

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 a significant regulatory reform that fundamentally reshaped investor protection standards and market transparency requirements across European financial markets. While extensive research examines domestic regulatory effects on disclosure practices, limited evidence exists on how foreign regulatory reforms influence voluntary disclosure in other jurisdictions through proprietary cost considerations, creating a significant gap in understanding cross-border regulatory spillovers. Building on proprietary costs theory, this study hypothesizes that MiFID implementation creates competitive pressures that influence U.S. firms' voluntary disclosure decisions through altered proprietary cost calculations, as regulatory asymmetries generate strategic disclosure dilemmas for firms operating in globally integrated markets. The empirical analysis employs three specifications with comprehensive controls to examine the treatment effects of MiFID implementation on U.S. corporate voluntary disclosure. Results provide robust evidence of significant negative treatment effects ranging from -0.0455 to -0.0797 across specifications, all statistically significant at the 1% level, indicating that MiFID implementation led to decreased voluntary disclosure by U.S. firms. The most conservative specification shows a treatment effect of -0.0455, suggesting MiFID resulted in approximately 4.6 percentage points lower voluntary disclosure among affected U.S. firms. These findings demonstrate that foreign regulatory changes influence

domestic disclosure decisions through proprietary cost channels, suggesting regulatory uncertainty and competitive repositioning initially reduce disclosure incentives contrary to initial hypotheses but consistent with alternative proprietary costs interpretations.

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 significant regulatory reforms in European financial markets, fundamentally reshaping investor protection standards, market transparency requirements, and conduct rules across securities markets (Ferrarini and Moloney, 2012; Avgouleas, 2009). This comprehensive regulatory framework has generated substantial cross-border spillover effects, particularly influencing corporate disclosure practices in interconnected global markets through various economic channels. The proprietary costs channel emerges as a particularly compelling mechanism through which European regulatory reforms can influence U.S. corporate voluntary disclosure decisions, as firms reassess the competitive implications of information sharing in response to changing global transparency standards (Verrecchia, 2001; Dye, 1985). While extensive research examines domestic regulatory effects on disclosure practices, the literature provides limited evidence on how foreign regulatory reforms influence voluntary disclosure in other jurisdictions through proprietary cost considerations, creating a significant gap in our understanding of cross-border regulatory spillovers and their impact on corporate transparency decisions.

Building on the foundational proprietary costs theory developed by Verrecchia (1983) and extended by Dye (1985), we hypothesize that MiFID implementation in Italy creates competitive pressures that influence U.S. firms' voluntary disclosure decisions through altered proprietary cost calculations. The proprietary costs framework suggests that firms withhold information when disclosure would impose competitive disadvantages, such as revealing

strategic plans to rivals or sensitive operational details that could be exploited by competitors (Healy and Palepu, 2001). MiFID's enhanced transparency requirements and strengthened conduct rules fundamentally alter the information environment in European markets, potentially creating asymmetric disclosure obligations between U.S. and European firms operating in similar business segments. This regulatory asymmetry generates a strategic disclosure dilemma for U.S. firms: increased voluntary disclosure may help maintain competitive parity with European counterparts subject to MiFID requirements, but it simultaneously exposes proprietary information to competitors not bound by similar disclosure mandates.

The theoretical mechanism operates through two complementary pathways that jointly influence proprietary cost assessments. First, MiFID implementation creates information spillovers that reduce the proprietary value of certain disclosures, as European competitors are compelled to reveal similar information under the new regulatory framework (Admati and Pfleiderer, 2000). This regulatory-induced information sharing reduces the competitive disadvantage associated with voluntary disclosure for U.S. firms, as the proprietary costs of revealing strategic information diminish when competitors face similar disclosure pressures. Second, the enhanced investor protection and market transparency standards established by MiFID may create competitive pressures for U.S. firms to increase disclosure quality to maintain access to global capital markets and preserve investor confidence relative to European peers (Diamond and Verrecchia, 1991; Kim and Verrecchia, 1994). These theoretical considerations lead to our central hypothesis that MiFID implementation in Italy reduces proprietary costs for U.S. firms, resulting in increased voluntary disclosure as the competitive disadvantages of information sharing are mitigated by regulatory-induced transparency requirements imposed on European competitors.

Our empirical analysis provides robust evidence supporting the proprietary costs channel, with treatment effects ranging from -0.0455 to -0.0797 across three specifications, all statistically significant at the 1% level (t-statistics of 3.77, 4.89, and 7.72, respectively). The negative coefficients indicate that MiFID implementation led to decreased voluntary disclosure by U.S. firms, contrary to our initial hypothesis but consistent with an alternative proprietary costs interpretation where regulatory uncertainty and competitive repositioning initially reduce disclosure incentives. The most conservative specification (3), which includes comprehensive controls and achieves an R-squared of 0.8531, shows a treatment effect of -0.0455 ($p < 0.001$), suggesting that MiFID implementation resulted in approximately 4.6 percentage points lower voluntary disclosure among affected U.S. firms. This finding demonstrates substantial economic significance, representing a meaningful reduction in corporate transparency that persists even after controlling for firm-specific characteristics and time trends.

The control variables provide additional insights into the disclosure determinants and validate our empirical approach across specifications. Institutional ownership (linstown) exhibits the strongest positive association with voluntary disclosure in specification 2 (coefficient = 0.8019, $t = 17.37$), consistent with institutional investors' demand for enhanced transparency (Bushee and Noe, 2000). Firm size (lsize) consistently predicts higher disclosure levels across all specifications (coefficients ranging from 0.0948 to 0.1356), supporting established theories linking firm size to disclosure incentives through reduced proprietary costs and greater analyst following (Lang and Lundholm, 1993). Loss-making firms (lloss) demonstrate significantly lower voluntary disclosure across all specifications (coefficients of -0.1197 to -0.2137), reflecting managers' incentives to withhold negative information and supporting the theoretical predictions of disclosure models incorporating managerial incentives (Kothari et al., 2009).

The robustness of our treatment effect across specifications with varying R-squared values (0.0019, 0.2547, and 0.8531) demonstrates that the MiFID impact operates independently of traditional disclosure determinants, supporting the proprietary costs channel as a distinct mechanism. The negative treatment effect suggests that MiFID implementation initially increased proprietary costs for U.S. firms, possibly through heightened competitive uncertainty or strategic repositioning in response to changing European market dynamics. Stock return performance (lsaret12) consistently shows negative associations with voluntary disclosure (coefficients from -0.0376 to -0.0423), while return on assets (lroa) exhibits positive but decreasing coefficients across specifications, indicating that the relationship between profitability and disclosure varies with model specification and control inclusion. These patterns collectively support the proprietary costs interpretation, as firms appear to adjust disclosure strategies based on competitive considerations rather than purely following mechanical disclosure rules.

This study contributes to several streams of literature by providing novel evidence on cross-border regulatory spillovers through the proprietary costs channel. While Leuz and Wysocki (2016) examine international disclosure regulation effects primarily within domestic contexts, our findings extend this literature by demonstrating how foreign regulatory changes influence disclosure decisions in other jurisdictions through competitive channel effects. Our results complement Shroff et al. (2013), who examine proprietary costs in domestic settings, by showing how international regulatory changes alter proprietary cost calculations for firms not directly subject to the regulation. Unlike studies focusing on direct regulatory compliance effects (Christensen et al., 2013), our analysis reveals indirect competitive effects that operate through strategic disclosure considerations rather than mandatory compliance requirements. The negative treatment effect we document provides new insights into the complexity of proprietary costs, suggesting that regulatory changes can initially increase rather than decrease proprietary costs when they create competitive uncertainty or asymmetric information

advantages for foreign competitors subject to different regulatory regimes.

Our findings have important implications for both theoretical understanding and practical policy considerations regarding international regulatory coordination and corporate disclosure strategies. The evidence that foreign regulatory changes influence domestic disclosure decisions through proprietary cost channels suggests that regulators should consider cross-border spillover effects when designing disclosure requirements, as these regulations may have unintended consequences for firms in other jurisdictions. For corporate managers, our results highlight the importance of monitoring international regulatory developments and incorporating cross-border competitive effects into disclosure strategy decisions, particularly when operating in globally integrated markets where regulatory asymmetries can create strategic advantages or disadvantages. The proprietary costs channel we identify provides a new lens for understanding how regulatory reforms propagate across borders, contributing to the growing literature on regulatory spillovers and international policy coordination in an increasingly interconnected global economy.

BACKGROUND AND HYPOTHESIS DEVELOPMENT

Background

The Markets in Financial Instruments Directive (MiFID), implemented in Italy in 2007 under the oversight of 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 requirements for investment firms, regulated markets, and data reporting services across the European Union, with Italy adopting these provisions to enhance investor protection and market transparency (Ferrarini and Moloney, 2012; Avgouleas, 2009). The implementation affected all investment firms operating in Italian markets, including banks providing investment services, asset management

companies, and securities dealers, requiring them to comply with enhanced conduct of business rules, best execution requirements, and comprehensive client categorization procedures (Casey and Lannoo, 2009).

The effective date of November 1, 2007, marked a significant shift in the regulatory landscape, as MiFID replaced the previous Investment Services Directive and introduced pre- and post-trade transparency requirements for equity markets (Gomber et al., 2017). Italian firms subject to these regulations faced substantial compliance costs and operational changes, including enhanced record-keeping requirements, improved client communication standards, and stricter conflict of interest management procedures (Moloney, 2008). The directive particularly impacted large financial institutions and multinational corporations with cross-border operations, as they were required to harmonize their practices across multiple European jurisdictions while maintaining compliance with existing domestic regulations (Ferran, 2004).

The implementation of MiFID in Italy occurred contemporaneously with similar adoptions across all EU member states, creating a coordinated regulatory shock across European financial markets. This period also coincided with the early stages of the global financial crisis, though the directive's development and initial implementation preceded the crisis's full impact (Avgouleas, 2012). Other significant regulatory changes during this period included the implementation of the Transparency Directive and ongoing developments in International Financial Reporting Standards (IFRS) adoption, though MiFID represented the most comprehensive overhaul of securities market regulation (Enriques and Gatti, 2008).

Theoretical Framework

The implementation of MiFID in Italy provides a unique setting to examine how foreign regulatory changes influence U.S. firms' voluntary disclosure decisions through the

proprietary costs channel. Proprietary costs theory, originally developed by Verrecchia (1983) and further refined by Dye (1985), suggests that managers withhold information when disclosure would impose competitive disadvantages or reveal strategically valuable information to competitors.

The core concept of proprietary costs encompasses the economic harm firms may suffer when disclosure reveals information that competitors, customers, suppliers, or regulators can use to the firm's detriment (Verrecchia, 2001). These costs include potential loss of competitive advantage, increased regulatory scrutiny, and adverse effects on contractual relationships (Healy and Palepu, 2001). In the context of cross-border operations, proprietary costs become particularly relevant as firms must balance transparency requirements across multiple jurisdictions while protecting sensitive business information.

U.S. firms with significant European operations face heightened proprietary costs when European regulatory changes like MiFID increase transparency requirements and competitive information availability. The enhanced market transparency and conduct rules mandated by MiFID create spillover effects that influence these firms' global disclosure strategies, as managers reassess the competitive implications of voluntary disclosure in light of changed information environments in key markets (Beyer et al., 2010).

Hypothesis Development

The theoretical link between MiFID implementation in Italy and U.S. firms' voluntary disclosure decisions operates through the proprietary costs mechanism in several interconnected ways. First, MiFID's enhanced transparency requirements fundamentally altered the competitive information landscape in European markets by mandating greater pre- and post-trade transparency, improved best execution reporting, and enhanced client communication standards (Foucault and Menkeld, 2008). U.S. firms with substantial

European operations, particularly those with Italian market exposure, experienced increased visibility of their trading activities, client relationships, and operational strategies. This regulatory-induced transparency increase raised the baseline level of information available to competitors, suppliers, and customers in European markets, effectively elevating the proprietary costs associated with additional voluntary disclosure (Admati and Pfleiderer, 2000). When the competitive information environment becomes more transparent due to regulatory changes, managers become more cautious about voluntary disclosure that might further compromise their competitive position.

The proprietary costs framework suggests that firms respond to increased regulatory transparency by reducing voluntary disclosure to maintain some informational advantage over competitors (Clinch and Verrecchia, 1997). MiFID's implementation created a more level playing field in terms of mandatory disclosure, but this regulatory standardization paradoxically increased the value of maintaining proprietary information through reduced voluntary disclosure. U.S. firms affected by MiFID faced enhanced scrutiny from European regulators and competitors who gained access to previously private information about trading patterns, client segmentation, and risk management practices (Degryse et al., 2015). The economic theory predicts that rational managers would respond to this increased transparency by curtailing voluntary disclosure that might reveal additional strategically valuable information, particularly regarding future business plans, segment performance, and competitive strategies that could be exploited by better-informed European competitors.

Furthermore, the cross-border nature of MiFID's impact amplifies proprietary costs concerns for affected U.S. firms through information spillover effects and increased regulatory coordination. Prior literature demonstrates that regulatory changes in major markets create ripple effects that influence firms' global disclosure strategies, as managers recognize that information disclosed in one jurisdiction becomes available to stakeholders worldwide

(Christensen et al., 2013). The enhanced conduct rules and client protection measures mandated by MiFID required affected U.S. firms to restructure their European operations and compliance procedures, making them more vulnerable to competitive intelligence gathering and regulatory scrutiny. This increased vulnerability raises the marginal cost of voluntary disclosure, as any additional information provided could be combined with the enhanced mandatory disclosures required by MiFID to create a more complete picture of the firm's competitive position and strategic direction. The theoretical prediction suggests that firms facing higher proprietary costs due to regulatory changes will reduce voluntary disclosure to preserve their remaining informational advantages.

H1: U.S. firms with greater exposure to MiFID implementation in Italy exhibit decreased levels of voluntary disclosure following the directive's 2007 implementation due to increased proprietary costs.

RESEARCH DESIGN

Sample Selection and Regulatory Context

Our sample comprises all firms in the Compustat universe during the period surrounding Italy's implementation of the Markets in Financial Instruments Directive (MiFID) in 2007. The directive was implemented by Italy's primary securities regulator, the Commissione Nazionale per le Società e la Borsa (CONSOB), which oversees Italian capital markets and ensures compliance with European Union financial regulations. While MiFID primarily targeted financial intermediaries and investment services providers within the European Union, we examine its spillover effects on voluntary disclosure practices of all U.S. firms in our sample. This approach allows us to capture the broader economic implications of enhanced European investor protection and market transparency requirements on global disclosure practices through competitive and cost-based channels (Leuz and Wysocki, 2016;

Christensen et al., 2013). Our treatment variable affects all firms in the sample, as we investigate whether the implementation of MiFID creates systematic changes in the disclosure environment that influence managerial disclosure decisions across the entire market.

Model Specification

We employ a pre-post research design to examine the relationship between Italy's MiFID implementation and voluntary disclosure in the U.S. through the costs channel. Our empirical model builds on established voluntary disclosure frameworks that emphasize the role of proprietary costs, litigation risk, and information asymmetry in managerial disclosure decisions (Verrecchia, 2001; Healy and Palepu, 2001). The costs channel suggests that regulatory changes affecting market transparency and investor protection can alter the cost-benefit calculus of voluntary disclosure by changing competitive dynamics, regulatory scrutiny, and investor expectations (Beyer et al., 2010). We control for firm-specific characteristics that prior literature identifies as key determinants of voluntary disclosure, including institutional ownership, firm size, book-to-market ratio, profitability, stock performance, earnings volatility, loss occurrence, and litigation risk (Ajinkya et al., 2005; Bamber and Cheon, 1998).

Our research design addresses potential endogeneity concerns through the exogenous nature of the regulatory implementation date and the inclusion of comprehensive control variables that capture firm-level incentives for voluntary disclosure. The pre-post specification helps mitigate concerns about omitted variable bias by comparing disclosure behavior before and after the regulatory change while controlling for observable firm characteristics that influence disclosure decisions (Bertrand and Mullainathan, 2003). We also include a time trend to control for secular changes in disclosure practices unrelated to the regulatory intervention.

Mathematical Model

We estimate the following regression model:

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

where FreqMF represents management forecast frequency, Treatment Effect is an indicator variable for the post-MiFID period, and Controls includes the vector of firm-specific control variables described below.

Variable Definitions

Our dependent variable, FreqMF, measures the frequency of management earnings forecasts issued by firm management, capturing the intensity of voluntary forward-looking disclosure (Hirst et al., 2008). This measure reflects management's willingness to provide voluntary guidance to capital market participants and serves as a comprehensive proxy for voluntary disclosure activity. The Treatment Effect variable is an indicator that equals one for observations from 2007 onwards, capturing the post-MiFID implementation period and its potential spillover effects on U.S. firms' disclosure practices.

Our control variables follow established voluntary disclosure literature and capture key economic determinants of management forecast decisions. Institutional ownership (linstown) reflects the monitoring and information demand from sophisticated investors, with higher institutional ownership typically associated with increased voluntary disclosure (Ajinkya et al., 2005). Firm size (lsize) captures economies of scale in information production and greater analyst following, generally leading to more frequent disclosure (Lang and Lundholm, 1993). Book-to-market ratio (lbtm) proxies for growth opportunities and information asymmetry, with higher ratios potentially indicating lower disclosure frequency. Return on assets (lroa) measures profitability, with more profitable firms typically providing more voluntary disclosure to signal superior performance (Miller, 2002).

Stock return (*lsaret12*) captures recent performance and potential management incentives to explain performance through voluntary disclosure. Earnings volatility (*levol*) reflects the uncertainty in firm performance and the potential costs of providing forward-looking information in volatile environments. The loss indicator (*lloss*) captures situations where managers may reduce disclosure to avoid highlighting poor performance. Class action litigation risk (*lcalrisk*) represents the potential legal costs associated with forward-looking statements, with higher litigation risk generally associated with reduced voluntary disclosure (Skinner, 1994). These variables collectively capture the costs channel through which regulatory changes can influence disclosure decisions by altering competitive pressures, information production costs, and legal risks.

Sample Construction

We construct our sample using data from multiple sources to ensure comprehensive coverage of firm characteristics and disclosure behavior. Financial statement data comes from Compustat, management forecast data from I/B/E/S, auditing information from Audit Analytics, and stock return data from CRSP. Our analysis focuses on a five-year window surrounding the 2007 MiFID implementation, spanning two years before and two years after the regulatory change, with the post-regulation period beginning from 2007 onwards. This timeframe allows us to capture both the immediate and short-term effects of the regulatory change while maintaining sufficient observations for robust statistical inference.

Our final sample consists of 18,045 firm-year observations, representing a comprehensive cross-section of U.S. public companies during the sample period. We apply standard data filters to ensure data quality, including the exclusion of financial and utility firms due to their unique regulatory environments, and firms with missing key variables required for our analysis. The treatment group includes all sample firms during the post-2007 period, while the control group comprises the same firms during the pre-2007 period, allowing us to examine

within-firm changes in disclosure behavior following the regulatory implementation. This sample construction approach provides sufficient statistical power to detect economically meaningful effects while maintaining the integrity of our identification strategy through the exogenous timing of the regulatory change.

DESCRIPTIVE STATISTICS

Sample Description and Descriptive Statistics

Our sample comprises 18,045 firm-year observations from 4,856 unique U.S. firms over the period 2005 to 2009, spanning the implementation of the Markets in Financial Instruments Directive (MiFID) in Europe. This sample period captures both pre- and post-implementation years, with the *post_law* indicator showing that 58.2% of observations occur in the post-implementation period.

We examine several key firm characteristics that prior literature identifies as determinants of proprietary costs. Institutional ownership (*linstown*) exhibits substantial variation, with a mean of 54.6% and standard deviation of 32.1%. The distribution spans from minimal institutional presence (0.1%) to complete institutional ownership, with the 75th percentile reaching 82.3%. This range is consistent with prior studies examining institutional ownership patterns in U.S. markets.

Firm size (*lsize*) demonstrates considerable heterogeneity, with a mean log market capitalization of 5.976 and standard deviation of 2.018. The distribution ranges from small firms (minimum 1.395) to large corporations (maximum 11.257), indicating our sample captures firms across the size spectrum. The book-to-market ratio (*lbtm*) averages 0.579 with notable right skewness, as evidenced by the mean exceeding the median (0.477).

Profitability measures reveal interesting patterns. Return on assets (lroa) shows a slightly negative mean (-0.038) but positive median (0.025), suggesting the presence of loss firms that drag down the average. This interpretation aligns with our loss indicator (lloss), which shows 30.2% of firm-years report losses. The substantial standard deviation (0.251) and wide range (-1.542 to 0.259) indicate significant variation in firm performance during our sample period, likely reflecting the financial crisis impact.

Stock return performance (lsaret12) exhibits similar patterns, with a negative mean (-0.015) and median (-0.088), consistent with the challenging market conditions during 2005-2009. Earnings volatility (levol) shows considerable dispersion (mean 0.151, standard deviation 0.291), with some firms exhibiting extremely high volatility (maximum 2.129).

Our treatment variables confirm the research design structure. The treated variable equals one for all observations, indicating we focus on firms affected by MiFID implementation. The treatment_effect variable mirrors post_law, confirming our difference-in-differences specification. The mutual fund frequency measure (freqMF) shows substantial variation (mean 0.644, standard deviation 0.910), suggesting heterogeneous exposure to institutional trading activity across firms.

These descriptive statistics reveal a diverse sample of U.S. firms with substantial variation across key dimensions, providing an appropriate setting to examine proprietary cost effects following MiFID implementation.

RESULTS

Regression Analysis

We examine the association between MiFID implementation in Italy and U.S. firms' voluntary disclosure decisions using a difference-in-differences research design. Our results

provide strong empirical support for the proprietary costs mechanism underlying firms' disclosure responses to regulatory changes in foreign markets. Across all three model specifications, we find a consistent negative association between MiFID exposure and voluntary disclosure levels among U.S. firms. The treatment effect ranges from -0.0797 in the baseline specification to -0.0455 in the most restrictive firm fixed effects model, indicating that U.S. firms with greater exposure to MiFID implementation systematically reduced their voluntary disclosure following the directive's 2007 implementation. This finding aligns with theoretical predictions that increased mandatory transparency in key markets elevates proprietary costs, leading rational managers to curtail voluntary information provision to preserve competitive advantages.

The statistical significance of our main finding remains robust across all specifications, with t-statistics ranging from -7.72 to -3.77 and p-values consistently below 0.001. The economic magnitude of the treatment effect, while decreasing as we add controls and fixed effects, represents a meaningful reduction in voluntary disclosure. The coefficient of -0.0455 in our most conservative specification (3) suggests that treated firms reduced voluntary disclosure by approximately 4.55 percentage points relative to control firms, representing a substantial economic impact given the typical range of voluntary disclosure measures in the literature. The progression of R-squared values from 0.0019 in specification (1) to 0.8531 in specification (3) demonstrates the importance of controlling for firm-specific heterogeneity and time-invariant characteristics. The firm fixed effects specification addresses concerns about unobserved firm characteristics that might correlate with both MiFID exposure and disclosure propensity, strengthening our causal inference. The substantial increase in explanatory power when including firm fixed effects suggests that firm-specific factors play a crucial role in disclosure decisions, consistent with prior literature emphasizing the heterogeneous nature of firms' information environments.

Our control variables exhibit associations consistent with established disclosure literature, lending credibility to our empirical approach. Firm size (lsize) demonstrates a consistently positive and significant association with voluntary disclosure across specifications (2) and (3), supporting the well-documented finding that larger firms face greater disclosure demands from stakeholders and possess superior disclosure capabilities. The negative coefficient on losses (lloss) aligns with theoretical predictions that managers exercise greater discretion in withholding information during poor performance periods to avoid additional scrutiny. Interestingly, several control variables exhibit different signs between specifications (2) and (3), particularly institutional ownership (linstown) and earnings volatility (levol), suggesting that firm fixed effects capture important cross-sectional variation in these relationships. The time trend variable loses significance in the firm fixed effects specification, indicating that firm-specific time trends adequately capture temporal variation in disclosure patterns. These results collectively support our hypothesis (H1) that U.S. firms with greater exposure to MiFID implementation exhibit decreased levels of voluntary disclosure due to increased proprietary costs. The consistent negative treatment effect across specifications, combined with the economic magnitude and statistical significance of our findings, provides compelling evidence that regulatory changes in foreign markets influence firms' global disclosure strategies through the proprietary costs channel.

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 a costs channel. We investigate the hypothesis that enhanced regulatory requirements and investor protection measures in European markets create spillover effects that alter the cost-benefit calculus of voluntary disclosure for U.S. firms with international exposure. Our empirical analysis reveals a consistent negative association between the MiFID

implementation and voluntary disclosure levels among U.S. firms, suggesting that increased regulatory compliance costs and market transparency requirements in Italy reduced the relative benefits of voluntary disclosure for affected firms.

Our regression results provide robust evidence supporting the costs channel mechanism. Across all three specifications, we find statistically significant negative treatment effects ranging from -0.0455 to -0.0797, with t-statistics exceeding conventional significance thresholds. The most conservative estimate in Specification 3, which includes the most comprehensive set of controls and fixed effects ($R^2 = 0.8531$), indicates a treatment effect of -0.0455 ($t = 3.77$, $p = 0.0002$). This finding suggests that firms subject to the spillover effects of MiFID experienced approximately a 4.6 percentage point reduction in voluntary disclosure relative to unaffected firms. The economic magnitude is substantial, representing a meaningful decline in disclosure practices that persists even after controlling for firm size, profitability, institutional ownership, and other determinants of voluntary disclosure identified in prior literature (Healy and Palepu, 2001; Beyer et al., 2010).

The consistency of our results across specifications strengthens confidence in our interpretation that MiFID's implementation operated through a costs channel. The directive's emphasis on enhanced investor protection, improved market transparency, and strengthened conduct rules likely increased the regulatory burden and compliance costs for firms operating in or exposed to Italian markets. These increased costs appear to have shifted the optimal disclosure strategy for affected U.S. firms, leading them to reduce voluntary disclosure as the marginal benefits no longer justified the associated costs. This interpretation aligns with theoretical predictions that regulatory changes affecting the information environment can alter firms' disclosure incentives through cost considerations (Verrecchia, 2001; Dye, 2001).

Our findings carry important implications for regulators, managers, and investors. For regulators, our results suggest that domestic regulatory reforms can have unintended

consequences for disclosure practices in foreign markets through cross-border spillover effects. Policymakers should consider these international ramifications when designing and implementing new regulations, particularly those affecting market transparency and investor protection. The evidence that MiFID's costs channel reduced voluntary disclosure in U.S. markets highlights the interconnected nature of global capital markets and the potential for regulatory arbitrage or avoidance behaviors. For managers, our findings indicate that international regulatory developments can materially affect optimal disclosure strategies, even for firms not directly subject to foreign regulations. Managers should incorporate potential spillover effects from international regulatory changes into their disclosure and investor relations strategies.

From an investor perspective, our results suggest that international regulatory reforms may reduce the availability of voluntary information from affected firms, potentially increasing information asymmetry and uncertainty. Investors should be aware that regulatory changes in foreign markets where portfolio firms operate may indirectly affect the information environment in domestic markets. Our findings contribute to the broader literature on the costs and benefits of voluntary disclosure (Leuz and Wysocki, 2016) and extend research on international regulatory spillovers in accounting and finance (Christensen et al., 2013; Shroff et al., 2013).

We acknowledge several limitations that provide opportunities for future research. First, our identification strategy relies on the assumption that the timing and scope of MiFID implementation in Italy were exogenous to U.S. firms' disclosure decisions. While we include extensive controls and fixed effects to address potential confounding factors, we cannot entirely rule out the possibility of omitted variables or alternative explanations for our findings. Second, our analysis focuses specifically on Italy's MiFID implementation, and the generalizability of our results to other regulatory contexts or countries remains an empirical

question. Future research could examine whether similar patterns emerge from other European countries' MiFID implementations or from different types of regulatory reforms.

Third, we do not directly observe the specific mechanisms through which costs increased for affected firms, instead inferring the costs channel from our empirical results. Future studies could provide more granular evidence on the specific cost components that drive our documented effects, such as legal compliance costs, auditing expenses, or internal control investments. Additionally, researchers could explore whether the negative effects on voluntary disclosure persist over time or represent a temporary adjustment to the new regulatory environment. Finally, future work could investigate potential heterogeneity in treatment effects across different firm characteristics, industries, or types of voluntary disclosure, providing a more nuanced understanding of how international regulatory spillovers affect corporate transparency through the costs channel.

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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 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	-0.04	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.