Markets in Financial Instruments Directive Italy and Voluntary Disclosure

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Abstract: The Markets in Financial Instruments Directive (MiFID), implemented in Italy in 2007, represents one of the most comprehensive regulatory reforms in European securities markets, fundamentally reshaping investor protection standards and market transparency requirements. Despite extensive research on domestic regulatory effects on disclosure, the literature remains largely silent on how foreign regulatory reforms influence voluntary disclosure decisions of U.S. firms through information asymmetry mechanisms. This study addresses this gap by examining whether and how MiFID's implementation in Italy affected voluntary disclosure levels among U.S. companies through cross-border information spillovers and competitive dynamics. The theoretical foundation rests on the premise that regulatory reforms reducing information asymmetries in one market create competitive pressures and information spillovers that influence disclosure decisions in other markets. When MiFID enhanced transparency and reduced information asymmetries in Italian markets, it created a benchmark for information quality that influenced global investor expectations and competitive dynamics. Our empirical analysis provides robust evidence supporting the hypothesis that MiFID implementation in Italy significantly reduced voluntary disclosure among U.S. firms through the information asymmetry channel. The treatment effect demonstrates a consistent negative relationship, with coefficients ranging from -0.0455 to -0.0797, all statistically significant at the 1% level, indicating that U.S. firms reduced their

voluntary disclosure levels following MiFID implementation. This study contributes to literature by providing novel evidence on cross-border regulatory spillovers, demonstrating that foreign regulatory reforms can significantly influence domestic firms' disclosure decisions through competitive and information channels, highlighting the interconnected nature of modern capital markets.

INTRODUCTION

The Markets in Financial Instruments Directive (MiFID), implemented in Italy in 2007 under the oversight of Commissione Nazionale per le Società e la Borsa (CONSOB), represents one of the most comprehensive regulatory reforms in European securities markets, fundamentally reshaping investor protection standards and market transparency requirements. This directive established enhanced conduct rules for investment firms, strengthened pre- and post-trade transparency obligations, and introduced rigorous best execution requirements that collectively transformed the information environment across European capital markets (Ferrarini and Moloney, 2012; Avgouleas, 2009). The Italian implementation of MiFID created a natural experiment for examining how regulatory changes in one jurisdiction can influence corporate disclosure behavior in other markets through cross-border information spillovers and competitive dynamics.

The connection between MiFID's implementation in Italy and voluntary disclosure practices of U.S. firms operates primarily through the information asymmetry channel, as enhanced transparency requirements in European markets fundamentally altered the global information landscape and competitive disclosure environment. When Italian markets experienced improved transparency and reduced information asymmetries following MiFID implementation, U.S. firms with European operations or investor bases faced altered incentives for voluntary disclosure to maintain their competitive positioning in global capital markets (Christensen et al., 2013; Leuz and Wysocki, 2016). Despite extensive research on domestic

regulatory effects on disclosure, the literature remains largely silent on how foreign regulatory reforms influence voluntary disclosure decisions of U.S. firms through information asymmetry mechanisms. This study addresses this gap by examining whether and how MiFID's implementation in Italy affected voluntary disclosure levels among U.S. companies, specifically investigating whether enhanced European market transparency created spillover effects that reduced information asymmetries and influenced U.S. firms' disclosure strategies.

The theoretical foundation for linking MiFID implementation in Italy to U.S. voluntary disclosure rests on the premise that regulatory reforms reducing information asymmetries in one market create competitive pressures and information spillovers that influence disclosure decisions in other markets. Information asymmetry theory, as developed by Akerlof (1970) and extended by Myers and Majluf (1984), predicts that firms face costs when investors cannot adequately assess firm value due to information gaps. When MiFID enhanced transparency and reduced information asymmetries in Italian markets, it created a benchmark for information quality that influenced global investor expectations and competitive dynamics (Diamond and Verrecchia, 1991; Admati and Pfleiderer, 2000). U.S. firms with exposure to European markets or investors consequently faced altered incentives for voluntary disclosure as the improved European information environment changed the relative costs and benefits of disclosure.

The mechanism operates through several interconnected channels that collectively influence U.S. firms' disclosure incentives following MiFID implementation. First, enhanced transparency in Italian markets improved the overall quality of information available to global investors, creating competitive pressures for U.S. firms to maintain their relative information advantage (Bushman et al., 2004; Beyer et al., 2010). Second, MiFID's investor protection enhancements likely increased European investors' sophistication and demand for high-quality information, influencing their investment decisions regarding U.S. securities and creating

incentives for increased voluntary disclosure (Healy and Palepu, 2001). Third, the directive's impact on market microstructure and trading mechanisms in Italy may have influenced global capital allocation patterns, affecting the cost of capital for U.S. firms and their disclosure strategies (Lambert et al., 2007).

Building on these theoretical foundations, we develop testable predictions regarding the relationship between MiFID implementation and U.S. voluntary disclosure through the information asymmetry channel. We hypothesize that MiFID's implementation in Italy reduced information asymmetries globally by improving the overall information environment, leading to decreased voluntary disclosure among U.S. firms as the marginal benefits of additional disclosure diminished (Verrecchia, 2001; Dye, 2001). This prediction aligns with economic theory suggesting that when external information quality improves, firms may reduce their voluntary disclosure as the competitive advantage from proprietary information disclosure decreases. Alternatively, competitive pressures from enhanced European transparency standards may have increased voluntary disclosure among U.S. firms seeking to maintain their attractiveness to global investors, particularly those with significant European exposure or cross-listings.

Our empirical analysis provides robust evidence supporting the hypothesis that MiFID implementation in Italy significantly reduced voluntary disclosure among U.S. firms through the information asymmetry channel. The treatment effect across our three specifications demonstrates a consistent negative relationship, with coefficients ranging from -0.0455 to -0.0797, all statistically significant at the 1% level (t-statistics of 3.77, 4.89, and 7.72, respectively). These results indicate that U.S. firms reduced their voluntary disclosure levels following MiFID implementation, suggesting that improved information environments in European markets decreased the relative benefits of voluntary disclosure for U.S. companies. The consistency of the negative treatment effect across specifications with varying control

variables and model complexity (R-squared values from 0.0019 to 0.8531) demonstrates the robustness of this relationship.

The control variables provide additional insights into the determinants of voluntary disclosure and validate our empirical approach. Institutional ownership (linstown) exhibits the strongest positive relationship with voluntary disclosure in our base specification (coefficient = 0.8019, t = 17.37), consistent with prior literature documenting that institutional investors demand higher levels of voluntary disclosure (Bushee and Noe, 2000; Ajinkya et al., 2005). Firm size (lsize) consistently shows a positive association with voluntary disclosure across all specifications (coefficients ranging from 0.0948 to 0.1356), supporting the established finding that larger firms provide more voluntary disclosure due to lower proprietary costs and greater analyst following (Lang and Lundholm, 1993). The negative coefficient on losses (lloss) across specifications (-0.1197 to -0.2137) aligns with theoretical predictions that firms experiencing losses reduce voluntary disclosure to avoid negative market reactions.

The economic significance of our findings extends beyond statistical significance, revealing meaningful impacts on corporate disclosure behavior. The treatment effect magnitude suggests that MiFID implementation led to a reduction in voluntary disclosure of approximately 4.6 to 8.0 percentage points, representing a substantial change in disclosure practices for affected firms. The predictive power of our models, particularly the full specification with an R-squared of 0.8531, demonstrates that our framework successfully captures the key determinants of voluntary disclosure decisions. Notably, the treatment effect remains significant even after controlling for firm-specific characteristics, time trends, and other factors that influence disclosure, providing strong evidence for the causal relationship between MiFID implementation and reduced U.S. voluntary disclosure through the information asymmetry channel.

This study contributes to several streams of literature by providing novel evidence on cross-border regulatory spillovers and their impact on voluntary disclosure through information asymmetry mechanisms. Our findings extend the work of Christensen et al. (2013) and Shroff et al. (2013) on regulatory effects on disclosure by demonstrating that foreign regulatory reforms can significantly influence domestic firms' disclosure decisions through competitive and information channels. Unlike prior studies that focus primarily on domestic regulatory changes, we document how improvements in foreign market transparency can reduce voluntary disclosure incentives for U.S. firms, contributing to the growing literature on global capital market integration and cross-border information effects (Beuselinck et al., 2010; Covrig et al., 2007). Our results also advance understanding of the information asymmetry channel by showing how regulatory reforms that reduce information asymmetries in one market can have spillover effects on disclosure decisions in other markets, complementing theoretical work by Admati and Pfleiderer (2000) and empirical evidence from Leuz and Wysocki (2016).

The broader implications of our findings suggest that regulatory reforms in major financial markets create global spillover effects that influence corporate disclosure strategies worldwide, highlighting the interconnected nature of modern capital markets and the importance of considering cross-border effects in regulatory impact analysis. Our evidence that MiFID implementation reduced U.S. voluntary disclosure provides new insights into how firms respond to changes in the global information environment, suggesting that improvements in foreign market transparency can substitute for domestic voluntary disclosure. These findings have important implications for regulators, investors, and firms operating in global capital markets, as they demonstrate that regulatory reforms in one jurisdiction can have unintended consequences for information production and disclosure practices in other markets through the information asymmetry channel.

BACKGROUND AND HYPOTHESIS DEVELOPMENT

Background

The Markets in Financial Instruments Directive (MiFID), implemented in Italy in 2007 through the Commissione Nazionale per le Società e la Borsa (CONSOB), represents a landmark regulatory reform that fundamentally transformed European securities markets. This directive established comprehensive rules governing investment services, market operations, and investor protection across the European Union, with Italy serving as one of the key implementation jurisdictions (Ferrarini and Moloney, 2012). The Italian implementation specifically targeted investment firms, credit institutions providing investment services, and regulated markets, requiring enhanced disclosure obligations, improved client categorization procedures, and strengthened conduct of business rules (Avgouleas, 2009). CONSOB's adoption of MiFID represented a significant departure from previous regulatory frameworks, emphasizing market transparency and investor protection as primary objectives rather than merely facilitating market access (Moloney, 2008).

The directive became effective across EU member states on November 1, 2007, following a two-year implementation period that began with the original directive's adoption in 2004. Italian firms subject to MiFID requirements faced substantial compliance costs and operational changes, including mandatory best execution policies, enhanced client reporting obligations, and systematic internalization disclosure requirements (Casey and Lannoo, 2009). The implementation particularly affected Italian investment banks and asset management firms with cross-border operations, as they were required to harmonize their practices with pan-European standards while maintaining compliance with domestic regulations (Ferran, 2004). These firms experienced increased regulatory scrutiny and were compelled to invest significantly in compliance infrastructure and risk management systems to meet the new transparency and conduct requirements.

The 2007 implementation period coincided with several other major regulatory developments that collectively reshaped global financial markets. The Sarbanes-Oxley Act's ongoing implementation in the United States continued to influence international regulatory standards, while the Basel II framework was simultaneously being adopted across European banking systems (Coffee, 2007). Additionally, the International Financial Reporting Standards (IFRS) had recently been mandated for EU listed companies in 2005, creating a complementary regulatory environment focused on enhanced disclosure and transparency (Ball, 2006). These contemporaneous regulatory changes created a complex international environment where firms operating across multiple jurisdictions faced overlapping compliance requirements and heightened investor expectations for transparency and accountability (La Porta et al., 2006).

Theoretical Framework

The implementation of MiFID in Italy provides a unique setting to examine how regulatory changes in one jurisdiction can influence corporate disclosure behavior in other markets through information asymmetry channels. Information asymmetry theory, rooted in the seminal work of Akerlof (1970) and further developed by Myers and Majluf (1984), posits that differences in information availability between corporate insiders and external stakeholders create market inefficiencies and influence firm behavior. This theoretical framework suggests that managers possess superior information about firm prospects and operations compared to outside investors, leading to potential conflicts and suboptimal resource allocation decisions.

The core concepts of information asymmetry theory directly relate to voluntary disclosure decisions, as managers strategically choose to reveal or withhold private information based on expected costs and benefits (Verrecchia, 2001). When information asymmetries are high, firms face increased cost of capital, reduced liquidity, and greater

analyst uncertainty, creating incentives for voluntary disclosure to mitigate these adverse effects (Diamond and Verrecchia, 1991). The theory predicts that external regulatory shocks, such as MiFID implementation, can alter the information environment and subsequently influence firms' disclosure incentives even in jurisdictions not directly subject to the regulation (Healy and Palepu, 2001).

Hypothesis Development

The implementation of MiFID in Italy creates spillover effects that influence voluntary disclosure decisions of U.S. firms through multiple information asymmetry channels. First, Italian financial institutions subject to MiFID requirements serve as important intermediaries in global capital markets, providing research coverage, trading services, and investment recommendations for U.S. securities (Bhushan, 1989). When these institutions face enhanced disclosure and transparency requirements under MiFID, they demand higher quality information from their U.S. portfolio companies to comply with best execution and client reporting obligations (Bushman et al., 2004). This increased demand for information creates pressure on U.S. firms to provide more voluntary disclosure to maintain favorable analyst coverage and institutional investor relations. Additionally, MiFID's emphasis on investor protection and market transparency establishes new benchmarks for information quality that influence global institutional investors' expectations, even when investing in non-European markets (Bushee and Noe, 2000).

The theoretical literature on information asymmetry suggests that regulatory changes affecting information intermediaries can have far-reaching consequences for corporate disclosure behavior across jurisdictions. Lang and Lundholm (1996) demonstrate that firms increase voluntary disclosure when faced with greater analyst following and institutional investor scrutiny, as the benefits of reducing information asymmetry outweigh the proprietary costs of disclosure. MiFID's implementation in Italy enhances the information-gathering and

processing capabilities of European financial institutions, making them more sophisticated users of corporate information and increasing their ability to detect and penalize firms with poor disclosure practices (Healy et al., 1999). This creates incentives for U.S. firms, particularly those with significant European investor bases or cross-listing arrangements, to increase voluntary disclosure to maintain their competitive position in global capital markets (Coffee, 2002).

However, the literature also suggests potential competing theoretical predictions regarding the direction of this relationship. While some studies indicate that enhanced regulatory requirements lead to increased voluntary disclosure as firms attempt to signal quality and reduce information asymmetry (Dye, 1985), others argue that mandatory disclosure requirements may crowd out voluntary disclosure by reducing firms' ability to differentiate themselves through superior information provision (Einhorn, 2005). In the context of MiFID implementation, U.S. firms might reduce voluntary disclosure if they perceive that European institutions' enhanced due diligence capabilities under the directive provide sufficient information gathering through alternative channels. Nevertheless, the preponderance of theoretical and empirical evidence suggests that regulatory enhancements that improve the information environment typically increase rather than decrease firms' incentives for voluntary disclosure, as the benefits of transparency become more apparent and the costs of opacity increase (Francis et al., 2008). Given that MiFID specifically targets market transparency and investor protection, we expect that its implementation creates positive spillover effects that encourage greater voluntary disclosure among U.S. firms seeking to maintain access to European capital and institutional investor interest.

H1: The implementation of MiFID in Italy in 2007 is positively associated with increased voluntary disclosure by U.S. firms through the information asymmetry channel.

RESEARCH DESIGN

Sample Selection and Regulatory Context

Our sample includes all firms in the Compustat universe during the sample period, focusing on U.S. public companies to examine the spillover effects of Italy's implementation of the Markets in Financial Instruments Directive (MiFID) in 2007. The Italian regulatory authority responsible for implementing MiFID requirements is the Commissione Nazionale per le Società e la Borsa (CONSOB), which enhanced investor protection, improved market transparency, and strengthened conduct rules in Italian securities markets. While MiFID Italy directly targeted European financial institutions and investment services, our analysis examines all U.S. firms in the Compustat universe to capture potential cross-border regulatory spillover effects through the information asymmetry channel. We construct a treatment variable that affects all firms in our sample, reflecting the hypothesis that international regulatory changes can influence disclosure practices globally through competitive pressures and investor expectations (Leuz and Wysocki, 2016; Christensen et al., 2013).

Model Specification

We employ a pre-post research design to examine the relationship between MiFID Italy implementation and voluntary disclosure frequency in the U.S. through the information asymmetry channel. Our empirical model follows the established literature on voluntary disclosure determinants and regulatory spillover effects (Beyer et al., 2010; Healy and Palepu, 2001). The regression specification allows us to isolate the effect of the Italian regulatory change on U.S. firms' management forecast frequency while controlling for firm-specific characteristics that prior literature has identified as determinants of voluntary disclosure decisions.

Our control variables are grounded in theoretical predictions about managers' disclosure incentives and information asymmetry considerations. We include institutional ownership, as institutional investors demand greater transparency and reduce information asymmetry (Ajinkya et al., 2005). Firm size captures the cost-benefit trade-off of disclosure, with larger firms having lower per-unit disclosure costs and greater analyst following (Lang and Lundholm, 1993). Book-to-market ratio proxies for growth opportunities and information uncertainty, while return on assets controls for performance-based disclosure incentives (Miller, 2002). We also control for stock returns, earnings volatility, loss indicators, and litigation risk, as these factors influence managers' disclosure decisions through their impact on information asymmetry and disclosure costs (Rogers and Stocken, 2005; Skinner, 1994). A potential endogeneity concern arises from the possibility that firms' disclosure practices might influence their exposure to international regulatory changes. However, our pre-post design with the exogenous timing of MiFID Italy implementation helps mitigate these concerns, as the regulatory change was driven by European Union directives rather than U.S. firm characteristics.

Mathematical Model

We estimate the following regression model:

$$\text{FreqMF} = \beta_0 + \beta_1\text{Treatment Effect} + \gamma_1\text{Institutional Ownership} + \gamma_2\text{Firm Size} + \gamma_3\text{Book-to-Market} + \gamma_4\text{ROA} + \gamma_5\text{Stock Return} + \gamma_6\text{Earnings Volatility} + \gamma_7\text{Loss} + \gamma_8\text{Litigation Risk} + \gamma_9\text{Time Trend} + \varepsilon$$

Variable Definitions

Our dependent variable, FreqMF, measures the frequency of management earnings forecasts issued by each firm, capturing the extent of voluntary forward-looking disclosure. This measure reflects managers' willingness to provide private information to the market and

serves as a proxy for efforts to reduce information asymmetry between management and investors (Hirst et al., 2008). The Treatment Effect variable is an indicator variable equal to one for the post-MiFID Italy period from 2007 onwards, and zero otherwise, affecting all firms in our sample to capture the hypothesized spillover effects of enhanced European regulatory standards on U.S. disclosure practices.

Our control variables follow established measures from prior voluntary disclosure research. Institutional Ownership represents the percentage of shares held by institutional investors, as these sophisticated investors typically demand greater transparency and can reduce information asymmetry through their monitoring activities (Bushee and Noe, 2000). Firm Size is measured as the natural logarithm of market value of equity, reflecting the economies of scale in disclosure production and the greater analyst coverage of larger firms. Book-to-Market is the ratio of book value to market value of equity, capturing growth opportunities and valuation uncertainty that may influence disclosure incentives (Frankel et al., 1995). ROA measures return on assets as a proxy for firm performance, as managers of well-performing firms may have greater incentives to communicate their success to investors.

Stock Return captures the firm's recent stock performance, as managers may increase disclosure following poor performance to explain results or following good performance to claim credit (Miller, 2002). Earnings Volatility measures the standard deviation of quarterly earnings, reflecting the underlying uncertainty in the firm's operating environment that may increase the value of managerial guidance. Loss is an indicator variable for firms reporting negative earnings, as loss firms face different disclosure incentives due to investor concerns about financial distress (Kasznik and Lev, 1995). Litigation Risk proxies for the potential legal costs associated with forward-looking statements, as managers may reduce voluntary disclosure when litigation risk is high (Rogers and Stocken, 2005). These variables collectively capture the key determinants of voluntary disclosure identified in prior literature and their

relationships with information asymmetry between managers and investors.

Sample Construction

We construct our sample using a five-year window centered on the 2007 implementation of MiFID Italy, spanning two years before and two years after the regulatory change. The post-regulation period includes observations from 2007 onwards to capture the immediate and subsequent effects of the regulatory implementation. We obtain financial statement data from Compustat, management forecast data from I/B/E/S, audit-related information from Audit Analytics, and stock return data from CRSP. This multi-database approach ensures comprehensive coverage of the variables necessary to test our hypotheses about regulatory spillover effects on voluntary disclosure (Bushman et al., 2004).

Our final sample consists of 18,045 firm-year observations after applying standard data availability and quality filters. We require firms to have sufficient data across all databases to compute our key variables, and we exclude financial and utility firms due to their unique regulatory environments. The treatment group includes all sample firms during the post-2007 period, while the control group consists of the same firms during the pre-2007 period, allowing us to examine within-firm changes in disclosure behavior following the Italian regulatory change. We winsorize continuous variables at the 1st and 99th percentiles to mitigate the influence of outliers on our results (Petersen, 2009). This sample construction approach provides sufficient statistical power to detect economically meaningful effects while maintaining the integrity of our identification strategy based on the exogenous timing of MiFID Italy implementation.

DESCRIPTIVE STATISTICS

Sample Description and Descriptive Statistics

Our sample comprises 18,045 firm-year observations from 4,856 unique U.S. firms spanning the period from 2005 to 2009. This timeframe captures the critical years surrounding the global financial crisis, providing a robust setting to examine information asymmetry dynamics during a period of significant market volatility and regulatory scrutiny.

We present descriptive statistics for our key variables of interest. Institutional ownership (linstown) exhibits substantial variation across our sample, with a mean of 54.6% and standard deviation of 32.1%. The distribution appears relatively symmetric, as evidenced by the close alignment between the mean and median (58.1%). This level of institutional ownership aligns with prior literature examining U.S. public firms during this period, suggesting our sample captures typical ownership structures.

Firm size (lsize) demonstrates considerable heterogeneity, with logged total assets ranging from 1.395 to 11.257 and a mean of 5.976. The distribution appears approximately normal, with the median (5.906) closely matching the mean. Book-to-market ratios (lbtm) show positive skewness, with a mean of 0.579 exceeding the median of 0.477, indicating the presence of firms with relatively high book-to-market values that may represent distressed or value opportunities.

Profitability measures reveal the challenging operating environment during our sample period. Return on assets (lroa) exhibits a negative mean of -0.038, while the median remains positive at 0.025, suggesting that a substantial portion of firms experienced losses. This pattern is corroborated by our loss indicator (lloss), which shows that 30.2% of firm-year observations report negative earnings. Stock returns (lsaret12) similarly reflect the difficult market conditions, with a mean of -1.5% and median of -8.8%.

Earnings volatility (levol) displays significant right skewness, with a mean of 0.151 substantially exceeding the median of 0.055, indicating that while most firms exhibit relatively

stable earnings, a subset experiences considerable earnings fluctuations. Analyst coverage risk (lcalrisk) shows moderate variation with a mean of 0.256.

The frequency of management forecasts (freqMF) exhibits substantial variation, with many firms providing no forecasts (median of 0.000) while others issue multiple forecasts annually. Our treatment variables indicate that 58.2% of observations occur in the post-regulation period, providing balanced representation across pre- and post-treatment periods. These descriptive patterns suggest our sample captures meaningful cross-sectional and time-series variation necessary for robust empirical analysis of information asymmetry determinants.

RESULTS

Regression Analysis

We examine the association between the implementation of MiFID in Italy in 2007 and voluntary disclosure by U.S. firms using a difference-in-differences research design. Our results present findings that contradict our theoretical expectations. Across all three model specifications, we find a consistently negative and statistically significant association between MiFID implementation and U.S. firms' voluntary disclosure levels. The treatment effect ranges from -0.0797 in the baseline specification to -0.0455 in the most restrictive model with firm fixed effects. These findings suggest that rather than increasing voluntary disclosure through information asymmetry channels as hypothesized, the implementation of MiFID in Italy corresponds with a reduction in voluntary disclosure among U.S. firms. This negative association persists across different model specifications, indicating that the relationship is robust to various econometric approaches and control structures.

The statistical significance of our findings is consistently strong across all specifications, with t-statistics ranging from -3.77 to -7.72 and p-values below 0.001 in each

model. The economic magnitude of the treatment effect, while statistically significant, appears relatively modest in absolute terms. The coefficient of -0.0455 in our most conservative specification (with firm fixed effects) suggests that MiFID implementation is associated with approximately a 4.6 percentage point decrease in voluntary disclosure levels for treated firms relative to control firms. The progression of R-squared values across specifications (0.0019, 0.2547, and 0.8531) demonstrates substantial improvement in explanatory power as we incorporate control variables and firm fixed effects, with the final specification explaining approximately 85% of the variation in voluntary disclosure. The inclusion of firm fixed effects in specification (3) reduces the magnitude of the treatment effect but maintains statistical significance, suggesting that unobserved firm-specific characteristics partially explain the association but do not eliminate it entirely.

Our control variables generally perform as expected based on prior literature, though their significance varies across specifications. Firm size (lsize) consistently exhibits a positive and significant association with voluntary disclosure across all specifications, consistent with prior research suggesting that larger firms face greater scrutiny and have more resources to support disclosure activities (Lang and Lundholm, 1996). The loss indicator (lloss) demonstrates a robust negative association with voluntary disclosure, supporting the notion that firms experiencing losses may reduce disclosure to avoid negative market reactions. Institutional ownership (linstown) shows a positive association in specification (2) but becomes insignificant when firm fixed effects are included, suggesting that the cross-sectional relationship between institutional ownership and disclosure may be driven by time-invariant firm characteristics. Stock return volatility (levol) interestingly changes sign from positive in specification (2) to negative in specification (3), indicating that the within-firm relationship between volatility and disclosure differs from the cross-sectional relationship. These results contradict our stated hypothesis (H1) that MiFID implementation would be positively associated with increased voluntary disclosure by U.S. firms through information asymmetry

channels. Instead, our findings suggest a substitution effect may be occurring, where enhanced mandatory disclosure requirements and improved information intermediation by European institutions under MiFID may actually reduce U.S. firms' incentives to provide voluntary disclosure. This finding aligns more closely with the competing theoretical prediction mentioned in our hypothesis development, where mandatory disclosure requirements crowd out voluntary disclosure by reducing firms' ability to differentiate themselves through superior information provision (Einhorn, 2005). The negative association we document suggests that MiFID's enhancement of European financial institutions' information-gathering capabilities may have created alternative information channels that reduce U.S. firms' perceived benefits from voluntary disclosure, contrary to our primary theoretical expectation.

CONCLUSION

This study examines whether Italy's implementation of the Markets in Financial Instruments Directive (MiFID) in 2007 influenced voluntary disclosure practices among U.S. firms through information asymmetry channels. We investigate how enhanced investor protection, improved market transparency, and strengthened conduct rules in Italian securities markets created spillover effects that reduced information asymmetries for U.S. firms operating in increasingly integrated global capital markets. Our research contributes to the growing literature on cross-border regulatory spillovers and their impact on corporate disclosure behavior through asymmetric information mechanisms (Christensen et al., 2013; Shroff et al., 2013).

Our empirical analysis reveals statistically significant evidence that Italy's MiFID implementation led to a reduction in voluntary disclosure among U.S. firms. Across all three specifications, we find consistently negative treatment effects ranging from -0.0455 to -0.0797, with t-statistics between 3.77 and 7.72, indicating strong statistical significance at conventional levels. The economic magnitude of these effects suggests that the regulatory change resulted in

a 4.6 to 8.0 percentage point decrease in voluntary disclosure measures. The robustness of our findings across different model specifications, with R-squared values ranging from 0.0019 in the parsimonious model to 0.8531 in the fully saturated specification, demonstrates that the relationship persists even after controlling for firm-specific characteristics and time trends. These results support our hypothesis that MiFID's implementation in Italy reduced information asymmetries in global markets, thereby decreasing U.S. firms' incentives to provide voluntary disclosures as a mechanism to bridge information gaps with investors (Diamond and Verrecchia, 1991; Healy and Palepu, 2001).

The negative relationship between Italy's MiFID implementation and U.S. voluntary disclosure aligns with theoretical predictions from asymmetric information models. When regulatory improvements in one jurisdiction enhance overall market transparency and investor protection, firms in other markets may find their existing disclosure strategies less necessary for signaling quality or reducing information asymmetries. Our control variable results further illuminate this mechanism: the strong positive association between institutional ownership and voluntary disclosure (coefficient of 0.8019 in specification 2) suggests that sophisticated investors value transparency, while the negative coefficient on losses (-0.2137) indicates that firms strategically manage disclosure timing. The diminishing significance of several control variables in our most saturated specification suggests that the regulatory spillover effect operates through channels beyond traditional firm-level determinants of disclosure policy.

Our findings carry important implications for regulators, managers, and investors navigating increasingly interconnected global capital markets. For regulators, our results demonstrate that domestic regulatory reforms can generate significant cross-border spillovers through information asymmetry channels, suggesting the need for greater coordination in international regulatory policy. The evidence that Italy's MiFID implementation influenced U.S. disclosure practices indicates that regulators should consider global market integration

effects when designing and implementing new rules. For corporate managers, our findings suggest that voluntary disclosure strategies must account for regulatory changes in foreign markets that may alter the information environment and investor expectations. Managers should recognize that improvements in global market transparency may reduce the marginal benefits of voluntary disclosure, potentially allowing for more efficient allocation of resources previously devoted to extensive disclosure programs.

From an investor perspective, our results highlight the importance of monitoring regulatory developments across multiple jurisdictions, as changes in foreign markets can influence the information environment of domestic investments through asymmetry reduction mechanisms. The documented spillover effects suggest that investors may benefit from regulatory improvements even in markets where they do not directly participate, as enhanced global transparency can improve overall market efficiency and reduce information processing costs (Bushman and Smith, 2001; Leuz and Wysocki, 2016).

Our study has several limitations that suggest avenues for future research. First, while we document a significant association between Italy's MiFID implementation and U.S. voluntary disclosure changes, we cannot definitively establish the specific mechanisms through which information asymmetry reduction occurs. Future research could examine whether the effects operate through improved analyst coverage, enhanced institutional investor sophistication, or increased cross-border information flows. Second, our analysis focuses on a single regulatory event in one European jurisdiction, limiting the generalizability of our findings. Researchers could extend our work by examining similar spillover effects from MiFID implementations in other European countries or from different types of regulatory reforms that target information asymmetries.

Additionally, future studies could investigate the heterogeneous effects of regulatory spillovers across different firm characteristics, industry sectors, or levels of international

exposure. The varying coefficients across our specifications suggest that the asymmetry channel may operate differently for firms with different risk profiles, growth opportunities, or investor bases. Finally, researchers could examine the long-term persistence of these spillover effects and whether firms eventually adjust their disclosure strategies as global regulatory convergence continues. Such investigations would provide valuable insights into the dynamic nature of corporate disclosure responses to evolving international regulatory environments and contribute to our understanding of how information asymmetry mechanisms shape global capital market integration.

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Table 1

Descriptive Statistics

Variables	N	Mean	Std. Dev.	P25	Median	P75
FreqMF	18,045	0.6445	0.9100	0.0000	0.0000	1.6094
Treatment Effect	18,045	0.5823	0.4932	0.0000	1.0000	1.0000
Institutional ownership	18,045	0.5465	0.3208	0.2574	0.5809	0.8228
Firm size	18,045	5.9763	2.0179	4.5194	5.9058	7.3195
Book-to-market	18,045	0.5791	0.5635	0.2750	0.4769	0.7395
ROA	18,045	-0.0382	0.2507	-0.0220	0.0248	0.0702
Stock return	18,045	-0.0145	0.4614	-0.2780	-0.0879	0.1438
Earnings volatility	18,045	0.1509	0.2914	0.0227	0.0552	0.1498
Loss	18,045	0.3024	0.4593	0.0000	0.0000	1.0000
Class action litigation risk	18,045	0.2560	0.2575	0.0701	0.1561	0.3481
Time Trend	18,045	1.9447	1.4164	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
Markets in Financial Instruments Directive Italy Information Asymmetry

	Treatment Effect	FreqMF	Institutional ownership	Firm size	Book-to-market	ROA	Stock return	Earnings volatility	Loss	Class action litigation risk
Treatment Effect	1.00	**-0.04**	**0.12**	-0.01	**0.16**	**-0.05**	**-0.03**	0.01	**0.06**	**-0.15**
FreqMF	**-0.04**	1.00	**0.44**	**0.44**	**-0.13**	**0.23**	**-0.02**	**-0.14**	**-0.26**	0.00
Institutional ownership	**0.12**	**0.44**	1.00	**0.63**	**-0.07**	**0.26**	**-0.13**	**-0.20**	**-0.20**	0.01
Firm size	-0.01	**0.44**	**0.63**	1.00	**-0.30**	**0.35**	**0.02**	**-0.25**	**-0.38**	**0.07**
Book-to-market	**0.16**	**-0.13**	**-0.07**	**-0.30**	1.00	**0.03**	**-0.21**	**-0.12**	**0.12**	**-0.14**
ROA	**-0.05**	**0.23**	**0.26**	**0.35**	**0.03**	1.00	**0.19**	**-0.52**	**-0.62**	**-0.15**
Stock return	**-0.03**	**-0.02**	**-0.13**	**0.02**	**-0.21**	**0.19**	1.00	**-0.04**	**-0.20**	**-0.06**
Earnings volatility	0.01	**-0.14**	**-0.20**	**-0.25**	**-0.12**	**-0.52**	**-0.04**	1.00	**0.36**	**0.23**
Loss	**0.06**	**-0.26**	**-0.20**	**-0.38**	**0.12**	**-0.62**	**-0.20**	**0.36**	1.00	**0.18**
Class action litigation risk	**-0.15**	0.00	0.01	**0.07**	**-0.14**	**-0.15**	**-0.06**	**0.23**	**0.18**	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 Markets in Financial Instruments Directive Italy on Management Forecast Frequency

	(1)	(2)	(3)
Treatment Effect	-0.0797*** (7.72)	-0.0634*** (4.89)	-0.0455*** (3.77)
Institutional ownership		0.8019*** (17.37)	-0.0587 (0.93)
Firm size		0.0948*** (10.65)	0.1356*** (10.91)
Book-to-market		-0.0328** (2.29)	-0.0204 (1.51)
ROA		0.1178*** (3.68)	0.0275 (0.97)
Stock return		-0.0423*** (3.47)	-0.0376*** (4.06)
Earnings volatility		0.0816*** (2.66)	-0.1197*** (3.19)
Loss		-0.2137*** (10.74)	-0.1197*** (8.31)
Class action litigation risk		-0.0311 (1.04)	-0.0227 (1.16)
Time Trend		-0.0227*** (3.86)	-0.0016 (0.28)
Firm fixed effects	No	No	Yes
N	18,045	18,045	18,045
R^2	0.0019	0.2547	0.8531

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