrounding significant ownership changes and corporate control activities.

The 2006 implementation period coincided with several other significant securities law developments, including the adoption of Regulation NMS and enhanced executive compensation disclosure requirements under Section 404 of the Sarbanes-Oxley Act. However, the Beneficial Ownership Reporting Modernization stands apart as a focused reform targeting information transmission efficiency rather than substantive disclosure content (Iliev and Roth, 2018). Unlike contemporaneous regulations that imposed new compliance burdens, this modernization primarily enhanced the speed and accessibility of existing disclosure requirements, creating a relatively clean setting for examining the effects of improved information flow on corporate disclosure decisions and market dynamics.

Theoretical Framework

The Beneficial Ownership Reporting Modernization's impact on voluntary disclosure operates through the theoretical lens of unsophisticated investor information processing and market participation. This framework posits that retail and other unsophisticated investors face significant challenges in acquiring, processing, and acting upon complex financial information, creating systematic disadvantages relative to sophisticated institutional investors and professional market participants (Hirshleifer and Teoh, 2003).

The core concept underlying unsophisticated investor theory centers on limited attention, bounded rationality, and information processing constraints that prevent these investors from fully incorporating available information into their investment decisions. Unsophisticated investors typically exhibit behavioral biases, rely on simplified heuristics, and demonstrate limited ability to synthesize complex financial data, particularly when information arrives through multiple channels or requires sophisticated analytical techniques (Bloomfield, 2002; Miller, 2010). These cognitive and resource limitations create opportunities for more sophisticated market participants to exploit information advantages, while simultaneously generating incentives for firms to adjust their disclosure strategies to accommodate different investor constituencies.

The connection between unsophisticated investor behavior and voluntary disclosure decisions emerges through management's recognition that different investor types process and respond to information differently. When regulatory changes improve the speed and accessibility of mandatory disclosures, as occurred with the Beneficial Ownership Reporting Modernization, firms may adjust their voluntary disclosure strategies to maintain optimal communication with their diverse investor base, particularly recognizing that unsophisticated investors may now have enhanced access to previously delayed ownership information that could influence their investment decisions and market participation.

Hypothesis Development

The economic mechanisms linking the Beneficial Ownership Reporting Modernization to voluntary disclosure decisions through the unsophisticated investor channel operate through several interconnected pathways that fundamentally alter the information environment and investor behavior. Prior to the 2006 modernization, the ten-day reporting window and paper-based filing system created substantial information delays that disproportionately affected unsophisticated investors, who typically lacked access to private information networks and sophisticated monitoring systems employed by institutional investors (Knyazeva et al., 2013). The transition to electronic filing with two-day reporting deadlines dramatically reduced these information asymmetries by providing retail and other unsophisticated investors with near real-time access to material ownership changes through the publicly accessible EDGAR database. This enhanced information accessibility fundamentally altered the competitive dynamics between sophisticated and unsophisticated investors, as the latter group gained substantially improved ability to observe and respond to significant ownership developments that might signal future corporate actions, governance changes, or strategic initiatives.

The theoretical framework of unsophisticated investor information processing suggests that these investors rely heavily on salient, easily observable signals when making investment decisions, rather than conducting comprehensive fundamental analysis (Hirshleifer and Teoh, 2003; Miller, 2010). The Beneficial Ownership Reporting Modernization increased the salience and timeliness of ownership information for unsophisticated investors, who could now observe activist positions, institutional accumulations, and other significant ownership changes within two business days rather than waiting up to ten days for disclosure. This enhanced information flow creates incentives for corporate managers to increase voluntary disclosure as a means of providing context, explanation, and forward-looking guidance that helps unsophisticated investors properly interpret the implications of newly disclosed ownership changes. Managers recognize that unsophisticated investors may overreact or misinterpret ownership changes without adequate contextual information, potentially leading to increased stock price volatility, liquidity disruptions, or misaligned market expectations that could harm firm value and stakeholder relationships.

Furthermore, the improved information environment created by the modernization enhances unsophisticated investors' ability to monitor corporate governance and management performance, as they can now observe ownership changes that may signal dissatisfaction, activism, or strategic repositioning by sophisticated investors (Edmans et al., 2013; Gantchev and Jotikasthira, 2018). This enhanced monitoring capability increases the potential reputational and market consequences of poor performance or governance failures, as unsophisticated investors can more readily identify and respond to signals of institutional investor concern or activist intervention. Corporate managers, recognizing this enhanced scrutiny and the potential for unsophisticated investors to follow the lead of sophisticated investors who are revealed through accelerated beneficial ownership reporting, have incentives to increase voluntary disclosure as a means of demonstrating transparency, accountability, and proactive communication with all investor constituencies. The literature on investor heterogeneity and disclosure policy suggests that firms optimally adjust their communication strategies when regulatory changes alter the information processing capabilities of different investor types, particularly when such changes reduce information asymmetries that previously favored sophisticated investors (Bushee and Noe, 2000; Boone and White, 2015). Based on these theoretical considerations and empirical evidence from prior research on disclosure responses to regulatory changes affecting investor information environments, we predict that the Beneficial Ownership Reporting Modernization increased firms' voluntary disclosure through the enhanced information processing and monitoring capabilities it provided to unsophisticated investors.

H1: The Beneficial Ownership Reporting Modernization increased voluntary disclosure by firms due to enhanced information processing and monitoring capabilities of unsophisticated investors.

RESEARCH DESIGN

Sample Selection and Regulatory Context

Our analysis examines the impact of the Beneficial Ownership Reporting Modernization Act of 2006 on voluntary disclosure through the investors channel using a comprehensive sample of all firms in the Compustat universe during our study period. The Securities and Exchange Commission (SEC) implemented this regulation to modernize beneficial ownership reporting by requiring electronic filing and establishing shortened reporting deadlines for significant ownership changes. While the regulation primarily targets institutional investors and large shareholders who must file beneficial ownership reports, our research design examines the spillover effects on voluntary disclosure behavior across all publicly traded firms. This comprehensive approach allows us to capture the broader market-wide implications of enhanced ownership transparency on managerial disclosure incentives (Bushee and Noe, 2000; Ajinkya et al., 2005).

The treatment variable in our analysis affects all firms in the sample, as the regulation's impact on ownership transparency and investor information processing creates market-wide incentives for voluntary disclosure. This design follows prior literature examining regulatory changes that create economy-wide effects on corporate disclosure behavior (Healy and Palepu, 2001; Beyer et al., 2010). Our pre-post research design compares voluntary disclosure patterns before and after the 2006 implementation, allowing us to identify changes in managerial forecasting behavior attributable to the enhanced beneficial ownership reporting environment.

Model Specification

We employ a regression framework to examine the relationship between the Beneficial Ownership Reporting Modernization and voluntary disclosure through the investors channel. Our empirical model follows established approaches in the voluntary disclosure literature (Ajinkya et al., 2005; Chuk et al., 2013) and incorporates control variables that prior research has identified as key determinants of management forecast frequency. The model specification allows us to isolate the effect of enhanced beneficial ownership reporting on voluntary disclosure while controlling for firm-specific characteristics that influence managers' disclosure decisions.

Our regression model controls for factors that prior literature has established as important determinants of voluntary disclosure behavior. We include institutional ownership, firm size, book-to-market ratio, profitability, stock returns, earnings volatility, loss occurrence, and litigation risk as control variables based on theoretical predictions and empirical evidence from prior studies (Ajinkya et al., 2005; Chuk et al., 2013; Billings et al., 2015). These variables capture the primary economic incentives and constraints that influence managers' decisions to provide voluntary guidance to investors. We also include a time trend to control for secular changes in disclosure practices over our sample period.

The research design addresses potential endogeneity concerns through the regulatory setting, as the timing and implementation of the Beneficial Ownership Reporting Modernization Act represents an exogenous shock to the information environment (Leuz and Wysocki, 2016). The regulation's implementation was driven by regulatory objectives rather than firm-specific disclosure considerations, providing identification for causal inference. Additionally, our comprehensive control variable specification helps mitigate concerns about omitted variable bias by including the primary determinants of voluntary disclosure identified in prior literature.

Mathematical Model

Our empirical specification takes the following form:

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

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

Variable Definitions

The dependent variable, FreqMF, measures management forecast frequency and captures the extent of voluntary disclosure through earnings guidance. This variable reflects managers' decisions to provide forward-looking information to investors and serves as a primary measure of voluntary disclosure in the accounting literature (Hirst et al., 2008; Beyer et al., 2010). Higher values indicate more frequent management guidance, representing greater voluntary disclosure activity.

The Treatment Effect variable is an indicator variable equal to one for the post-Beneficial Ownership Reporting Modernization period from 2006 onwards, and zero otherwise. This variable captures the regulatory change that enhanced beneficial ownership reporting requirements and shortened disclosure deadlines for significant ownership changes. The coefficient β_1 represents the average change in management forecast frequency attributable to the improved beneficial ownership reporting environment.

Our control variables include several firm characteristics that prior research has identified as key determinants of voluntary disclosure. Institutional Ownership (linstown) captures the proportion of shares held by institutional investors, with higher institutional ownership typically associated with greater demand for voluntary disclosure (Ajinkya et al., 2005). Firm Size (lsize) controls for the economies of scale in disclosure production and greater analyst following of larger firms (Lang and Lundholm, 1993). Book-to-Market (lbtm) captures growth opportunities and information asymmetry, with growth firms typically providing more forward-looking information (Skinner, 1994). ROA (lroa) measures profitability and managers' incentives to communicate good performance (Miller, 2002). Stock Return (lsaret12) controls for recent performance and momentum effects on disclosure decisions (Chuk et al., 2013). Earnings Volatility (levol) captures the uncertainty in the firm's operating environment and the potential value of managerial guidance (Waymire, 1985). Loss (lloss) is an indicator for loss-making firms, as managers of poorly performing firms may have different disclosure incentives (Kasznik and Lev, 1995). Class Action Litigation Risk (lcalrisk) controls for legal concerns that may constrain voluntary disclosure (Skinner, 1994; Johnson et al., 2001).

Sample Construction

Our sample construction centers on a five-year window surrounding the 2006 implementation of the Beneficial Ownership Reporting Modernization Act, spanning two years before and two years after the regulatory change. The post-regulation period includes 2006 onwards, allowing us to capture both the immediate and subsequent effects of enhanced beneficial ownership reporting on voluntary disclosure behavior. This event window provides sufficient observations to identify the regulatory impact while limiting the influence of other concurrent regulatory or market changes that might confound our results (Leuz and Wysocki, 2016).

We construct our sample using data from multiple sources to ensure comprehensive coverage of firm characteristics and disclosure behavior. Financial statement data comes from Compustat, management forecast data from I/B/E/S, auditor information from Audit Analytics, and stock return data from CRSP. This multi-database approach follows established practices in the voluntary disclosure literature and ensures that our analysis captures the relevant dimensions of firm performance, governance, and disclosure behavior (Beyer et al., 2010; Chuk et al., 2013).

Our final sample consists of 18,611 firm-year observations representing all firms in the Compustat universe during our study period with available data for the required variables. The treatment group includes all firms in the post-2006 period, while the control group comprises the same firms in the pre-regulation years. This within-firm comparison helps control for unobserved firm-specific factors that might influence disclosure behavior. We apply standard data filters to exclude observations with missing values for key variables and remove extreme outliers that might unduly influence our results, following conventional practices in accounting research (Petersen, 2009).

DESCRIPTIVE STATISTICS

Sample Description and Descriptive Statistics

Our sample consists of 18,611 firm-year observations representing 4,938 unique firms over the period 2004 to 2008. This timeframe captures the implementation of beneficial ownership reporting modernization rules, providing a natural experimental setting to examine the effects on unsophisticated investors.

We examine several key firm characteristics that prior literature identifies as determinants of institutional ownership and investor sophistication. Institutional ownership (linstown) exhibits substantial variation across our sample, with a mean of 51.4% and standard deviation of 31.8%. The distribution appears reasonably symmetric, as the median (53.9%) closely approximates the mean. The interquartile range spans from 21.8% to 79.0%, indicating considerable cross-sectional variation in institutional holdings consistent with prior studies (Bushee, 1998; Nagel, 2005).

Firm size (lsize) shows the expected right-skewed distribution typical of corporate samples, with a mean of 6.007 and median of 5.929. The standard deviation of 1.985 suggests substantial size heterogeneity across sample firms. Book-to-market ratios (lbtm) average 0.497 with a median of 0.444, indicating our sample includes both growth and value firms. We observe some extreme values, with the maximum reaching 3.676, though such observations represent less than 1% of the sample.

Profitability measures reveal interesting patterns. Return on assets (lroa) exhibits a slightly negative mean (-0.030) but positive median (0.025), suggesting the presence of firms with substantial losses that skew the distribution leftward. Consistent with this interpretation, we find that 28.8% of firm-years report losses (lloss), comparable to rates documented in recent accounting literature. Stock returns (lsaret12) show near-zero mean returns (0.001) with substantial dispersion (standard deviation of 0.497), reflecting the market volatility during our sample period.

Earnings volatility (levol) demonstrates the expected right-skewed distribution, with mean (0.152) substantially exceeding the median (0.054). This pattern aligns with prior research documenting that most firms exhibit relatively stable earnings, while a subset experiences high volatility. California risk scores (lcalrisk) average 0.292, suggesting moderate litigation risk across our sample firms.

Our treatment variables confirm the research design's validity. The post_law indicator shows that 57.9% of observations occur in the post-implementation period, while all firms receive treatment (treated = 1.000), consistent with the universal nature of the regulatory change. The mutual fund frequency measure (freqMF) exhibits substantial variation, with many firms showing zero frequency while others reach the maximum of 2.708, reflecting heterogeneous mutual fund attention across sample firms.

RESULTS

Regression Analysis

We examine the association between the 2006 Beneficial Ownership Reporting Modernization and voluntary disclosure using three model specifications that progressively control for additional factors. Our primary variable of interest is the treatment effect, which captures the change in voluntary disclosure following the implementation of accelerated beneficial ownership reporting requirements. Specification (1) presents a simple treatment effect without controls, revealing a negative coefficient of -0.0418 ($t = -4.02$, $p < 0.001$). However, this specification explains minimal variation in voluntary disclosure ($R^2 = 0.0005$), suggesting substantial omitted variable bias. Specification (2) incorporates firm-level control variables and a time trend, fundamentally altering our findings. The treatment effect becomes positive and statistically significant at 0.0617 ($t = 4.94$, $p < 0.001$), with the model's explanatory power increasing dramatically to 26.17%. This reversal demonstrates the critical importance of controlling for firm characteristics that simultaneously influence both the likelihood of being affected by beneficial ownership reporting changes and voluntary disclosure decisions.

The most rigorous specification (3) includes firm fixed effects to control for time-invariant unobserved heterogeneity that may confound the treatment effect. We find a positive and statistically significant treatment effect of 0.0313 ($t = 2.82$, $p = 0.005$), indicating that firms increased voluntary disclosure following the Beneficial Ownership Reporting Modernization. The inclusion of firm fixed effects substantially increases the R^2 to 85.00%, suggesting that firm-specific characteristics explain considerable variation in voluntary disclosure practices. The economic magnitude of this effect represents a meaningful increase in voluntary disclosure, particularly considering that disclosure measures typically exhibit relatively modest variation across firms and time periods. The statistical significance remains robust across specifications (2) and (3), providing confidence that our findings are not driven by model specification choices. The control variables exhibit patterns largely consistent with prior disclosure literature. Firm size (lsize) demonstrates a consistently positive association with voluntary disclosure across specifications (2) and (3), supporting established findings that larger firms engage in more extensive voluntary disclosure (Botosan, 1997; Lang and Lundholm, 1993). Interestingly, institutional ownership (linstown) exhibits opposing effects between specifications (2) and (3), positive without firm fixed effects but negative with firm fixed effects, suggesting that cross-sectional differences in institutional ownership correlate positively with disclosure, while within-firm changes in institutional ownership associate negatively with voluntary disclosure. Profitability (lroa) shows a positive association in specification (2) but becomes statistically insignificant in specification (3), indicating that profitable firms disclose more than less profitable firms, though changes in profitability within firms do not significantly predict disclosure changes. Loss firms (lloss) consistently exhibit lower voluntary disclosure across both specifications, aligning with literature suggesting that firms experiencing losses reduce discretionary disclosure to avoid drawing attention to poor performance. Stock return volatility (levol) presents mixed results, positive in specification (2) but negative in specification (3), while stock returns (lsaret12) show negative associations with disclosure in specification (3), potentially reflecting reduced disclosure incentives following positive performance periods.

Our results provide mixed support for H1, which predicted that the Beneficial Ownership Reporting Modernization would increase voluntary disclosure through enhanced unsophisticated investor information processing capabilities. The positive and statistically significant treatment effects in specifications (2) and (3) are consistent with our hypothesis that improved beneficial ownership reporting creates incentives for managers to increase voluntary disclosure. The economic rationale that managers respond to enhanced unsophisticated investor monitoring capabilities by providing additional contextual information finds empirical support in our most rigorous specification. However, the magnitude of the effect in specification (3) is approximately half that observed in specification (2), suggesting that firm-specific factors partially explain the association between the regulatory change and disclosure increases. While we cannot definitively establish causation due to potential confounding factors and the quasi-experimental nature of the regulatory change, the consistency of positive treatment effects across properly specified models supports the theoretical mechanism that enhanced information accessibility for unsophisticated investors creates managerial incentives to increase voluntary disclosure as a means of providing interpretive context for newly available ownership information.

CONCLUSION

This study examines how the Beneficial Ownership Reporting Modernization of 2006, which introduced electronic filing requirements and shortened reporting deadlines for significant ownership changes, affected firms' voluntary disclosure practices through the investors channel. We investigate whether enhanced transparency in beneficial ownership reporting creates incentives for managers to adjust their voluntary disclosure strategies in response to increased investor scrutiny and information demands. Our empirical analysis reveals nuanced effects that depend critically on model specification and the inclusion of control variables, suggesting that the relationship between mandatory ownership disclosure reforms and voluntary disclosure is more complex than previously understood.

Our findings demonstrate statistically significant treatment effects across all specifications, though the direction and magnitude vary considerably. In our baseline specification without controls, we find a negative treatment effect of -0.0418 ($t = 4.02$, $p < 0.001$), suggesting that the modernization initially reduced voluntary disclosure. However, when we incorporate firm-specific control variables in our second specification, the treatment effect becomes positive and economically meaningful at 0.0617 ($t = 4.94$, $p < 0.001$), with the R-squared increasing dramatically from 0.0005 to 0.2617. Our most comprehensive specification, which includes additional controls and achieves an R-squared of 0.8500, yields a positive treatment effect of 0.0313 ($t = 2.82$, $p < 0.01$). These results indicate that the Beneficial Ownership Reporting Modernization led to increased voluntary disclosure, but only after accounting for firm characteristics that fundamentally influence disclosure decisions. The positive coefficients in our more complete specifications suggest that enhanced beneficial ownership transparency creates complementary effects, encouraging managers to provide additional voluntary disclosures to meet heightened investor information demands following ownership changes.

The implications of our findings extend to multiple stakeholders in the financial reporting ecosystem. For regulators, our results provide evidence that modernizing mandatory disclosure requirements can generate positive spillover effects on voluntary disclosure, supporting the SEC's efforts to enhance market transparency through technological improvements and shortened reporting windows. The finding that beneficial ownership reporting modernization increases voluntary disclosure suggests that regulatory reforms targeting specific information channels can have broader effects on corporate transparency. However, the sensitivity of our results to model specification underscores the importance of considering firm heterogeneity when evaluating regulatory effectiveness. For corporate managers, our findings indicate that improvements in beneficial ownership reporting create an environment where voluntary disclosure becomes more valuable, potentially as a means to provide context and reduce information asymmetries when significant ownership changes occur. This suggests that managers should anticipate increased investor attention following ownership disclosures and prepare comprehensive communication strategies accordingly. For investors, our results imply that regulatory modernization efforts enhance not only the mandated information environment but also encourage additional voluntary disclosures that can inform investment decisions. The positive treatment effects in our controlled specifications suggest that investors benefit from both the direct effects of faster, electronic beneficial ownership reporting and the indirect effects of increased voluntary disclosure that accompanies these regulatory improvements (Shroff et al., 2013; Christensen et al., 2016).

Our study faces several important limitations that future research should address. First, our analysis focuses specifically on the 2006 modernization of beneficial ownership reporting, and the generalizability of our findings to other regulatory reforms or time periods remains an empirical question. The substantial variation in treatment effects across specifications suggests that unobserved firm characteristics may influence the relationship between mandatory and voluntary disclosure in ways that our controls do not fully capture. Additionally, while we document changes in voluntary disclosure following the regulatory reform, we cannot definitively establish the precise mechanisms through which beneficial ownership reporting modernization affects managerial disclosure decisions. Future research could employ more granular measures of investor attention and information processing to better understand the causal pathways linking ownership transparency to voluntary disclosure choices.

Several promising avenues for future research emerge from our findings. First, researchers could examine whether the effects we document vary across different types of voluntary disclosures, such as management forecasts, conference calls, or social media communications, to understand which disclosure channels are most responsive to enhanced ownership transparency. Second, future studies could investigate whether the relationship between beneficial ownership reporting and voluntary disclosure varies with firm characteristics such as analyst coverage, institutional ownership concentration, or governance quality. Third, researchers could extend our analysis to examine whether similar effects occur following other regulatory reforms that enhance mandatory disclosure requirements, thereby testing the broader applicability of complementary disclosure effects. Finally, given the continued evolution of beneficial ownership reporting requirements, including recent proposals for further modernization, future research could examine how successive waves of regulatory reform affect the voluntary disclosure environment and whether firms and investors adapt their behavior as these requirements become more established (Balakrishnan et al., 2014; Christensen et al., 2013).

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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
Beneficial Ownership Reporting Modernization Unsophisticated Investors

	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 Beneficial Ownership Reporting Modernization 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.