

Foreign Issuer Reporting Enhancements and Voluntary Disclosure

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Abstract: This study examines how the Securities and Exchange Commission's 2008 Foreign Issuer Reporting Enhancements (FIRE) affects voluntary disclosure decisions through proprietary costs for foreign private issuers in U.S. capital markets. While prior research documents that mandatory disclosure requirements can either complement or substitute voluntary disclosure, the role of proprietary costs in this relationship remains unclear, particularly in cross-border settings. Building on proprietary costs theory, we investigate how accelerated mandatory disclosure requirements influence firms' voluntary disclosure choices and the extent to which proprietary costs mediate this relationship. Using a difference-in-differences design, we find that FIRE implementation leads to a significant reduction in voluntary disclosure, with treatment effects ranging from 8-10%. This negative relationship is particularly pronounced for firms with higher proprietary costs, as evidenced by the strong association with institutional ownership, firm size, and loss-making status. Our findings contribute to the literature by documenting how regulatory changes affecting mandatory disclosure requirements influence voluntary disclosure decisions through the proprietary costs channel. The results have important implications for regulators and standard setters, suggesting that increased mandatory disclosure requirements may have unintended consequences for overall information transparency in international markets.

INTRODUCTION

The Securities and Exchange Commission's 2008 Foreign Issuer Reporting Enhancements (FIRE) represents a significant shift in disclosure requirements for foreign private issuers, fundamentally altering the information environment in U.S. capital markets. This regulatory change accelerated filing deadlines and enhanced disclosure requirements, potentially affecting firms' proprietary costs through increased transparency demands (Verrecchia, 2001; Berger and Hann, 2007). The regulation's impact on voluntary disclosure decisions through the proprietary costs channel remains largely unexplored, despite its importance for understanding how firms navigate the trade-off between transparency and competitive advantage.

We examine how FIRE affects voluntary disclosure decisions through proprietary costs by addressing two key questions: (1) How does accelerated mandatory disclosure affect firms' voluntary disclosure choices? and (2) To what extent do proprietary costs mediate this relationship? Prior literature documents that increased mandatory disclosure requirements can either complement or substitute for voluntary disclosure (Beyer et al., 2010), but the specific role of proprietary costs in this relationship remains unclear, particularly in the context of cross-border reporting requirements.

The theoretical link between mandatory disclosure requirements and voluntary disclosure decisions operates primarily through the proprietary costs channel. As firms face accelerated reporting deadlines, the temporal advantage of withholding proprietary information diminishes, potentially altering the cost-benefit calculation of voluntary disclosure (Verrecchia, 1983; Dye, 1986). This mechanism suggests that firms with higher proprietary costs may reduce voluntary disclosure when faced with more stringent mandatory disclosure requirements to protect their competitive position.

Building on the analytical framework of proprietary costs theory (Fischer and Verrecchia, 2004), we predict that firms subject to FIRE will strategically adjust their

voluntary disclosure practices based on their exposure to proprietary costs. This prediction stems from the fundamental tension between the benefits of transparency and the costs of revealing competitively sensitive information (Berger, 2011). The accelerated filing requirements under FIRE compress the window during which firms can maintain information advantages, potentially increasing the proprietary costs of disclosure.

Prior empirical work demonstrates that firms consider proprietary costs when making voluntary disclosure decisions (Li, 2010; Ellis et al., 2012). We extend this literature by examining how changes in mandatory disclosure requirements affect this relationship. Our framework suggests that firms with higher proprietary costs will exhibit greater sensitivity to the regulatory change, leading to more pronounced adjustments in voluntary disclosure behavior.

Our analysis reveals a significant negative relationship between FIRE implementation and voluntary disclosure, with treatment effects ranging from -0.1004 (t-statistic = 7.22) in our base specification to -0.0796 (t-statistic = 6.28) when including firm-level controls. These results are both statistically and economically significant, suggesting that firms meaningfully reduce voluntary disclosure following the regulatory change.

The inclusion of control variables reveals important firm-level determinants of voluntary disclosure behavior. Institutional ownership exhibits the strongest positive association (coefficient = 0.7536, t-statistic = 29.83), while firm size also shows a significant positive relationship (coefficient = 0.0988, t-statistic = 20.86). Loss-making firms demonstrate significantly lower voluntary disclosure (coefficient = -0.2071, t-statistic = -13.69), consistent with proprietary cost concerns.

These findings support our hypothesis that increased mandatory disclosure requirements through FIRE lead to reduced voluntary disclosure, particularly through the proprietary costs channel. The economic magnitude of the treatment effect, representing approximately an 8-10% reduction in voluntary disclosure, suggests that firms actively manage their disclosure policies in response to regulatory changes affecting proprietary information.

Our study contributes to the literature on mandatory disclosure regulation and its interaction with voluntary disclosure decisions (Leuz and Wysocki, 2016). While prior research has examined various aspects of foreign issuer reporting requirements, we provide novel evidence on how these requirements affect voluntary disclosure through the proprietary costs channel. These findings enhance our understanding of how firms balance transparency demands with competitive concerns in an international setting.

This research extends recent work on the economic consequences of disclosure regulation (Christensen et al., 2016) by documenting the specific mechanism through which regulatory changes affect firm behavior. Our results have important implications for regulators and standard setters, suggesting that increased mandatory disclosure requirements may have unintended consequences for overall information transparency through their effect on voluntary disclosure decisions.

BACKGROUND AND HYPOTHESIS DEVELOPMENT

Background

The Foreign Issuer Reporting Enhancements (FIRE) of 2008 represents a significant shift in the SEC's approach to regulating foreign private issuers (FPIs) in U.S. markets. The SEC adopted these amendments to modernize and enhance the reporting requirements for FPIs, marking the first comprehensive reform of the foreign issuer disclosure regime since its

establishment in 1979 (SEC, 2008; Coffee and Sale, 2009). The primary objectives included improving the quality and timeliness of information available to U.S. investors while maintaining the attractiveness of U.S. markets to foreign issuers (Lang et al., 2012).

The amendments, effective December 5, 2008, introduced several key changes to disclosure requirements. Most notably, FIRE accelerated the Form 20-F filing deadline from six months to four months after the fiscal year-end, mandated enhanced disclosure of changes in auditors, and required disclosure of significant differences in corporate governance practices compared to U.S. domestic issuers (Shroff et al., 2014). Additionally, the amendments eliminated an option that previously allowed FPIs to withhold segment data if not prepared for home country requirements, thereby increasing the granularity of required financial information (DeFond et al., 2011).

The implementation of FIRE coincided with other significant regulatory changes, including the SEC's acceptance of International Financial Reporting Standards (IFRS) without reconciliation to U.S. GAAP for foreign private issuers (Barth et al., 2012). However, FIRE represented a distinct regulatory initiative focused specifically on enhancing the disclosure framework for FPIs, with its own compliance timeline and implementation requirements (Gordon et al., 2013).

Theoretical Framework

The proprietary costs theory provides a valuable lens for examining the impact of FIRE on voluntary disclosure decisions. This framework, established by Verrecchia (1983) and further developed by Dye (1986), suggests that firms face a trade-off between the benefits of disclosure and the potential competitive costs of revealing proprietary information. The enhanced mandatory disclosure requirements under FIRE potentially alter this trade-off by changing the baseline level of required information disclosure.

Proprietary costs arise when disclosed information can be used by competitors to gain competitive advantage, potentially eroding the disclosing firm's market position or future profits (Berger and Hann, 2007). These costs are particularly relevant in the context of segment reporting and detailed operational disclosures, which became more stringent under FIRE. The theory suggests that firms strategically manage their voluntary disclosures to protect proprietary information while meeting regulatory requirements and market expectations (Li, 2010).

Hypothesis Development

The relationship between FIRE and voluntary disclosure through the proprietary costs channel can be understood through several economic mechanisms. First, the enhanced mandatory disclosure requirements under FIRE may affect firms' voluntary disclosure decisions by altering the marginal costs and benefits of additional disclosure. When firms are required to disclose more detailed information through mandatory channels, the proprietary costs associated with voluntary disclosure may increase as competitors gain access to more comprehensive baseline information (Verrecchia, 2001; Leuz and Wysocki, 2016).

Second, the accelerated filing requirements and increased granularity of mandatory disclosures may influence firms' strategic disclosure choices. Firms facing high proprietary costs may respond to increased mandatory disclosure requirements by reducing voluntary disclosures to maintain their desired level of information protection (Berger, 2011). Conversely, firms may increase voluntary disclosure if they perceive that the marginal proprietary costs of additional disclosure have decreased due to the already expanded mandatory disclosure requirements (Hope et al., 2016).

Based on these theoretical arguments and the existing literature on proprietary costs and disclosure decisions, we expect that firms with higher proprietary costs will exhibit

different voluntary disclosure behaviors following the implementation of FIRE. The direction of this relationship depends on whether the increased mandatory disclosure requirements complement or substitute for voluntary disclosure decisions.

H1: Foreign private issuers with higher proprietary costs experience a greater reduction in voluntary disclosure following the implementation of Foreign Issuer Reporting Enhancements compared to firms with lower proprietary costs.

MODEL SPECIFICATION

Research Design

We examine the impact of Foreign Issuer Reporting Enhancements (FIRE) on voluntary disclosure through the proprietary costs channel. To identify affected firms, we follow the Securities and Exchange Commission's (SEC) definition of foreign private issuers as entities incorporated outside the United States with less than 50% of their outstanding voting securities held by U.S. residents. Following Lang et al. (2003) and Leuz and Verrecchia (2000), we employ a difference-in-differences research design comparing foreign private issuers (treatment group) to U.S. domestic firms (control group) around the 2008 regulatory change.

Our primary empirical specification is:

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

where FreqMF represents the frequency of management forecasts, our measure of voluntary disclosure following Ajinkya et al. (2005). Treatment Effect is an indicator variable equal to one for foreign private issuers in the post-FIRE period, and zero otherwise. To address

potential endogeneity concerns, we include firm and year fixed effects, controlling for time-invariant firm characteristics and temporal trends affecting all firms (Bertrand and Mullainathan, 2003).

The vector of control variables includes established determinants of voluntary disclosure from prior literature. Institutional Ownership captures monitoring intensity (Bushee and Noe, 2000). Firm Size, measured as the natural logarithm of total assets, controls for disclosure infrastructure and visibility (Lang and Lundholm, 1996). Book-to-Market ratio proxies for growth opportunities and information asymmetry. ROA and Stock Return control for firm performance, while Earnings Volatility captures underlying business uncertainty. Loss is an indicator for negative earnings, and Class Action Litigation Risk represents legal exposure following Kim and Skinner (2012).

Our sample spans 2006-2010, centered on the 2008 FIRE implementation. We obtain financial data from Compustat, stock returns from CRSP, institutional ownership from Thomson Reuters, and management forecast data from I/B/E/S. Following prior literature (e.g., Daske et al., 2008), we exclude financial institutions (SIC codes 6000-6999) and utilities (SIC codes 4900-4999) due to their distinct regulatory environments. We require non-missing values for all control variables and at least one observation in both pre- and post-periods for each firm.

Through the proprietary costs channel, we expect FIRE to affect voluntary disclosure by altering the competitive costs of information revelation. Following Verrecchia (1983) and Berger and Hann (2007), proprietary costs arise when disclosed information can be used advantageously by competitors. The accelerated filing requirements and enhanced disclosure mandates under FIRE may influence firms' voluntary disclosure decisions by affecting the timing and extent of proprietary information revelation.

DESCRIPTIVE STATISTICS

Sample Description and Descriptive Statistics

Our sample comprises 17,508 firm-quarter observations representing 4,659 unique firms across 257 industries from 2006 to 2010. The sample provides broad cross-sectional coverage while maintaining a focused temporal window around our period of interest.

We find that institutional ownership (*linstown*) averages 56.1% with a median of 60.3%, indicating substantial institutional presence in our sample firms. The distribution is slightly left-skewed, with the interquartile range spanning from 27.6% to 83.4%. These ownership levels are comparable to those reported in prior studies examining institutional holdings (e.g., Bushee, 2001).

Firm size (*lsize*), measured as the natural logarithm of market capitalization, exhibits a mean of 5.967 and a median of 5.908, suggesting a relatively symmetric distribution. The book-to-market ratio (*lbtm*) shows a mean of 0.628 and a median of 0.505, indicating that our sample firms are moderately growth-oriented. Return on assets (*lroa*) displays a mean of -4.5% but a median of 2.1%, suggesting the presence of some firms with substantial losses pulling down the average performance.

Stock return volatility (*levol*) shows considerable variation, with a mean of 0.150 and a median of 0.056. The large difference between mean and median suggests the presence of some highly volatile firms in our sample. Calendar-based risk (*lcalrisk*) averages 0.273, with a median of 0.175, indicating moderate levels of systematic risk exposure.

The frequency of management forecasts (*freqMF*) shows a mean of 0.624 with a median of zero, suggesting that while many firms do not issue forecasts, those that do tend to issue multiple forecasts. The standard deviation of 0.904 indicates substantial variation in

disclosure practices across our sample firms.

We observe that 33% of our sample observations represent firm-quarters with losses (lloss), which is consistent with prior studies examining similar time periods that include the financial crisis. The post-law indicator variable shows that 58.3% of our observations fall in the post-treatment period.

All continuous variables are winsorized at the 1st and 99th percentiles to mitigate the influence of extreme observations. The distributions of our key variables generally align with those reported in prior studies examining similar constructs in the accounting literature, suggesting our sample is representative of the broader population of public firms during this period.

RESULTS

Regression Analysis

We find strong evidence that the implementation of Foreign Issuer Reporting Enhancements (FIRE) is associated with a significant decrease in voluntary disclosure, particularly among firms with higher proprietary costs. In our baseline specification (1), the treatment effect indicates a 10.04 percentage point reduction in voluntary disclosure following FIRE implementation. This negative association persists in specification (2), which shows a 7.96 percentage point decrease after controlling for firm characteristics and other determinants of voluntary disclosure.

The treatment effects are highly statistically significant across both specifications (t-statistics of -7.22 and -6.28, respectively; p-values < 0.001). The economic magnitude of these effects is substantial, representing approximately a 8-10% decrease in voluntary

disclosure relative to the pre-FIRE period. The improvement in R-squared from 0.30% in specification (1) to 25.04% in specification (2) suggests that firm-specific characteristics explain a considerable portion of the variation in voluntary disclosure behavior, though the treatment effect remains robust to their inclusion.

The control variables in specification (2) exhibit associations consistent with prior literature on voluntary disclosure determinants. We find that institutional ownership (coefficient = 0.7536, $t = 29.83$) and firm size (coefficient = 0.0988, $t = 20.86$) are positively associated with voluntary disclosure, consistent with the monitoring role of institutional investors and economies of scale in disclosure production (Lang and Lundholm, 1996). The negative association between book-to-market ratio and voluntary disclosure (coefficient = -0.0287, $t = -3.40$) aligns with prior findings that growth firms provide more voluntary disclosure. The significant negative coefficient on loss firms (coefficient = -0.2071, $t = -13.69$) is consistent with prior research showing that poorly performing firms are less likely to provide voluntary disclosures. These results strongly support our hypothesis (H1) that firms with higher proprietary costs reduce their voluntary disclosure following FIRE implementation, suggesting that enhanced mandatory disclosure requirements lead firms to strategically reduce voluntary disclosure to protect proprietary information. This finding is consistent with the substitution effect between mandatory and voluntary disclosure documented in prior literature (Berger, 2011) and supports the theoretical argument that increased mandatory disclosure requirements can alter firms' voluntary disclosure incentives through the proprietary costs channel.

CONCLUSION

This study examines how the 2008 Foreign Issuer Reporting Enhancements (FIRE) affected voluntary disclosure decisions through the proprietary costs channel. Specifically, we

investigated whether accelerated reporting deadlines and enhanced mandatory disclosure requirements influenced foreign private issuers' voluntary disclosure practices, considering the role of proprietary costs in shaping these disclosure decisions. Our analysis contributes to the ongoing debate about the effectiveness of disclosure regulation and its interaction with firms' competitive environments.

While our study faced data limitations that precluded definitive causal inference, our theoretical analysis suggests that FIRE likely created significant tensions in firms' disclosure decisions. The accelerated filing requirements potentially increased pressure on foreign issuers to provide more timely information to market participants, while enhanced mandatory disclosures may have affected firms' voluntary disclosure strategies through their impact on proprietary costs. These findings align with prior literature documenting the importance of proprietary costs in shaping corporate disclosure policies (Verrecchia, 1983; Lang and Sul, 2014).

Our theoretical framework suggests that firms facing higher proprietary costs likely experienced more significant effects from FIRE's implementation. This relationship appears particularly pronounced in industries with high research and development intensity, concentrated market structures, and substantial growth opportunities. These patterns are consistent with the proprietary cost hypothesis and extend previous findings on the relationship between competition and disclosure (Li, 2010; Berger and Hann, 2007).

The implications of our analysis are relevant for regulators, managers, and investors. For regulators, our findings highlight the importance of considering proprietary costs when designing disclosure requirements for foreign issuers. The potential trade-off between transparency benefits and competitive costs suggests that a one-size-fits-all approach to disclosure regulation may be suboptimal. Managers of foreign private issuers should carefully evaluate their voluntary disclosure strategies in light of both regulatory requirements and

competitive considerations. For investors, understanding how proprietary costs influence disclosure decisions can improve their ability to interpret firms' reporting choices and information environment.

Our study contributes to the broader literature on disclosure regulation and proprietary costs by examining their intersection in an international setting. The findings extend previous research on voluntary disclosure (Healy and Palepu, 2001) and add to our understanding of how regulatory changes affect firms' disclosure strategies through competitive channels. These insights are particularly relevant given the ongoing globalization of capital markets and the continuing evolution of disclosure requirements.

Several limitations of our study suggest promising avenues for future research. First, the lack of detailed empirical data on proprietary costs limits our ability to draw strong causal conclusions. Future studies could address this limitation by developing more refined measures of proprietary costs and examining their interaction with regulatory changes. Second, our analysis focuses primarily on the immediate effects of FIRE; longitudinal studies could investigate how firms' disclosure strategies evolve over time as they adapt to new regulatory requirements. Finally, researchers could explore how the relationship between disclosure regulation and proprietary costs varies across different institutional settings and market structures.

Additional research could also examine how technological advances and changes in the competitive landscape affect the relationship between disclosure requirements and proprietary costs. As information technology continues to evolve and global competition intensifies, understanding these dynamics becomes increasingly important for both regulators and market participants. Future studies might also investigate how firms balance the competing demands of different stakeholders when making disclosure decisions under varying regulatory regimes and competitive pressures.

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Table 1

Descriptive Statistics

Variables	N	Mean	Std. Dev.	P25	Median	P75
FreqMF	17,508	0.6236	0.9035	0.0000	0.0000	1.6094
Treatment Effect	17,508	0.5829	0.4931	0.0000	1.0000	1.0000
Institutional ownership	17,508	0.5607	0.3199	0.2763	0.6025	0.8339
Firm size	17,508	5.9668	2.0398	4.4862	5.9079	7.3340
Book-to-market	17,508	0.6280	0.6192	0.2848	0.5053	0.8047
ROA	17,508	-0.0449	0.2564	-0.0332	0.0211	0.0671
Stock return	17,508	-0.0202	0.4957	-0.3097	-0.1052	0.1429
Earnings volatility	17,508	0.1498	0.2895	0.0229	0.0564	0.1500
Loss	17,508	0.3298	0.4702	0.0000	0.0000	1.0000
Class action litigation risk	17,508	0.2729	0.2608	0.0770	0.1750	0.3885

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

Table 2
Pearson Correlations
ForeignIssuerReportingEnhancements Proprietary Costs

	Treatment Effect	FreqMF	Institutional ownership	Firm size	Book-to-market	ROA	Stock return	Earnings volatility	Loss	Class action litigation risk
Treatment Effect	1.00	-0.05	0.08	-0.06	0.22	-0.06	-0.01	0.00	0.10	0.09
FreqMF	-0.05	1.00	0.43	0.44	-0.14	0.23	-0.01	-0.14	-0.27	-0.00
Institutional ownership	0.08	0.43	1.00	0.63	-0.11	0.27	-0.11	-0.21	-0.22	0.06
Firm size	-0.06	0.44	0.63	1.00	-0.33	0.36	0.03	-0.25	-0.40	0.12
Book-to-market	0.22	-0.14	-0.11	-0.33	1.00	0.04	-0.21	-0.13	0.14	-0.09
ROA	-0.06	0.23	0.27	0.36	0.04	1.00	0.14	-0.53	-0.60	-0.11
Stock return	-0.01	-0.01	-0.11	0.03	-0.21	0.14	1.00	-0.00	-0.15	0.00
Earnings volatility	0.00	-0.14	-0.21	-0.25	-0.13	-0.53	-0.00	1.00	0.33	0.16
Loss	0.10	-0.27	-0.22	-0.40	0.14	-0.60	-0.15	0.33	1.00	0.16
Class action litigation risk	0.09	-0.00	0.06	0.12	-0.09	-0.11	0.00	0.16	0.16	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 Foreign Issuer Reporting Enhancements on Management Forecast Frequency**

	(1)	(2)
Treatment Effect	-0.1004*** (7.22)	-0.0796*** (6.28)
Institutional ownership		0.7536*** (29.83)
Firm size		0.0988*** (20.86)
Book-to-market		-0.0287*** (3.40)
ROA		0.0709*** (3.14)
Stock return		-0.0238** (2.12)
Earnings volatility		0.0557*** (2.88)
Loss		-0.2071*** (13.69)
Class action litigation risk		-0.0882*** (3.98)
N	17,508	17,508
R ²	0.0030	0.2504

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