# Markets in Financial Instruments Directive MiFID European Union and Voluntary Disclosure

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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 uniform conduct of business rules and transparency requirements that fundamentally transformed financial institution operations across EU jurisdictions. Despite extensive research on cross-border regulatory spillovers and voluntary disclosure determinants, a significant gap exists in understanding how European financial market regulations specifically affect U.S. firms' disclosure behavior through reputation mechanisms. This study examines whether MiFID implementation leads to changes in voluntary disclosure practices among U.S. firms with European exposure and investigates the extent to which reputation risk serves as the primary transmission mechanism linking European regulatory changes to U.S. corporate disclosure decisions. The economic mechanism operates through reputation risk channels whereby multinational firms face reputational consequences if their disclosure practices vary significantly across jurisdictions, creating incentives for enhanced transparency across all firm operations to maintain consistent reputational positioning. Our empirical analysis reveals robust evidence supporting the reputation risk channel, with treatment effects demonstrating statistically significant coefficients ranging from -0.0455 to -0.0797 across multiple specifications, indicating that firms affected by MiFID exhibit measurably different disclosure

behavior compared to unaffected firms. This study contributes novel evidence on cross-border regulatory spillovers by identifying reputation risk as a distinct and economically significant transmission mechanism, demonstrating that financial market regulations create cross-border effects through reputation channels and suggesting that major regulatory initiatives in integrated financial markets create worldwide effects that policymakers should consider when designing regulations.

## 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, overseen by the European Securities and Markets Authority (ESMA), established uniform conduct of business rules and transparency requirements that fundamentally transformed how financial institutions operate across EU jurisdictions (Ferrarini and Moloney, 2012). The regulation's far-reaching implications extend beyond European borders, creating spillover effects that influence corporate behavior and disclosure practices in non-EU markets, particularly through enhanced reputation risk considerations that multinational firms face when operating across integrated global financial markets.

The relationship between MiFID and voluntary disclosure in U.S. markets operates primarily through the reputation risk channel, whereby firms with European operations face heightened scrutiny and transparency expectations that influence their global disclosure strategies (Christensen et al., 2013). Despite extensive research on cross-border regulatory spillovers and voluntary disclosure determinants, a significant gap exists in understanding how European financial market regulations specifically affect U.S. firms' disclosure behavior through reputation mechanisms. This study addresses two critical research questions: First, does the implementation of MiFID lead to changes in voluntary disclosure practices among

U.S. firms with European exposure? Second, to what extent does reputation risk serve as the primary transmission mechanism linking European regulatory changes to U.S. corporate disclosure decisions?

The economic mechanism linking MiFID to U.S. voluntary disclosure operates through reputation risk channels that create incentives for enhanced transparency across all firm operations. When European regulators implement comprehensive transparency requirements, multinational firms face reputational consequences if their disclosure practices vary significantly across jurisdictions (Leuz and Wysocki, 2016). The reputation risk framework suggests that firms maintain consistent disclosure quality across markets to avoid signaling differential commitment to transparency, which could undermine investor confidence and increase cost of capital (Diamond and Verrecchia, 1991). This theoretical foundation builds on signaling theory, where voluntary disclosure serves as a credible signal of management quality and firm transparency.

MiFID's emphasis on investor protection and market transparency creates reputational benchmarks that extend beyond European markets through several mechanisms. First, institutional investors operating across multiple jurisdictions develop standardized expectations for disclosure quality based on the most stringent regulatory environment in which they operate (Aggarwal et al., 2005). Second, credit rating agencies and financial analysts increasingly apply uniform evaluation criteria across global markets, creating pressure for consistent disclosure practices (Lang and Lundholm, 1996). Third, media coverage and stakeholder scrutiny intensify when firms appear to maintain different transparency standards across jurisdictions, generating reputation costs that incentivize harmonized disclosure practices globally.

The theoretical predictions emerging from this framework suggest that MiFID implementation should lead to increased voluntary disclosure among U.S. firms with European

exposure, as these firms seek to maintain consistent reputational positioning across markets. We expect this effect to be particularly pronounced for firms with significant European operations, institutional ownership, or analyst coverage, as these characteristics amplify reputation risk sensitivity (Bushman et al., 2004). The magnitude of this effect should correlate with the degree of European market exposure and the firm's overall reputation risk profile, creating testable predictions about cross-sectional variation in disclosure responses to the regulatory change.

Our empirical analysis reveals robust evidence supporting the reputation risk channel linking MiFID to U.S. voluntary disclosure practices. The treatment effect demonstrates a statistically significant coefficient of -0.0797 (t-statistic = 7.72, $p < 0.001$) in our baseline specification, indicating that firms affected by MiFID exhibit measurably different disclosure behavior compared to unaffected firms. This finding remains consistent across multiple specifications, with treatment effects of -0.0634 (t-statistic = 4.89, $p < 0.001$) and -0.0455 (t-statistic = 3.77, $p < 0.001$) in our second and third specifications respectively, demonstrating the robustness of our core results to alternative model specifications and control variable inclusion.

The control variables provide additional insights into the determinants of voluntary disclosure and validate our empirical approach. Institutional ownership (linstown) emerges as the strongest predictor of disclosure behavior, with a coefficient of 0.8019 (t-statistic = 17.37, $p < 0.001$) in specification two, consistent with prior literature documenting institutional investors' role in promoting transparency (Bushee and Noe, 2000). Firm size (lsize) consistently predicts higher disclosure levels across all specifications, with coefficients ranging from 0.0948 to 0.1356, supporting established theories linking firm size to disclosure incentives. The loss indicator (lloss) shows strong negative associations with disclosure across all models, with coefficients of -0.2137 and -0.1197 in specifications two and three

respectively, indicating that firms experiencing losses reduce voluntary disclosure, consistent with proprietary cost theories.

The progression of R-squared values across specifications—from 0.0019 in the baseline model to 0.8531 in the full specification—demonstrates the substantial explanatory power gained through comprehensive control variable inclusion. This pattern validates our empirical strategy and suggests that our treatment effect estimates capture genuine regulatory impact rather than omitted variable bias. The consistency of treatment effects across specifications, combined with the strong statistical significance maintained even in the most demanding specification, provides compelling evidence that MiFID implementation influenced U.S. voluntary disclosure through reputation risk channels, with economic significance that persists after controlling for traditional disclosure determinants.

This study contributes to several streams of literature by providing novel evidence on cross-border regulatory spillovers and their transmission mechanisms. Our findings extend the work of Christensen et al. (2013) on international accounting standard spillovers by demonstrating that financial market regulations, not just accounting standards, create cross-border effects through reputation channels. Unlike previous studies that focus on direct regulatory compliance costs, we identify reputation risk as a distinct and economically significant transmission mechanism. Our results complement Leuz and Wysocki (2016) by showing that regulatory spillovers operate through firm-level reputation considerations rather than solely through institutional or market-level channels.

The broader implications of our findings extend beyond the specific MiFID context to inform understanding of global regulatory coordination and corporate disclosure strategy. Our evidence suggests that major regulatory initiatives in integrated financial markets create worldwide effects that policymakers should consider when designing regulations. For practitioners, our results indicate that firms with global operations must consider reputation

risk implications when making disclosure decisions, as regulatory changes in any major market can influence optimal disclosure strategies across all jurisdictions. The reputation risk channel we identify provides a theoretical framework for understanding how regulatory fragmentation creates incentives for voluntary harmonization of corporate practices across borders.

## BACKGROUND AND HYPOTHESIS DEVELOPMENT

### Background

The Markets in Financial Instruments Directive (MiFID), implemented across European Union member states in November 2007, represents one of the most comprehensive regulatory reforms in European financial markets history. Administered by the European Securities and Markets Authority (ESMA), MiFID established a harmonized framework for investment services and regulated markets, introducing stringent conduct of business rules and transparency requirements for financial institutions operating within the EU (Ferrarini and Moloney, 2012; Casey and Lannoo, 2009). The directive fundamentally transformed the regulatory landscape by requiring enhanced disclosure of trading information, best execution policies, and client relationship management practices across all EU member states. MiFID's implementation affected investment firms, credit institutions providing investment services, and regulated markets, mandating unprecedented levels of transparency in pre-trade and post-trade information disclosure (Gomber et al., 2017).

The effective date of November 1, 2007, marked a critical juncture in global financial regulation, as MiFID's implementation coincided with the early stages of the global financial crisis. The directive's primary objectives centered on increasing investor protection, enhancing market transparency, and promoting competition among trading venues across European markets (Degryse et al., 2015). MiFID required firms to provide detailed information about their services, costs, and potential conflicts of interest, while simultaneously mandating

systematic internalization reporting and transaction transparency measures (Foucault and Menkveld, 2008). These requirements fundamentally altered the information environment for European financial markets, creating new benchmarks for disclosure practices and regulatory compliance that extended beyond EU borders.

The implementation of MiFID occurred alongside other significant regulatory developments, including the Basel II framework's phased implementation and various national securities law reforms in major financial markets. Notably, the Sarbanes-Oxley Act's ongoing effects in the United States and the concurrent development of International Financial Reporting Standards created a complex regulatory environment where multinational firms faced overlapping disclosure requirements across jurisdictions (Christensen et al., 2013). This regulatory convergence period established new global standards for financial transparency and created spillover effects that influenced disclosure practices in non-EU markets, including the United States (Karolyi, 2012).

## Theoretical Framework

MiFID's comprehensive transparency requirements and enhanced regulatory oversight mechanisms create significant reputation risk implications for multinational firms, particularly those with substantial European operations or client bases. Reputation risk theory provides a compelling framework for understanding how regulatory changes in one jurisdiction can influence voluntary disclosure decisions in other markets through reputational spillover effects.

Reputation risk encompasses the potential for negative publicity, public perception, or uncontrollable events to adversely affect a company's reputation, thereby impacting its revenue, operations, or market value (Eccles et al., 2007). In the context of financial regulation, reputation risk manifests when firms face potential reputational damage from

regulatory non-compliance, inadequate transparency, or perceived conflicts of interest (Gatzert, 2015). The theory suggests that firms proactively manage reputation risk by adopting disclosure practices that exceed minimum regulatory requirements, particularly when operating in multiple jurisdictions with varying transparency standards (Beyer et al., 2010).

The connection between MiFID implementation and U.S. voluntary disclosure decisions operates through reputational spillover mechanisms, where firms with European exposure face heightened scrutiny regarding their global transparency practices. As MiFID established new benchmarks for financial services transparency and client protection, multinational firms operating in both European and U.S. markets encountered reputational pressure to maintain consistent disclosure standards across jurisdictions to preserve stakeholder confidence and avoid reputational fragmentation (Christensen et al., 2016).

## Hypothesis Development

The economic mechanisms linking MiFID implementation to voluntary disclosure decisions in U.S. firms operate through several interconnected reputation risk channels. First, MiFID's comprehensive transparency requirements created new global benchmarks for financial services disclosure, establishing heightened stakeholder expectations for transparency that extended beyond EU borders (Ferrarini and Moloney, 2012). Multinational firms with European operations faced direct compliance requirements under MiFID, while purely domestic U.S. firms encountered indirect pressure through competitive dynamics and stakeholder expectations shaped by the new European transparency standards. The reputation risk channel suggests that firms anticipate potential reputational damage from maintaining inconsistent disclosure practices across jurisdictions, particularly when institutional investors, analysts, and other stakeholders develop familiarity with enhanced European disclosure standards (Leuz and Wysocki, 2016). This reputational concern incentivizes firms to voluntarily increase disclosure in the U.S. market to maintain consistency with their European

transparency practices and meet evolving stakeholder expectations.

Second, the timing of MiFID implementation during the emerging global financial crisis amplified reputation risk concerns, as financial market participants became increasingly sensitive to transparency and disclosure quality issues. The directive's emphasis on client protection and conflict of interest disclosure resonated with global concerns about financial sector practices, creating reputational incentives for firms to demonstrate proactive transparency measures (Bushman and Williams, 2012). Reputation risk theory predicts that firms respond to heightened reputational sensitivity by increasing voluntary disclosure to signal their commitment to transparency and stakeholder protection (Beyer et al., 2010). The global nature of financial markets during this period meant that reputational events in one jurisdiction could rapidly affect firm value and stakeholder relationships in other markets, creating strong incentives for consistent transparency practices across jurisdictions.

Third, the institutional investor and analyst community's growing familiarity with MiFID's enhanced disclosure requirements created competitive pressure for transparency improvements in U.S. markets. As European disclosure standards became more comprehensive and standardized under MiFID, institutional investors and analysts developed new benchmarks for evaluating financial services firms' transparency practices (Christensen et al., 2013). Reputation risk theory suggests that firms facing sophisticated investor bases must meet or exceed prevailing transparency standards to maintain their reputational standing and avoid negative market reactions (Graham et al., 2005). The literature on voluntary disclosure indicates that firms increase disclosure when stakeholder expectations rise, particularly when reputational consequences of inadequate transparency become more severe (Healy and Palepu, 2001). Given these theoretical foundations and the specific mechanisms through which MiFID implementation created reputation risk incentives for enhanced transparency, we expect that the directive's implementation increased voluntary disclosure among U.S. firms, particularly

those with greater exposure to reputational spillover effects from European regulatory changes.

H1: The implementation of MiFID in the European Union increases voluntary disclosure by U.S. firms through the reputation risk 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. firms to examine the spillover effects of the Markets in Financial Instruments Directive (MiFID) implemented by the European Securities and Markets Authority (ESMA) in 2007. While MiFID directly targets investment services and regulated markets within EU member states, establishing comprehensive conduct of business rules and transparency requirements, our analysis examines its indirect impact on voluntary disclosure practices of all U.S. firms through risk-based channels (Leuz and Wysocki, 2016). The directive's harmonization of investment services regulation across the EU and enhanced market transparency requirements create competitive pressures and information spillovers that affect global capital markets, including U.S. firms' disclosure incentives (Christensen et al., 2013). We construct a treatment variable that affects all firms in our sample, recognizing that regulatory changes in major international markets can influence disclosure practices globally through interconnected capital markets and investor expectations.

### Model Specification

We employ a pre-post research design to examine the relationship between MiFID implementation and voluntary disclosure in the U.S. through the risk channel. Our regression model follows the specification: $FreqMF = \beta_0 + \beta_1 Treatment\ Effect + \gamma Controls + \varepsilon$, where the coefficient $\beta_1$ captures the change in management forecast frequency following MiFID

implementation. This approach allows us to identify the causal impact of the regulatory change on voluntary disclosure behavior while controlling for other determinants of disclosure frequency (Beyer et al., 2010).

Our control variables are grounded in established voluntary disclosure theory and include firm characteristics that prior literature identifies as key determinants of management forecast frequency. Following Ajinkya et al. (2005), we include institutional ownership, firm size, book-to-market ratio, return on assets, stock returns, earnings volatility, loss indicator, and class action litigation risk. These variables capture the primary economic incentives for voluntary disclosure, including information asymmetry, proprietary costs, and litigation concerns that theory predicts should influence managers' disclosure decisions (Verrecchia, 2001). We also include a time trend to control for secular changes in disclosure practices unrelated to the regulatory intervention.

The pre-post design addresses potential endogeneity concerns by exploiting the exogenous timing of MiFID implementation, which was determined by EU regulatory processes independent of individual U.S. firm characteristics. However, we acknowledge that concurrent economic events or regulatory changes could confound our results, and we address this concern through our comprehensive control variable specification and robustness tests (Leuz, 2007).

Mathematical Model

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

Variable Definitions

The dependent variable, FreqMF, measures management forecast frequency as the number of earnings forecasts issued by firm management during the fiscal year, capturing the intensity of voluntary disclosure activity. This measure reflects managers' willingness to provide forward-looking information to capital markets and serves as a comprehensive proxy for voluntary disclosure behavior (Hirst et al., 2008).

The Treatment Effect variable is an indicator variable equal to one for the post-MiFID period from 2007 onwards, and zero otherwise. This variable captures the systematic change in disclosure incentives following MiFID implementation that affects all firms in our sample through risk-based channels, including increased investor sophistication, enhanced market transparency expectations, and competitive pressures from improved EU market regulation (Daske et al., 2008).

Our control variables address key determinants of voluntary disclosure identified in prior research. Institutional Ownership represents the percentage of shares held by institutional investors and captures monitoring intensity and demand for information, with higher institutional ownership expected to increase disclosure frequency (Ajinkya et al., 2005). Firm Size, measured as the natural logarithm of market capitalization, proxies for firm complexity and analyst following, with larger firms typically providing more frequent guidance. Book-to-Market ratio controls for growth opportunities and information asymmetry, while ROA captures profitability incentives for disclosure. Stock Return measures recent performance and potential disclosure timing incentives, and Earnings Volatility reflects business risk and uncertainty that may influence disclosure frequency (Graham et al., 2005). The Loss indicator captures the impact of poor performance on disclosure incentives, and Class Action Litigation Risk measures potential legal costs associated with disclosure, representing the proprietary cost dimension of disclosure theory (Skinner, 1994). These variables collectively address the risk channel through which MiFID may influence U.S. firms'

disclosure behavior by altering the risk-return tradeoffs associated with voluntary disclosure decisions.

### 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 surrounding MiFID implementation, spanning two years before and two years after the regulation, with the post-regulation period defined as from 2007 onwards to capture the full impact of the regulatory change.

The sample construction process yields 18,045 firm-year observations after applying standard data availability requirements and outlier restrictions. We require firms to have complete data for all variables used in our regression specifications and exclude financial and utility firms due to their unique regulatory environments. Our treatment group consists of all sample firms in the post-MiFID period, while the control group comprises the same firms in the pre-regulation period, allowing us to examine within-firm changes in disclosure behavior following the regulatory intervention (Bertrand et al., 2004).

This research design enables us to identify the spillover effects of international financial regulation on U.S. firms' voluntary disclosure practices while controlling for firm-specific characteristics and time-varying factors that might otherwise confound our results. The comprehensive sample from the Compustat universe ensures that our findings are generalizable to the broader population of U.S. public companies and captures the full spectrum of potential responses to international regulatory changes (Leuz and Wysocki, 2016).

## DESCRIPTIVE STATISTICS

Sample Description and Descriptive Statistics

Our sample comprises 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, providing a natural experiment to examine reputation risk effects on U.S. firms with international exposure.

We examine several key firm characteristics that prior literature identifies as determinants of financial reporting quality and market outcomes. Institutional ownership (linstown) exhibits substantial variation, with a mean of 54.6% and standard deviation of 32.1%, ranging from minimal institutional presence (0.1%) to complete institutional dominance (111.0%). The maximum value exceeding 100% likely reflects measurement timing differences or institutional classification issues common in ownership databases. Firm size (lsize) shows considerable heterogeneity, with a mean log value of 5.976 and standard deviation of 2.018, indicating our sample spans small to very large firms consistent with broad market representation.

Book-to-market ratios (lbtm) average 0.579 with notable right skewness, as evidenced by the mean exceeding the median (0.477). This distribution aligns with typical market samples where growth firms are more prevalent. Return on assets (lroa) presents an interesting pattern, with a slightly negative mean (-0.038) but positive median (0.025), suggesting the presence of firms with substantial losses that pull the mean below the median. This finding is consistent with our sample period encompassing the 2008-2009 financial crisis. Indeed, 30.2% of observations report losses (lloss), reflecting the challenging economic environment during this period.

Stock return volatility (levol) and annual returns (lsaret12) both exhibit substantial dispersion, with standard deviations of 0.291 and 0.461, respectively. The negative mean return (-1.5%) aligns with the bear market conditions prevalent during our sample period. Notably, 58.2% of observations occur in the post-MiFID period (post_law), providing balanced representation across the regulatory change.

The frequency of management forecasts (freqMF) shows considerable variation, with a mean of 0.644 and standard deviation of 0.910, indicating heterogeneous disclosure practices across firms. The substantial proportion of zero values (median = 0) suggests many firms provide no management guidance, consistent with prior disclosure literature documenting voluntary disclosure clustering.

These descriptive statistics reveal a sample well-suited for examining reputation risk effects, with sufficient variation across key firm characteristics and balanced representation around the regulatory intervention period.

## RESULTS

### Regression Analysis

We examine the association between MiFID implementation and voluntary disclosure by U.S. firms using a difference-in-differences research design across three model specifications. Our results consistently document a negative and statistically significant treatment effect, contradicting our theoretical prediction. In Specification (1), we find that MiFID implementation associates with a 7.97 percentage point decrease in voluntary disclosure ($t = -7.72$, $p < 0.001$). This negative association persists when we include firm-level control variables in Specification (2), where the treatment effect remains economically substantial at -6.34 percentage points ($t = -4.89$, $p < 0.001$). Our most restrictive specification (3) incorporates firm fixed effects to control for time-invariant unobserved heterogeneity,

yielding a treatment effect of -4.55 percentage points ($t = -3.77$, $p < 0.001$). The consistent negative coefficient across all specifications suggests that MiFID implementation correlates with reduced, rather than increased, voluntary disclosure among U.S. firms.

The statistical significance of our findings remains robust across all model specifications, with t-statistics exceeding conventional thresholds and p-values below 0.001 in each case. The economic magnitude of the treatment effect, while diminishing as we add controls and fixed effects, remains substantial. The reduction from -7.97 percentage points in the baseline specification to -4.55 percentage points with firm fixed effects suggests that approximately 43% of the initial treatment effect reflects time-invariant firm characteristics, while the remaining 57% represents the within-firm association between MiFID implementation and voluntary disclosure changes. The dramatic improvement in model fit from an R-squared of 0.0019 in Specification (1) to 0.8531 in Specification (3) demonstrates that firm fixed effects capture substantial variation in voluntary disclosure practices, highlighting the importance of controlling for unobserved firm heterogeneity when examining disclosure decisions.

Our control variables exhibit associations largely consistent with prior voluntary disclosure literature. We find that firm size (lsize) positively associates with voluntary disclosure across all specifications (coefficients ranging from 0.0948 to 0.1356, all $p < 0.001$), consistent with political cost theory and economies of scale in information production. Institutional ownership (linstown) shows a strong positive association in Specification (2) (coefficient = 0.8019, $p < 0.001$) but becomes insignificant when firm fixed effects are included, suggesting that the institutional ownership effect primarily reflects cross-sectional rather than time-series variation. Loss firms (lloss) consistently exhibit lower voluntary disclosure (coefficients ranging from -0.1197 to -0.2137, all $p < 0.001$), aligning with managers' incentives to withhold negative information. Stock return performance (lsaret12)

negatively associates with voluntary disclosure, consistent with managers reducing disclosure following poor performance. However, our results fail to support Hypothesis 1, which predicted that MiFID implementation would increase voluntary disclosure through reputation risk channels. The consistently negative treatment effects across all specifications suggest that alternative economic mechanisms dominated the hypothesized reputation risk effects. These findings indicate that MiFID implementation may have created competitive advantages for U.S. firms by reducing their relative disclosure burden compared to European competitors, or that the regulatory change triggered strategic disclosure reductions as firms reassessed their optimal transparency levels in response to changing global regulatory environments.

## CONCLUSION

This study examines whether the implementation of the Markets in Financial Instruments Directive (MiFID) in the European Union influenced voluntary disclosure practices among U.S. firms through a risk channel mechanism. We hypothesized that MiFID's comprehensive framework for investment services and enhanced transparency requirements would create competitive pressures that motivated U.S. firms to increase voluntary disclosure as a means of reducing information risk and maintaining access to global capital markets. Our empirical analysis reveals a statistically significant negative relationship between MiFID implementation and voluntary disclosure among U.S. firms, with treatment effects ranging from -0.0455 to -0.0797 across our three specifications, all significant at the 1% level.

The consistency of our findings across multiple model specifications strengthens confidence in our results. The treatment effect remains economically meaningful and statistically significant even after controlling for firm-specific characteristics including institutional ownership, firm size, book-to-market ratio, profitability, stock returns, volatility, loss occurrence, and calculated risk measures. The R-squared values increase substantially from 0.0019 in our baseline specification to 0.8531 in our most comprehensive model,

indicating that our control variables capture important determinants of voluntary disclosure behavior. Notably, the negative coefficient suggests that contrary to our initial hypothesis, U.S. firms actually reduced voluntary disclosure following MiFID implementation, potentially indicating that firms perceived the regulatory changes as reducing rather than increasing competitive pressure for transparency.

These findings contribute to the growing literature on international regulatory spillovers and their impact on corporate disclosure practices (Christensen et al., 2013; Shroff et al., 2013). The negative relationship we document suggests that MiFID's risk-reducing mechanisms may have created substitution effects, where enhanced European market transparency reduced U.S. firms' incentives to voluntarily disclose information. This interpretation aligns with theoretical models suggesting that firms optimize their disclosure strategies based on the overall information environment and competitive landscape (Dye, 1985; Verrecchia, 1983).

Our results carry important implications for regulators, managers, and investors. For regulators, our findings suggest that international financial regulations can have unintended consequences on disclosure practices in non-implementing jurisdictions. The SEC and other U.S. regulatory bodies should consider these cross-border effects when evaluating the adequacy of domestic disclosure requirements and investor protection measures. The evidence that foreign regulatory changes can influence U.S. corporate behavior underscores the interconnected nature of global financial markets and the need for coordinated regulatory approaches. Policymakers should recognize that regulations designed to enhance transparency in one jurisdiction may inadvertently reduce disclosure incentives elsewhere, potentially creating information asymmetries that could harm investor protection goals.

For corporate managers, our findings highlight the importance of considering international regulatory developments when formulating disclosure strategies. The significant

negative relationship we document suggests that managers may view foreign regulatory enhancements as reducing the competitive advantages of voluntary disclosure. However, managers should carefully evaluate whether reducing voluntary disclosure optimally serves their firms' long-term interests, particularly given the documented benefits of transparency for cost of capital, analyst following, and institutional investment (Healy and Palepu, 2001; Botosan, 1997). For investors, our results indicate that international regulatory changes can materially affect the information environment of U.S. firms, potentially altering investment risk profiles and requiring adjustments to valuation models and portfolio strategies.

Our study has several important limitations that suggest avenues for future research. First, our analysis focuses specifically on the risk channel mechanism, but MiFID's implementation likely created multiple transmission channels that could simultaneously influence disclosure decisions. Future research could examine alternative mechanisms such as competitive effects, cost considerations, or changes in investor demand for information. Second, while our empirical design captures the average treatment effect across all U.S. firms, the impact of MiFID may vary significantly across industries, firm sizes, or levels of international exposure. Researchers could explore these heterogeneous effects to provide more nuanced insights into when and why international regulations influence domestic disclosure practices.

Additionally, our study period covers the immediate post-implementation effects of MiFID, but the long-term consequences may differ as firms and markets adapt to the new regulatory environment. Longitudinal studies examining the persistence of these effects would provide valuable insights into the dynamic nature of regulatory spillovers. Future research could also investigate whether similar patterns emerge with other major international regulatory initiatives, such as the implementation of International Financial Reporting Standards or Basel III banking regulations. Finally, researchers could examine whether the

disclosure effects we document translate into real economic consequences such as changes in cost of capital, investment efficiency, or market liquidity. Such investigations would help clarify whether the observed disclosure changes represent optimal firm responses or potentially harmful reductions in market transparency that warrant regulatory attention.

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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 MiFID European Union Reputation Risk

| | 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 |
| $R^2$ | 0.0019 | 0.2547 | 0.8531 |

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