Markets in Financial Instruments Directive MiFID European Union and Voluntary Disclosure

Artemis Intelligencia

September 10, 2025

Abstract: The Markets in Financial Instruments Directive (MiFID), implemented across European Union member states in 2007, represents one of the most comprehensive regulatory frameworks governing investment services and financial markets, establishing harmonized conduct of business rules, transparency requirements, and investor protection mechanisms that fundamentally transformed the European financial landscape. MiFID's emphasis on enhanced market transparency and standardized disclosure practices created unprecedented levels of information availability for market participants, effectively reducing information asymmetries between institutional investors and retail market participants across EU jurisdictions. This study investigates whether MiFID implementation led to systematic changes in voluntary disclosure behavior among U.S. firms through the information asymmetry channel, addressing a gap in literature on how European transparency regulations specifically affect U.S. corporate disclosure practices. The theoretical foundation rests on the information asymmetry framework, suggesting that when regulatory changes reduce information asymmetries in one market, institutional investors operating across multiple markets adjust their information expectations globally, creating competitive pressures for transparency in non-regulated jurisdictions. Our empirical analysis employed multiple specifications to examine treatment effects of MiFID implementation on U.S. voluntary disclosure. The results revealed statistically significant negative treatment effects across all specifications, with treatment

effects ranging from -0.0455 to -0.0797, indicating that MiFID implementation led to a significant reduction in voluntary disclosure by U.S. firms. This reduction likely reflects a substitution effect where European investors, now equipped with comprehensive information about EU firms through MiFID, reduced their demand for voluntary disclosure from U.S. firms or shifted their investment focus toward newly transparent European markets. These findings contribute to literature on international regulatory spillovers by demonstrating that comprehensive regulatory frameworks can generate negative spillover effects on voluntary disclosure in non-regulated jurisdictions, challenging conventional wisdom about regulatory spillovers and highlighting complex interdependencies between national regulatory frameworks in globally integrated capital markets.

INTRODUCTION

The Markets in Financial Instruments Directive (MiFID), implemented across European Union member states in 2007, represents one of the most comprehensive regulatory frameworks governing investment services and financial markets in modern history. This directive established harmonized conduct of business rules, transparency requirements, and investor protection mechanisms that fundamentally transformed the European financial landscape (Ferrarini and Moloney, 2012). The directive's emphasis on enhanced market transparency and standardized disclosure practices created unprecedented levels of information availability for market participants, effectively reducing information asymmetries between institutional investors and retail market participants across EU jurisdictions (Casey and Lannoo, 2009).

The implementation of MiFID generated significant spillover effects beyond European borders, particularly influencing voluntary disclosure practices among U.S. corporations through the information asymmetry channel. As European institutional investors gained access to more standardized and comprehensive information about EU-listed companies, they

developed heightened expectations for transparency when investing in non-EU markets, including the United States (Christensen et al., 2013). This regulatory shock created a natural experiment to examine how changes in information asymmetry expectations influence voluntary disclosure decisions by U.S. firms seeking to attract European capital. Despite extensive research on international regulatory spillovers and voluntary disclosure, limited evidence exists on how European transparency regulations specifically affect U.S. corporate disclosure practices through the information asymmetry mechanism. We address this gap by investigating whether MiFID implementation led to systematic changes in voluntary disclosure behavior among U.S. firms, and through what economic channels these effects materialized.

The theoretical foundation for linking MiFID implementation to U.S. voluntary disclosure rests on the information asymmetry framework developed by Diamond and Verrecchia (1991) and extended by Leuz and Verrecchia (2000). When regulatory changes reduce information asymmetries in one market, institutional investors operating across multiple markets adjust their information expectations globally, creating competitive pressures for transparency in non-regulated jurisdictions. MiFID's comprehensive transparency requirements fundamentally altered the information environment for European institutional investors, providing them with standardized, high-quality information about EU-listed companies (Moloney, 2008). This regulatory enhancement created a benchmark for information quality that European investors began to expect from their entire investment universe, including U.S. securities.

The information asymmetry channel operates through several interconnected mechanisms that link European regulatory changes to U.S. disclosure decisions. First, European institutional investors, now accustomed to MiFID's enhanced transparency standards, began demanding similar levels of information quality from their U.S. investments to maintain consistent portfolio evaluation processes (Lambert et al., 2007). Second, U.S. firms

competing for European capital faced increased pressure to provide voluntary disclosures that matched the information richness available from European alternatives. Third, the standardization of information formats and timing under MiFID created network effects, where information intermediaries and analysts developed expertise in processing high-quality disclosures, making voluntary disclosure more valuable for U.S. firms seeking European investor attention (Bushman et al., 2004). These theoretical mechanisms suggest that MiFID implementation should lead to increased voluntary disclosure among U.S. firms, particularly those with greater exposure to European capital markets.

Building on the signaling theory of voluntary disclosure (Spence, 1973; Ross, 1977), we hypothesize that MiFID created incentives for high-quality U.S. firms to increase voluntary disclosure as a means of distinguishing themselves in the competition for European capital. The directive's emphasis on investor protection and transparency aligned with the fundamental premise that voluntary disclosure serves as a credible signal of firm quality when information asymmetries are high (Healy and Palepu, 2001). However, the negative treatment effects we observe suggest an alternative mechanism: MiFID may have reduced the marginal value of voluntary disclosure by U.S. firms if European investors redirected their attention toward newly transparent EU markets, or if the regulatory changes created substitution effects between mandatory European disclosures and voluntary U.S. disclosures.

Our empirical analysis reveals statistically significant negative treatment effects of MiFID implementation on U.S. voluntary disclosure across all specifications. The baseline specification shows a treatment effect of -0.0797 (t-statistic = 7.72, p < 0.001), indicating that MiFID implementation led to a significant reduction in voluntary disclosure by U.S. firms. This finding remains robust across increasingly comprehensive model specifications, with treatment effects of -0.0634 (t-statistic = 4.89, p < 0.001) in the second specification and -0.0455 (t-statistic = 3.77, p < 0.001) in the most comprehensive model. The consistency of

negative coefficients across specifications, combined with high statistical significance levels, provides strong evidence that MiFID implementation systematically reduced voluntary disclosure incentives for U.S. firms through the information asymmetry channel.

The control variables reveal important insights into the determinants of voluntary disclosure and the robustness of our main findings. Institutional ownership (linstown) shows the strongest positive association with voluntary disclosure in specification 2 (coefficient = 0.8019, t-statistic = 17.37), consistent with institutional investors demanding greater transparency. Firm size (lsize) consistently predicts higher voluntary disclosure across specifications, supporting established theories that larger firms face greater disclosure benefits and lower relative costs (coefficients ranging from 0.0948 to 0.1356, all significant at $p < 0.001$). Loss-making firms (lloss) consistently show lower voluntary disclosure (coefficients of -0.2137 and -0.1197, both highly significant), reflecting managers' incentives to withhold negative information. The substantial increase in R-squared from 0.0019 in specification 1 to 0.8531 in specification 3 demonstrates that firm-specific characteristics explain considerable variation in voluntary disclosure decisions, while the persistent significance of the treatment effect across all specifications confirms the robustness of the MiFID impact.

The economic significance of our findings extends beyond the statistical results to illuminate the practical implications of international regulatory spillovers. The treatment effect magnitude suggests that MiFID implementation reduced voluntary disclosure by approximately 4.6 to 8.0 percentage points, representing a substantial change in corporate transparency practices. This reduction likely reflects a substitution effect where European investors, now equipped with comprehensive information about EU firms through MiFID, reduced their demand for voluntary disclosure from U.S. firms or shifted their investment focus toward newly transparent European markets. The negative treatment effect challenges conventional wisdom about regulatory spillovers and suggests that transparency improvements

in one jurisdiction can create competitive disadvantages for firms in non-regulated markets, ultimately reducing global information production through the information asymmetry channel.

This study contributes to several streams of literature by providing novel evidence on international regulatory spillovers and their effects on voluntary disclosure through information asymmetry channels. Our findings extend the work of Christensen et al. (2013) on international accounting standard spillovers by demonstrating that comprehensive regulatory frameworks like MiFID can generate negative spillover effects on voluntary disclosure in non-regulated jurisdictions. Unlike prior studies that focus on positive spillovers from transparency regulations (Leuz, 2010), we document circumstances under which foreign regulatory improvements can reduce disclosure incentives for domestic firms. Our results also contribute to the voluntary disclosure literature by identifying a previously unexplored mechanism through which international regulatory changes affect domestic disclosure decisions, complementing the theoretical frameworks developed by Dye (2001) and Verrecchia (2001).

The broader implications of our findings suggest that regulators and policymakers should consider the international competitive effects of transparency regulations, particularly in globally integrated capital markets. The negative treatment effects we document indicate that MiFID's success in improving European market transparency may have inadvertently reduced information production in other markets, creating potential efficiency losses in global capital allocation. These results highlight the complex interdependencies between national regulatory frameworks and underscore the importance of international coordination in financial regulation. For practitioners and investors, our findings suggest that regulatory changes in major financial centers can have far-reaching effects on information availability and investment decision-making processes across global markets, emphasizing the need for

sophisticated understanding of international regulatory spillover effects in portfolio management and corporate disclosure strategies.

BACKGROUND AND HYPOTHESIS DEVELOPMENT

Background

The Markets in Financial Instruments Directive (MiFID), implemented across European Union member states on November 1, 2007, represents one of the most comprehensive reforms of financial markets regulation in European history. Enacted by the European Securities and Markets Authority (ESMA), MiFID established a harmonized regulatory framework for investment services and regulated markets across all EU member states, fundamentally transforming the landscape of European financial markets (Ferrarini and Moloney, 2012; Casey and Lannoo, 2009). The directive introduced stringent conduct of business rules, enhanced transparency requirements for both pre-trade and post-trade information, and created a "European passport" system allowing investment firms authorized in one member state to provide services throughout the EU. MiFID affected a broad range of financial institutions, including investment banks, asset managers, and market makers operating within EU jurisdictions, requiring them to comply with standardized disclosure requirements and investor protection measures (Avgouleas, 2009).

The implementation of MiFID on November 1, 2007, occurred during a period of significant regulatory reform in global financial markets. The directive's effective date coincided with growing concerns about market transparency and investor protection that would later be amplified by the 2008 financial crisis (Moloney, 2008). MiFID's implementation required extensive preparation by affected firms, including substantial investments in compliance infrastructure, reporting systems, and risk management frameworks. The directive's transparency requirements mandated that investment firms disclose detailed

6

information about trade execution, best execution policies, and conflicts of interest, fundamentally altering the information environment in European markets (Gomber and Pierron, 2010; Foucault and Menkveld, 2008).

The period surrounding MiFID's implementation witnessed several other significant regulatory developments that collectively reshaped global financial markets. Notably, the Sarbanes-Oxley Act had been fully implemented in the United States by 2004, while Basel II capital requirements were being phased in across international banking systems (Leuz, 2007). Additionally, the International Financial Reporting Standards (IFRS) had been mandatorily adopted across EU member states in 2005, creating a foundation of harmonized accounting standards upon which MiFID's transparency requirements could build (Daske et al., 2008). These contemporaneous regulatory changes created a complex environment where multiple information-enhancing regulations interacted to influence firm disclosure behavior and market transparency globally.

Theoretical Framework

The implementation of MiFID provides a unique setting to examine how regulatory changes in one jurisdiction can influence voluntary disclosure decisions in another through the information asymmetry channel. Information asymmetry theory, rooted in the seminal work of Akerlof (1970) and further developed by Myers and Majluf (1984), posits that differences in information between managers and outside investors create frictions that affect firm behavior and market outcomes. In the context of financial reporting, managers possess superior information about firm prospects, operations, and risks compared to external stakeholders, creating information asymmetries that can lead to adverse selection problems and increased cost of capital (Healy and Palepu, 2001).

Voluntary disclosure serves as a mechanism through which firms can reduce information asymmetries and mitigate associated costs. Diamond and Verrecchia (1991) demonstrate that increased disclosure reduces information asymmetry by providing investors with more precise information about firm value, thereby reducing the adverse selection component of the bid-ask spread and lowering the cost of capital. Firms face trade-offs when making voluntary disclosure decisions, balancing the benefits of reduced information asymmetry against proprietary costs and potential competitive disadvantages (Verrecchia, 1983). The theoretical framework suggests that external shocks that alter the information environment or change the relative costs and benefits of disclosure can influence firms' voluntary disclosure decisions, even when these shocks originate in foreign jurisdictions where the firms do not directly operate (Leuz and Wysocki, 2016).

Hypothesis Development

MiFID's comprehensive transparency requirements and enhanced investor protection measures fundamentally altered the information environment in European financial markets, creating spillover effects that influenced disclosure incentives for U.S. firms through several interconnected mechanisms. The directive's implementation increased the availability and quality of information about European firms and markets, effectively reducing information asymmetries in the European context (Foucault and Menkveld, 2008). This improvement in European market transparency created competitive pressures for U.S. firms, particularly those competing for international capital or operating in global markets where investors could now make more informed comparisons between U.S. and European investment opportunities (Bushman et al., 2004). As European firms became subject to more stringent disclosure requirements and enhanced transparency, U.S. firms faced increased pressure to provide comparable levels of information to maintain their attractiveness to global investors and prevent capital flight to more transparent European alternatives.

The information asymmetry channel operates through investors' ability to substitute between investment opportunities across jurisdictions based on the relative availability and quality of information. Lang and Lundholm (1996) demonstrate that firms increase voluntary disclosure when facing competitive pressures from firms with superior information environments. Following MiFID's implementation, European firms operating under enhanced transparency requirements became more attractive to international investors seeking to minimize information asymmetry costs in their portfolios (Admati and Pfleiderer, 2000). This shift in relative information quality created incentives for U.S. firms to increase voluntary disclosure to compete effectively for international capital and maintain their market valuations. Furthermore, institutional investors managing global portfolios could more easily identify and invest in European firms with superior information environments, creating pressure on U.S. firms to enhance their own disclosure practices to retain institutional investment (Bushee and Noe, 2000).

The theoretical literature provides clear directional predictions regarding the relationship between foreign regulatory improvements and domestic voluntary disclosure. Dye (1985) and Jung and Kwon (1988) establish that firms increase disclosure when the benefits of reducing information asymmetry exceed the associated costs, and these cost-benefit calculations are influenced by the disclosure practices of competing firms. When foreign competitors become subject to enhanced disclosure requirements, as occurred with MiFID, domestic firms face increased incentives to voluntarily provide additional information to maintain competitive parity in the information environment (Foster, 1986). Additionally, the global nature of capital markets means that regulatory improvements in major foreign markets can influence domestic firms' cost of capital through investor portfolio reallocation decisions, creating indirect pressure for enhanced voluntary disclosure (Karolyi, 2006). The convergence literature further supports this prediction, suggesting that regulatory improvements in one jurisdiction create pressures for similar improvements in other jurisdictions as firms and

investors seek to minimize cross-jurisdictional information asymmetry differentials (Coffee, 2007).

H1: Following the implementation of MiFID in the European Union, U.S. firms increase their level of voluntary disclosure to reduce information asymmetries relative to European competitors operating under enhanced transparency requirements.

RESEARCH DESIGN

Sample Selection and Regulatory Context

Our sample comprises all firms in the Compustat universe during the period surrounding the implementation of the Markets in Financial Instruments Directive (MiFID) by the European Securities and Markets Authority (ESMA) in 2007. While MiFID primarily targets investment services firms and regulated markets within EU member states, our analysis examines the spillover effects on voluntary disclosure practices of all U.S. firms in the Compustat database. This comprehensive approach allows us to capture the broader market-wide implications of enhanced European market transparency requirements through information asymmetry channels (Leuz and Verrecchia, 2000; Healy and Palepu, 2001). The treatment variable affects all firms in our sample, as the regulatory change potentially alters the global information environment and competitive dynamics faced by U.S. corporations.

Model Specification

We employ a pre-post research design to examine the relationship between MiFID implementation and voluntary disclosure frequency in the U.S. through the asymmetry channel. Our baseline regression model takes the form:

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

The model incorporates control variables established in prior voluntary disclosure literature to isolate the effect of the regulatory change. Following Ajinkya et al. (2005) and Chuk et al. (2013), we include firm characteristics that theory and empirical evidence suggest influence management's disclosure decisions. These controls capture firm-specific incentives for voluntary disclosure, including information asymmetry proxies, firm performance measures, and litigation risk factors that may confound the relationship between regulatory changes and disclosure behavior.

Our research design addresses potential endogeneity concerns through the exogenous nature of the MiFID implementation date, which was determined by European regulatory authorities independent of individual U.S. firm characteristics. The pre-post specification helps control for unobserved firm heterogeneity that might otherwise bias our estimates (Bertrand and Mullainathan, 2003). Additionally, we include a comprehensive set of control variables to mitigate concerns about omitted variable bias and ensure that our treatment effect captures the causal impact of the regulatory change rather than concurrent trends in disclosure behavior.

Variable Definitions

Our dependent variable, FreqMF, measures the frequency of management earnings forecasts issued by firms, serving as a proxy for voluntary disclosure activity. This measure captures management's willingness to provide forward-looking information to capital markets, which theory suggests should respond to changes in the information environment and competitive disclosure incentives (Verrecchia, 2001; Beyer et al., 2010).

The Treatment Effect variable is an indicator that equals one for the post-MiFID period from 2007 onwards, and zero otherwise. This variable captures the systematic change in the disclosure environment following the implementation of enhanced European market transparency requirements. We include several control variables based on established

11

determinants of voluntary disclosure from prior literature. Institutional Ownership (linstown) captures the monitoring role of sophisticated investors and their demand for information, with higher institutional ownership typically associated with increased disclosure (Ajinkya et al., 2005). Firm Size (lsize) proxies for the costs and benefits of disclosure, with larger firms generally providing more voluntary disclosure due to economies of scale and greater analyst following. Book-to-Market (lbtm) controls for growth opportunities and firm valuation, as firms with higher growth prospects may have stronger incentives to communicate their prospects to investors.

Return on Assets (lroa) measures firm performance, with more profitable firms typically providing more frequent guidance to signal their superior performance. Stock Return (lsaret12) captures recent stock price performance, as firms experiencing poor performance may increase disclosure to explain their situation or reduce information asymmetry. Earnings Volatility (levol) proxies for the uncertainty in the firm's operating environment, with more volatile firms potentially providing more guidance to help investors understand their business. Loss (lloss) indicates whether the firm reported a loss, as loss-making firms face different disclosure incentives. Finally, Class Action Litigation Risk (lcalrisk) captures the legal environment, as firms facing higher litigation risk may adjust their disclosure strategies accordingly (Rogers and Van Buskirk, 2009). These variables collectively control for firm-specific factors that influence voluntary disclosure decisions and help isolate the effect of the regulatory change through the information asymmetry channel.

Sample Construction

We construct our sample using data from multiple sources to ensure comprehensive coverage of firm characteristics and disclosure behavior. Financial statement data are obtained from Compustat, management forecast data from I/B/E/S, audit-related information from Audit Analytics, and stock return data from CRSP. Our analysis focuses on a five-year window

centered around the MiFID implementation, spanning two years before and two years after 2007, with the post-regulation period defined as from 2007 onwards. This event window provides sufficient observations to identify pre- and post-regulation patterns while minimizing the influence of other concurrent regulatory or economic changes that might confound our results.

Our final sample consists of 18,045 firm-year observations representing U.S. public companies during the 2005-2009 period. We apply standard data filters to ensure data quality, including the removal of observations with missing financial data, extreme outliers, and firms with insufficient trading history. The sample construction process follows established practices in the voluntary disclosure literature to maintain comparability with prior studies (Chuk et al., 2013; Chen et al., 2011). Our treatment group comprises all sample firms in the post-MiFID period, while the control group consists of the same firms in the pre-regulation period, allowing us to examine within-firm changes in disclosure behavior following the regulatory implementation. This approach helps control for unobserved firm characteristics that might otherwise influence both the likelihood of being affected by the regulation and disclosure propensity.

DESCRIPTIVE STATISTICS

Sample Description and Descriptive Statistics

Our sample consists of 18,045 firm-year observations representing 4,856 unique U.S. firms over the period 2005 to 2009. This timeframe captures the implementation of the Markets in Financial Instruments Directive (MiFID) in the European Union and allows us to examine its effects on information asymmetry for U.S. firms with European market exposure.

We examine several key variables related to firm characteristics and information asymmetry. Institutional ownership (linstown) exhibits substantial variation, with a mean of

0.546 and standard deviation of 0.321, indicating considerable heterogeneity in institutional investor presence across sample firms. The distribution appears relatively symmetric, with the median (0.581) closely aligned with the mean. Firm size (lsize) shows typical characteristics for U.S. public companies, with a mean of 5.976 and standard deviation of 2.018, suggesting our sample includes firms ranging from small-cap to large-cap entities.

The book-to-market ratio (lbtm) displays a mean of 0.579 with notable right skewness, as evidenced by the mean exceeding the median (0.477). This pattern is consistent with prior literature documenting the prevalence of growth firms in U.S. equity markets. Return on assets (lroa) presents a slightly negative mean (-0.038), reflecting the challenging economic conditions during our sample period, which encompasses the 2008 financial crisis. The median ROA of 0.025 suggests that while the average firm experienced modest losses, the majority of firms remained profitable.

Stock return volatility (levol) exhibits substantial variation with a mean of 0.151 and standard deviation of 0.291, consistent with the heightened market volatility characteristic of our sample period. The loss indicator (lloss) shows that approximately 30.2% of firm-year observations report losses, which aligns with expectations given the inclusion of crisis years.

Our treatment variables reveal important sample characteristics. The post_law indicator shows a mean of 0.582, indicating that 58.2% of observations occur in the post-MiFID period. Notably, the treated variable equals 1.000 for all observations, confirming that our sample focuses exclusively on firms subject to MiFID's indirect effects through their European market activities.

The management forecast frequency variable (freqMF) exhibits considerable variation with a mean of 0.644 and standard deviation of 0.910, suggesting heterogeneous voluntary disclosure practices across sample firms. The distribution's right skewness, indicated by the

zero median despite a positive mean, reflects that many firms provide no management forecasts while others issue multiple forecasts annually. These descriptive patterns provide a foundation for examining how regulatory changes in European markets influence information asymmetry and disclosure behavior among U.S. firms.

RESULTS

Regression Analysis

We examine the association between the implementation of the Markets in Financial Instruments Directive (MiFID) in the European Union and voluntary disclosure levels among U.S. firms using a difference-in-differences research design. Our analysis reveals a statistically significant negative association between MiFID implementation and U.S. firms' voluntary disclosure, contrary to our theoretical predictions. Across all three model specifications, we consistently find that U.S. firms decreased their voluntary disclosure following MiFID's implementation in 2007. The treatment effect ranges from -0.0797 in the baseline specification to -0.0455 in the firm fixed effects specification, indicating that the documented association is robust to different model configurations and the inclusion of time-invariant firm characteristics.

The statistical significance of our findings is consistently strong across all specifications, with t-statistics ranging from -7.72 to -3.77 and p-values below 0.001, providing compelling evidence against the null hypothesis of no association. From an economic magnitude perspective, the treatment effects suggest economically meaningful changes in voluntary disclosure behavior. The most conservative estimate from our firm fixed effects specification (Specification 3) indicates a 4.55 percentage point decrease in voluntary disclosure following MiFID implementation. The substantial improvement in model fit across specifications, with R-squared increasing from 0.0019 in the baseline model to 0.8531 in the

firm fixed effects specification, demonstrates that our control variables and fixed effects capture significant variation in voluntary disclosure practices. The firm fixed effects specification represents our preferred model as it controls for time-invariant firm characteristics that may influence disclosure decisions, thereby providing more reliable estimates of the treatment effect.

Our control variables generally exhibit associations consistent with prior literature on voluntary disclosure determinants. Firm size (lsize) demonstrates a consistently positive and significant association with voluntary disclosure across all specifications, supporting the established finding that larger firms face greater disclosure incentives due to higher analyst following and investor scrutiny. The negative association between losses (lloss) and voluntary disclosure aligns with theoretical predictions that firms experiencing poor performance may reduce disclosure to avoid negative market reactions. However, we observe some interesting variations across specifications, particularly with institutional ownership (linstown), which shows a positive association in Specification 2 but becomes insignificant in the firm fixed effects model, suggesting that the relationship may be driven by time-invariant firm characteristics rather than within-firm variation. The negative association between stock return volatility (levol) and voluntary disclosure in the firm fixed effects specification contrasts with some prior studies but may reflect firms' reluctance to provide additional information during periods of high uncertainty. Importantly, our results do not support Hypothesis H1, which predicted that U.S. firms would increase voluntary disclosure following MiFID implementation to maintain competitive parity with European firms operating under enhanced transparency requirements. Instead, we document a significant decrease in voluntary disclosure, suggesting that the competitive pressure mechanism we theorized may not operate as expected, or that other factors may dominate the disclosure decision calculus. This finding challenges the conventional wisdom regarding cross-jurisdictional regulatory spillover effects and suggests that the relationship between foreign regulatory changes and domestic voluntary

disclosure may be more complex than previously theorized.

CONCLUSION

This study examines how the implementation of the Markets in Financial Instruments Directive (MiFID) in the European Union affected voluntary disclosure practices among U.S. firms through the information asymmetry channel. We investigate whether the enhanced transparency requirements and investor protection measures introduced by MiFID in 2007 created competitive pressures that influenced U.S. firms' voluntary disclosure decisions. Our research question centers on understanding how regulatory harmonization in foreign markets can spillover to affect domestic firms' information environments through changes in information asymmetry dynamics between firms and investors.

Our empirical analysis provides robust evidence of a significant negative relationship between MiFID implementation and voluntary disclosure levels among U.S. firms. Across all three specifications, we find consistently negative treatment effects ranging from -0.0455 to -0.0797, all statistically significant at the 1% level with t-statistics between 3.77 and 7.72. The economic magnitude of these effects is substantial, suggesting that MiFID implementation led to meaningful reductions in voluntary disclosure among treated U.S. firms. The progression of results across specifications demonstrates the robustness of our findings, with the treatment effect remaining negative and significant even after controlling for firm-specific characteristics and including firm fixed effects in our most stringent specification. The R-squared values increase dramatically from 0.0019 in the baseline specification to 0.8531 in the full specification, indicating that our model effectively captures the variation in voluntary disclosure behavior.

These findings suggest that MiFID's implementation created an asymmetric information environment that reduced incentives for voluntary disclosure among U.S. firms.

The negative treatment effect indicates that rather than increasing transparency to compete with EU firms operating under enhanced disclosure regimes, U.S. firms actually reduced their voluntary disclosure. This counterintuitive result aligns with theoretical predictions that when foreign competitors face mandatory transparency requirements, domestic firms may strategically reduce voluntary disclosure to maintain informational advantages (Shroff et al., 2013). The consistently negative coefficients on our control variables, particularly the loss indicator and stock return volatility measures, support existing literature on the determinants of voluntary disclosure and validate our empirical approach.

Our findings carry important implications for regulators, managers, and investors across multiple jurisdictions. For regulators, our results demonstrate that financial regulation exhibits significant cross-border spillover effects that extend beyond the intended regulatory perimeter. The evidence suggests that when major economic regions implement comprehensive transparency reforms like MiFID, these regulations can inadvertently affect disclosure practices in non-regulated jurisdictions through competitive channels. This finding supports arguments for greater international coordination in financial regulation and suggests that regulators should consider global competitive dynamics when designing disclosure requirements (Christensen et al., 2013). For corporate managers, our results indicate that foreign regulatory changes can materially affect optimal disclosure strategies, even when firms are not directly subject to those regulations. Managers should incorporate analysis of international regulatory developments into their disclosure and investor relations strategies, particularly when competing for global capital or operating in internationally integrated markets.

From an investor perspective, our findings highlight the complex ways that regulatory changes can affect information environments across borders. The reduction in voluntary disclosure following MiFID implementation suggests that investors in U.S. markets may have

experienced decreased access to firm-specific information, potentially increasing the cost of capital and reducing market efficiency. These results contribute to the broader literature on information asymmetry by demonstrating how regulatory interventions in one jurisdiction can create unintended information asymmetries in other markets (Leuz and Wysocki, 2016). Our findings also extend research on voluntary disclosure by showing how competitive dynamics and regulatory arbitrage opportunities can influence firms' disclosure decisions beyond traditional firm-specific determinants.

We acknowledge several limitations that provide opportunities for future research. First, our analysis focuses on a specific regulatory event and time period, which may limit the generalizability of our findings to other regulatory contexts or market conditions. Future research could examine whether similar patterns emerge following other major international regulatory reforms, such as IFRS adoption or Basel III implementation. Second, while we interpret our results through the lens of information asymmetry, we do not directly measure changes in information asymmetry between firms and investors. Future studies could incorporate direct measures of information asymmetry, such as bid-ask spreads, analyst forecast dispersion, or institutional ownership patterns, to more precisely identify the mechanisms driving our results.

Additionally, our study would benefit from examination of longer-term effects and potential adaptation mechanisms. Future research could investigate whether the negative disclosure effects we document persist over time or whether firms eventually adjust their strategies as markets adapt to new regulatory equilibria. Cross-sectional analysis examining which types of firms are most affected by foreign regulatory changes would also provide valuable insights for both theory and practice. Finally, extending this analysis to examine how MiFID affected other aspects of U.S. firms' information environments, such as management guidance, conference call frequency, or social media disclosure, would provide a more

comprehensive understanding of how international regulatory spillovers affect corporate transparency and information asymmetry dynamics.

References

Ajinkya, B., Bhojraj, S., & Sengupta, P. (2005). The association between outside directors, institutional investors, and the properties of management earnings forecasts. Journal of Accounting Research, 43 (3), 343-376.

Balakrishnan, K., Billings, M. B., Kelly, B., & Ljungqvist, A. (2014). Shaping liquidity: On the causal effects of voluntary disclosure. Journal of Finance, 69 (5), 2237-2278.

Beyer, A., Cohen, D. A., Lys, T. Z., & Walther, B. R. (2010). The financial reporting environment: Review of the recent literature. Journal of Accounting and Economics, 50 (2-3), 296-343.

Bushman, R. M., Piotroski, J. D., & Smith, A. J. (2004). What determines corporate transparency? Journal of Accounting Research, 42 (2), 207-252.

Casey, J. P., & Lannoo, K. (2009). The MiFID revolution. European Capital Markets Institute.

Christensen, H. B., Hail, L., & Leuz, C. (2013). Mandatory IFRS reporting and changes in enforcement. Journal of Accounting and Economics, 56 (2-3), 147-177.

Diamond, D. W., & Verrecchia, R. E. (1991). Disclosure, liquidity, and the cost of capital. Journal of Finance, 46 (4), 1325-1359.

Dye, R. A. (2001). An evaluation of essays on disclosure and the disclosure literature in accounting. Journal of Accounting and Economics, 32 (1-3), 181-235.

Ferrarini, G., & Moloney, N. (2012). Reshaping order execution in the EU and the role of interest groups: From MiFID I to MiFID II. European Business Organization Law Review, 13 (4), 557-597.

Healy, P. M., & Palepu, K. G. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. Journal of Accounting and Economics, 31 (1-3), 405-440.

Hirst, D. E., Koonce, L., & Venkataraman, S. (2008). Management earnings forecasts: A review and framework. Accounting Horizons, 22 (3), 315-338.

Houston, J. F., Lev, B., & Tucker, J. W. (2010). To guide or not to guide? Causes and consequences of stopping quarterly earnings guidance. Contemporary Accounting Research, 27 (1), 143-185.

Kasznik, R., & Lev, B. (1995). To warn or not to warn: Management disclosures in the face of an earnings surprise. The Accounting Review, 70 (1), 113-134.

Kim, O., & Verrecchia, R. E. (1994). Market liquidity and volume around earnings announcements. Journal of Accounting and Economics, 17 (1-2), 41-67.

Lambert, R., Leuz, C., & Verrecchia, R. E. (2007). Accounting information, disclosure, and the cost of capital. Journal of Accounting Research, 45 (2), 385-420.

Lang, M. H., & Lundholm, R. J. (1993). Cross-sectional determinants of analyst ratings of corporate disclosures. Journal of Accounting Research, 31 (2), 246-271.

Lennox, C. S., Francis, J. R., & Wang, Z. (2012). Selection models in accounting research. The Accounting Review, 87 (2), 589-616.

Leuz, C. (2010). Different approaches to corporate reporting regulation: How jurisdictions differ and why. Accounting and Business Research, 40 (3), 229-256.

Leuz, C., & Verrecchia, R. E. (2000). The economic consequences of increased disclosure. Journal of Accounting Research, 38 (1), 91-124.

Leuz, C., & Wysocki, P. D. (2016). The economics of disclosure and financial reporting regulation: Evidence and suggestions for future research. Journal of Accounting Research, 54 (2), 525-622.

Miller, G. S. (2002). Earnings performance and discretionary disclosure. Journal of Accounting Research, 40 (1), 173-204.

Moloney, N. (2008). EC Securities Regulation. Oxford University Press.

Rogers, J. L., & Van Buskirk, A. (2009). Shareholder litigation and changes in disclosure behavior. Journal of Accounting and Economics, 47 (1-2), 136-156.

Ross, S. A. (1977). The determination of financial structure: The incentive-signalling approach. The Bell Journal of Economics, 8 (1), 23-40.

Shroff, N., Verdi, R. S., & Yu, G. (2013). Information environment and the investment decisions of multinational corporations. The Accounting Review, 89 (2), 759-790.

Skinner, D. J. (1994). Why firms voluntarily disclose bad news. Journal of Accounting Research, 32 (1), 38-60.

Spence, M. (1973). Job market signaling. The Quarterly Journal of Economics, 87 (3), 355-374.

Verrecchia, R. E. (2001). Essays on disclosure. Journal of Accounting and Economics, 32 (1-3), 97-180.

Wasley, C. E., & Wu, J. S. (2006). Why do managers voluntarily issue cash flow forecasts? Journal of Accounting Research, 44 (2), 389-429.

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.

	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 MiFID European Union 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
R²	0.0019	0.2547	0.8531

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