

# 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 practices through the information asymmetry channel. While prior research establishes that information asymmetry influences voluntary disclosure decisions, evidence on how mandatory disclosure requirements affect this relationship remains limited. Using a difference-in-differences design, we investigate whether FIRE's enhanced mandatory disclosure requirements complement or substitute for voluntary disclosure among foreign private issuers. Our analysis reveals that affected firms significantly reduced their voluntary disclosure following FIRE implementation, with a treatment effect of -0.1004 (t-statistic = 7.22) in the baseline specification. This negative relationship remains robust when controlling for firm characteristics, suggesting that enhanced mandatory disclosure requirements act as substitutes for voluntary disclosure through the information asymmetry channel. The economic magnitude is substantial, with institutional ownership and firm size emerging as significant determinants of voluntary disclosure behavior. Our findings contribute to the literature by documenting how mandatory disclosure regulations affect voluntary disclosure choices in international settings and provide important implications for regulators regarding the unintended consequences of disclosure requirements on firms' information environment.

## INTRODUCTION

The Securities and Exchange Commission's 2008 Foreign Issuer Reporting Enhancements (FIRE) represents a significant regulatory shift in disclosure requirements for foreign private issuers, fundamentally altering the information environment in U.S. capital markets. This regulation accelerated filing deadlines and enhanced disclosure requirements, directly addressing information asymmetry concerns between foreign issuers and market participants (Diamond and Verrecchia, 1991; Leuz and Verrecchia, 2000). The relationship between mandatory disclosure regulations and voluntary disclosure decisions remains a central question in accounting research, particularly in international settings where information asymmetries are potentially more severe.

We examine how FIRE affects voluntary disclosure through the information asymmetry channel, addressing a crucial gap in our understanding of the interplay between mandatory and voluntary disclosure regimes. Prior literature documents that information asymmetry influences firms' voluntary disclosure decisions (Verrecchia, 2001), but evidence on how mandatory disclosure requirements affect this relationship remains limited. Our study specifically investigates whether enhanced mandatory disclosure requirements complement or substitute for voluntary disclosure practices among foreign issuers.

The theoretical link between mandatory disclosure requirements and voluntary disclosure operates primarily through the information asymmetry channel. Enhanced mandatory disclosure requirements can reduce information asymmetry by increasing the quantity and quality of publicly available information (Lang and Lundholm, 1996). This reduction in information asymmetry potentially affects managers' voluntary disclosure incentives through two competing mechanisms. First, reduced information asymmetry may decrease the marginal benefits of voluntary disclosure, leading to substitution effects (Beyer et

al., 2010). Alternatively, enhanced mandatory disclosure might create complementarities by reducing proprietary costs and establishing more credible disclosure channels (Dye, 1985).

Building on analytical models of disclosure choice under asymmetric information (Verrecchia, 2001; Dye, 1985), we predict that FIRE's enhanced mandatory disclosure requirements will affect voluntary disclosure practices through changes in information asymmetry. The regulation's accelerated filing deadlines and enhanced disclosure requirements should reduce baseline information asymmetry levels, potentially altering the cost-benefit trade-off of voluntary disclosure. This prediction aligns with theoretical work suggesting that mandatory and voluntary disclosures act as strategic complements or substitutes depending on their relative costs and benefits (Einhorn, 2005).

These theoretical frameworks, combined with empirical evidence on the relationship between disclosure requirements and information asymmetry (Leuz and Verrecchia, 2000), lead us to predict that FIRE will significantly impact voluntary disclosure practices through the information asymmetry channel. We hypothesize that reduced information asymmetry following FIRE implementation will lead to systematic changes in voluntary disclosure behavior among affected firms.

Our empirical analysis reveals a significant negative relationship between FIRE implementation and voluntary disclosure levels. The baseline specification shows a treatment effect of -0.1004 (t-statistic = 7.22), indicating that affected firms reduced their voluntary disclosure following the regulation. This effect remains robust when controlling for firm characteristics, with a treatment effect of -0.0796 (t-statistic = 6.28) in our full specification.

The economic magnitude of these effects is substantial, with institutional ownership (coefficient = 0.7536) and firm size (coefficient = 0.0988) emerging as significant

determinants of voluntary disclosure behavior. The negative treatment effect persists across various specifications, suggesting that FIRE's enhanced mandatory disclosure requirements act as substitutes for voluntary disclosure through the information asymmetry channel.

Our findings provide strong evidence that reduced information asymmetry following FIRE implementation led firms to decrease their voluntary disclosure activities. The high statistical significance of our results ( $p < 0.0001$ ) and the substantial R-squared improvement from 0.0030 to 0.2504 in our full specification demonstrate the robustness of this relationship.

This study contributes to the literature on mandatory disclosure regulation and its effects on voluntary disclosure choices (Beyer et al., 2010; Leuz and Verrecchia, 2000). Our findings extend prior work by documenting how enhanced mandatory disclosure requirements affect voluntary disclosure through the information asymmetry channel. The results provide novel evidence on the substitution effect between mandatory and voluntary disclosure in international settings.

The findings have important implications for regulators and market participants, suggesting that enhanced mandatory disclosure requirements can effectively reduce information asymmetry but may lead to unintended consequences for voluntary disclosure practices. Our analysis advances understanding of how disclosure regulations affect firms' information environment through multiple channels, contributing to both disclosure theory and regulatory policy.

## BACKGROUND AND HYPOTHESIS DEVELOPMENT

### Background

The Foreign Issuer Reporting Enhancements (FIRE) of 2008 represents a significant modification to the disclosure requirements for foreign private issuers (FPIs) in U.S. markets. The Securities and Exchange Commission (SEC) implemented these changes to modernize the reporting requirements and enhance investor protection while maintaining the attractiveness of U.S. markets to foreign issuers (Coffee, 2009; Lang et al., 2012). The amendments primarily affected Form 20-F requirements, accelerating filing deadlines and mandating additional disclosures about changes in auditors, audit committee financial experts, and corporate governance practices.

The SEC adopted FIRE on September 23, 2008, with most provisions becoming effective for fiscal years ending on or after December 15, 2008. The regulations shortened the Form 20-F filing deadline from 6 months to 4 months after the fiscal year-end and introduced requirements for segment data disclosure and enhanced corporate governance information (Leuz and Wysocki, 2016). These changes aimed to align FPI reporting requirements more closely with those applicable to domestic U.S. issuers, thereby reducing information gaps between domestic and foreign firms trading in U.S. markets.

During this period, the SEC also implemented other significant regulatory changes, including amendments to Rule 12h-6 regarding foreign private issuer deregistration and modifications to cross-border tender offer rules (DeFond et al., 2011). However, FIRE represented the most comprehensive overhaul of FPI reporting requirements since the introduction of Form 20-F in 1979.

### Theoretical Framework

Information asymmetry theory provides a natural lens through which to examine the effects of FIRE on voluntary disclosure decisions. Information asymmetry exists when one party in a transaction possesses superior information compared to other parties, potentially

leading to adverse selection and moral hazard problems (Diamond and Verrecchia, 1991; Healy and Palepu, 2001). In capital markets, information asymmetry between managers and investors can result in higher costs of capital and reduced market liquidity.

The relationship between mandatory disclosure requirements and voluntary disclosure decisions is fundamentally linked to information asymmetry. As Verrecchia (2001) and Beyer et al. (2010) demonstrate, firms often use voluntary disclosure to reduce information asymmetry when the benefits of disclosure outweigh the associated costs. Enhanced mandatory disclosure requirements can alter this cost-benefit calculation by changing the baseline level of information available to market participants.

#### Hypothesis Development

The implementation of FIRE potentially affects voluntary disclosure decisions through multiple information asymmetry-related channels. First, the accelerated filing deadlines and enhanced disclosure requirements directly reduce the information gap between FPIs and market participants (Lang et al., 2012). This reduction in baseline information asymmetry could either complement or substitute for voluntary disclosure practices. If mandatory and voluntary disclosures are complementary, enhanced mandatory requirements might lead to increased voluntary disclosure by reducing proprietary costs and establishing more standardized disclosure practices (Admati and Pfleiderer, 2000).

However, the relationship between mandatory and voluntary disclosure might also be substitutive. As mandatory disclosure requirements become more stringent, the marginal benefits of voluntary disclosure may decrease. Prior research suggests that firms balance the costs and benefits of voluntary disclosure, considering factors such as proprietary costs, litigation risk, and capital market benefits (Verrecchia, 2001; Leuz and Wysocki, 2016). The enhanced mandatory disclosure requirements under FIRE might reduce the incremental

information content of voluntary disclosures, potentially leading to a decrease in voluntary disclosure activities.

The net effect of FIRE on voluntary disclosure likely depends on which of these forces dominates. Given that FIRE significantly enhanced the quality and timeliness of mandatory disclosures, we expect the substitution effect to dominate. This prediction is consistent with theoretical models suggesting that increased mandatory disclosure requirements can crowd out voluntary disclosure (Einhorn, 2005) and empirical evidence on the relationship between mandatory and voluntary disclosure regimes (Beyer et al., 2010).

H1: Following the implementation of Foreign Issuer Reporting Enhancements, foreign private issuers subject to the new requirements will decrease their voluntary disclosure activities relative to unaffected firms.

## MODEL SPECIFICATION

### Research Design

We identify firms affected by the Foreign Issuer Reporting Enhancements (FIRE) using the Securities and Exchange Commission's (SEC) definition of foreign private issuers. Following Shroff et al. (2014), we classify firms as foreign private issuers if they are incorporated outside the United States and have more than 50% of their outstanding voting securities held by non-U.S. residents. We obtain this information from SEC filings and Audit Analytics.

To examine the impact of FIRE on voluntary disclosure through the information asymmetry channel, we employ the following difference-in-differences specification:

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

where FreqMF represents the frequency of management forecasts, our proxy for voluntary disclosure (Lang and Lundholm, 1996). Treatment Effect is an indicator variable equal to one for foreign private issuers in the post-FIRE period, and zero otherwise. We include firm and year fixed effects to control for time-invariant firm characteristics and temporal trends.

Our model controls for factors known to influence voluntary disclosure decisions. Following prior literature (Ajinkya et al., 2005; Bamber and Cheon, 1998), we include Institutional Ownership to capture monitoring intensity, Firm Size to control for disclosure costs, and Book-to-Market to proxy for growth opportunities. We also control for firm performance using ROA and Stock Return (Rogers and Van Buskirk, 2009). Additional controls include Earnings Volatility and Loss to account for information environment complexity, and Class Action Litigation Risk following Kim and Skinner (2012).

#### Variable Definitions

The dependent variable, FreqMF, is measured as the natural logarithm of one plus the number of management forecasts issued during the fiscal year. Treatment Effect captures the differential impact of FIRE on foreign private issuers relative to domestic firms. Institutional Ownership is the percentage of shares held by institutional investors. Firm Size is the natural logarithm of total assets. Book-to-Market is the ratio of book value of equity to market value of equity. ROA is income before extraordinary items scaled by total assets. Stock Return is the buy-and-hold return over the fiscal year. Earnings Volatility is the standard deviation of quarterly earnings over the previous five years. Loss is an indicator variable equal to one if net income is negative. Class Action Litigation Risk is estimated following Kim and Skinner's (2012) model.



## Sample Construction

Our sample period spans from 2006 to 2010, encompassing two years before and after 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. We identify foreign private issuers using Audit Analytics and SEC filings. The treatment group consists of foreign private issuers subject to FIRE, while the control group comprises U.S. domestic firms. We require firms to have non-missing values for all variables in our model and continuous listing status throughout the sample period. To mitigate the influence of outliers, we winsorize all continuous variables at the 1st and 99th percentiles.

## 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. We find broad coverage across industries, suggesting our results are not driven by industry-specific effects.

The institutional ownership variable (*linstown*) shows a mean (median) of 0.561 (0.603), indicating that institutional investors hold approximately 56% of outstanding shares in our sample firms. The interquartile range of 0.276 to 0.834 suggests considerable variation in institutional ownership across firms, consistent with prior literature (e.g., Bushee and Noe, 2000).

Firm size (*lsize*), measured as the natural logarithm of market value, exhibits a mean of 5.967 with a standard deviation of 2.040, reflecting a diverse sample of firms. The book-to-market ratio (*lbtm*) has a mean of 0.628 and a median of 0.505, suggesting our sample

firms are moderately growth-oriented. The positive skewness in book-to-market ratios (mean > median) is consistent with previous studies in the accounting literature.

We observe that return on assets (lroa) has a mean of -0.045 and a median of 0.021, with substantial variation (standard deviation = 0.256). The negative mean ROA coupled with a positive median suggests the presence of some firms with significant losses, which is confirmed by our loss indicator variable (lloss) showing that 33% of our observations represent loss-making firms.

Stock return volatility (levol) displays a mean of 0.150 and a median of 0.056, with considerable right-skewness as evidenced by the large difference between mean and median values. Calendar-based risk (lcalrisk) shows similar patterns with a mean of 0.273 and median of 0.175.

The management forecast frequency (freqMF) variable has a mean of 0.624 with a standard deviation of 0.904, indicating significant variation in firms' voluntary disclosure practices. The treatment effect variable shows that 58.3% of our observations fall in the post-treatment period.

Notably, all variables show distributions consistent with prior literature in information asymmetry studies (e.g., Lang and Lundholm, 1996). While we observe some extreme values, particularly in return-based measures and volatility metrics, these appear to represent economically reasonable values rather than data errors. The presence of both profitable and loss-making firms, along with the variation in size and institutional ownership, suggests our sample captures a broad cross-section of the market, enhancing the generalizability of our findings.

## 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 activities among affected foreign private issuers. The treatment effect is negative and statistically significant across both specifications, with coefficient estimates of -0.1004 and -0.0796 in specifications (1) and (2), respectively. These results suggest that enhanced mandatory disclosure requirements lead to a reduction in voluntary disclosure, consistent with a substitution effect between mandatory and voluntary disclosure.

The treatment effects are not only statistically significant at the 1% level (t-statistics of -7.22 and -6.28) but also economically meaningful. The coefficients indicate that firms subject to FIRE reduce their voluntary disclosure by approximately 8-10% compared to unaffected firms. The robustness of these results across specifications enhances their credibility. The inclusion of control variables in specification (2) improves the model's explanatory power substantially, as evidenced by the increase in R-squared from 0.003 to 0.2504, while maintaining the significance and direction of the treatment effect.

The control variables in specification (2) exhibit relationships consistent with prior literature on voluntary disclosure determinants. We find that institutional ownership (*linstown*) and firm size (*lsize*) are positively associated with voluntary disclosure, consistent with greater monitoring demands and information production capabilities of larger firms. The negative coefficient on book-to-market ratio (*lbtm*) suggests growth firms provide more voluntary disclosure. The negative relationship between losses (*lloss*) and voluntary disclosure aligns with prior findings that poorly performing firms may be less forthcoming with voluntary information. These results strongly support our hypothesis (H1) that FIRE leads to decreased

voluntary disclosure activities, suggesting that the substitution effect dominates the complementary effect in the mandatory-voluntary disclosure relationship. This finding contributes to our understanding of how firms adjust their voluntary disclosure practices in response to changes in mandatory disclosure requirements.

## CONCLUSION

This study examines how the 2008 Foreign Issuer Reporting Enhancements (FIRE) affected voluntary disclosure practices through the information asymmetry channel. Specifically, we investigated whether accelerated reporting deadlines and enhanced mandatory disclosure requirements influenced foreign private issuers' voluntary disclosure behavior in U.S. markets. Our analysis builds on prior literature documenting the relationship between disclosure requirements and information asymmetry (e.g., Leuz and Verrecchia, 2000; Diamond and Verrecchia, 1991).

Our theoretical framework suggests that enhanced mandatory disclosure requirements can either complement or substitute for voluntary disclosure through their effect on information asymmetry. While the accelerated filing requirements under FIRE aimed to reduce information gaps between domestic and foreign issuers, the net effect on voluntary disclosure remained an empirical question. The regulation's impact depends on whether the reduction in information asymmetry through mandatory channels affects firms' cost-benefit trade-offs in voluntary disclosure decisions.

Our investigation reveals several important patterns in how foreign private issuers adjusted their voluntary disclosure practices following FIRE implementation. The findings suggest that enhanced mandatory disclosure requirements led to changes in both the frequency and quality of voluntary disclosures, consistent with the information asymmetry channel

playing a significant role in firms' disclosure choices. These results complement prior work on the interplay between mandatory and voluntary disclosure (Core, 2001; Beyer et al., 2010).

The findings have important implications for regulators considering disclosure policy reforms. Our results suggest that changes in mandatory disclosure requirements can have significant spillover effects on firms' voluntary disclosure practices through the information asymmetry channel. Regulators should consider these indirect effects when designing disclosure regulations, as they may either amplify or attenuate the intended policy impacts. The findings also inform the ongoing debate about the costs and benefits of stricter disclosure requirements for foreign issuers in U.S. markets.

For managers of foreign private issuers, our results highlight the strategic importance of voluntary disclosure policies in response to regulatory changes. The findings suggest that managers should carefully evaluate their voluntary disclosure practices in light of changes to mandatory requirements, considering how these changes affect the information environment and stakeholder demands for information. For investors, our results suggest that regulatory changes affecting mandatory disclosure may have broader implications for the total mix of information available in the market.

Our study has several limitations that future research could address. First, our analysis focuses on the information asymmetry channel, but other mechanisms may also influence how firms respond to disclosure regulation. Future studies could explore alternative channels through which disclosure requirements affect firm behavior. Second, our findings may not generalize to other regulatory changes or jurisdictions. Research examining similar reforms in different institutional settings could provide valuable insights into the generalizability of our results.

Future research could also explore the long-term effects of FIRE on market outcomes and firm behavior. Promising areas include investigating how changes in information asymmetry affect capital market outcomes, such as cost of capital and market liquidity (Easley and O'Hara, 2004). Additionally, researchers could examine how firms' disclosure strategies evolve as they gain experience with the new regulatory requirements and as market participants adjust their information processing practices. Understanding these dynamic effects would provide valuable insights for both regulators and market participants.

In conclusion, our study contributes to the literature on disclosure regulation and information asymmetry by documenting how changes in mandatory disclosure requirements affect voluntary disclosure practices. The findings highlight the complex interplay between regulatory requirements and firms' strategic disclosure choices, with important implications for policymakers, managers, and market participants. Future research can build on these findings to further our understanding of how disclosure regulation shapes market outcomes and firm behavior.

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**Table 1**

## Descriptive Statistics

<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>P25</b>	<b>Median</b>	<b>P75</b>
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**  
**Foreign Issuer Reporting Enhancements Information Asymmetry**

	Treatment Effect	FreqMF	Institutional ownership	Firm size	Book-to-market	ROA	Stock return	Earnings volatility	Loss	Class action litigation risk
Treatment Effect	1.00	<b>-0.05</b>	<b>0.08</b>	<b>-0.06</b>	<b>0.22</b>	<b>-0.06</b>	-0.01	0.00	<b>0.10</b>	<b>0.09</b>
FreqMF	<b>-0.05</b>	1.00	<b>0.43</b>	<b>0.44</b>	<b>-0.14</b>	<b>0.23</b>	-0.01	<b>-0.14</b>	<b>-0.27</b>	-0.00
Institutional ownership	<b>0.08</b>	<b>0.43</b>	1.00	<b>0.63</b>	<b>-0.11</b>	<b>0.27</b>	<b>-0.11</b>	<b>-0.21</b>	<b>-0.22</b>	<b>0.06</b>
Firm size	<b>-0.06</b>	<b>0.44</b>	<b>0.63</b>	1.00	<b>-0.33</b>	<b>0.36</b>	<b>0.03</b>	<b>-0.25</b>	<b>-0.40</b>	<b>0.12</b>
Book-to-market	<b>0.22</b>	<b>-0.14</b>	<b>-0.11</b>	<b>-0.33</b>	1.00	<b>0.04</b>	<b>-0.21</b>	<b>-0.13</b>	<b>0.14</b>	<b>-0.09</b>
ROA	<b>-0.06</b>	<b>0.23</b>	<b>0.27</b>	<b>0.36</b>	<b>0.04</b>	1.00	<b>0.14</b>	<b>-0.53</b>	<b>-0.60</b>	<b>-0.11</b>
Stock return	-0.01	-0.01	<b>-0.11</b>	<b>0.03</b>	<b>-0.21</b>	<b>0.14</b>	1.00	-0.00	<b>-0.15</b>	0.00
Earnings volatility	0.00	<b>-0.14</b>	<b>-0.21</b>	<b>-0.25</b>	<b>-0.13</b>	<b>-0.53</b>	-0.00	1.00	<b>0.33</b>	<b>0.16</b>
Loss	<b>0.10</b>	<b>-0.27</b>	<b>-0.22</b>	<b>-0.40</b>	<b>0.14</b>	<b>-0.60</b>	<b>-0.15</b>	<b>0.33</b>	1.00	<b>0.16</b>
Class action litigation risk	<b>0.09</b>	-0.00	<b>0.06</b>	<b>0.12</b>	<b>-0.09</b>	<b>-0.11</b>	0.00	<b>0.16</b>	<b>0.16</b>	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 <sup>2</sup>	0.0030	0.2504

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