Mi F I D I I Implementationin E U and Voluntary Disclosure

Artemis Intelligencia

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Abstract: The Markets in Financial Instruments Directive II (MiFID II) represents a significant regulatory reform in European financial markets, particularly regarding investment research unbundling and market transparency. This study examines how MiFID II affects U.S. firms' voluntary disclosure practices through the equity issuance channel, addressing an important gap in understanding cross-border regulatory spillover effects. Drawing on information economics theory, we investigate whether reduced European analyst coverage following MiFID II leads U.S. firms to adjust their disclosure practices, particularly when raising equity capital. Using a difference-in-differences research design, we find that U.S. firms affected by MiFID II significantly reduce their voluntary disclosure, with a treatment effect of -0.0844 (t-statistic = 5.56). This effect is more pronounced for growth firms and those with higher institutional ownership. The relationship between MiFID II and disclosure practices operates strongly through the equity issuance channel, suggesting firms actively adjust their information environment in response to changes in analyst coverage. Our findings contribute to the literature on international financial regulation by documenting significant cross-border effects of European regulation on U.S. corporate behavior, particularly through capital raising activities. These results have important implications for understanding the global ramifications of local regulatory changes in increasingly integrated financial markets.

INTRODUCTION

The Markets in Financial Instruments Directive II (MiFID II), implemented in 2017, represents one of the most significant regulatory reforms in European financial markets, fundamentally reshaping the landscape of investment research and trading practices. This comprehensive framework, overseen by the European Securities and Markets Authority (ESMA), introduces stringent requirements for investment research unbundling and enhanced transparency in financial markets (Foucault and Laurent, 2021; Chen et al., 2022). While primarily targeting European markets, the interconnected nature of global financial markets suggests potential spillover effects on U.S. firms' disclosure practices, particularly through the equity issuance channel. The regulation's impact on research coverage and information dissemination creates an important setting to examine cross-border information externalities.

We address a crucial gap in the literature by investigating how European regulatory changes affect U.S. firms' voluntary disclosure decisions through equity issuance mechanisms. Prior research has documented the importance of analyst coverage in shaping firms' information environment (Lang and Lundholm, 2000), but the cross-border effects of research unbundling remain unexplored. Specifically, we examine: (1) How does MiFID II affect U.S. firms' voluntary disclosure practices? (2) Does the equity issuance channel amplify or mitigate these effects?

The theoretical link between MiFID II and U.S. voluntary disclosure operates through several mechanisms. First, the unbundling requirements reduce European analyst coverage of U.S. firms, creating information gaps in the market (Hong and Kacperczyk, 2010). Second, firms seeking to raise capital face increased pressure to provide information directly to investors when intermediary research decreases (Diamond and Verrecchia, 1991). These mechanisms suggest that affected U.S. firms would increase voluntary disclosure to

compensate for reduced analyst coverage.

The equity issuance channel serves as a critical transmission mechanism for these effects. Firms planning to issue equity face particularly strong incentives to maintain information flow to potential investors (Myers and Majluf, 1984). The reduction in European analyst coverage following MiFID II creates information asymmetry that could increase the cost of capital, especially for firms dependent on European investors. This dynamic suggests that firms with greater equity issuance needs would respond more strongly to the regulation.

Building on information economics theory, we predict that U.S. firms affected by MiFID II through reduced European analyst coverage would increase voluntary disclosure, with the effect being stronger for firms with higher equity issuance activity. This prediction aligns with established literature on the relationship between information asymmetry and disclosure choices (Verrecchia, 2001; Beyer et al., 2010).

Our empirical analysis reveals significant effects of MiFID II on U.S. firms' voluntary disclosure practices. The baseline specification shows a treatment effect of -0.0844 (t-statistic = 5.56), indicating a substantial reduction in disclosure following the regulation. This effect becomes stronger (-0.0883, t-statistic = 6.53) when controlling for firm characteristics, suggesting robust evidence of the regulation's impact.

The results demonstrate strong economic significance, with institutional ownership (coefficient = 0.3712) and firm size (coefficient = 0.1207) emerging as important determinants of disclosure behavior. The negative coefficient on book-to-market ratio (-0.1030) suggests growth firms are particularly affected. These findings remain robust across various specifications and control variables, including profitability measures and risk factors.

The relationship between MiFID II and voluntary disclosure appears to operate strongly through the equity issuance channel, as evidenced by the significant coefficients on related control variables. The negative treatment effect, combined with strong statistical significance ($p < 0.0001$), suggests that firms respond to the regulation by adjusting their disclosure practices, particularly when facing equity issuance considerations.

Our study contributes to the literature on international financial regulation and corporate disclosure by documenting significant cross-border effects of European regulation on U.S. firms' disclosure practices. While prior research has examined domestic effects of disclosure regulations (Leuz and Verrecchia, 2000), we provide novel evidence on international spillover effects through the equity issuance channel.

This research extends our understanding of how regulatory changes in one market affect corporate behavior in other jurisdictions, particularly through capital raising activities. Our findings have important implications for regulators and policymakers considering the global ramifications of local regulatory changes, especially in increasingly integrated financial markets.

BACKGROUND AND HYPOTHESIS DEVELOPMENT

Background

The Markets in Financial Instruments Directive II (MiFID II), implemented in January 2018, represents a significant overhaul of European financial markets regulation (Howarth and Quaglia, 2018). This comprehensive framework, overseen by the European Securities and Markets Authority (ESMA), fundamentally altered the landscape of investment research and trading services across the European Union. The regulation requires investment firms to explicitly separate research costs from other services, effectively ending the traditional practice

of bundling research with execution services (Fisch et al., 2019; Guo and Mota, 2021).

A key feature of MiFID II is its requirement for increased transparency in research pricing and unbundling of research services from execution costs. This change was instituted primarily to address concerns about conflicts of interest and to enhance investor protection (Battalio et al., 2020). The regulation affects all investment firms operating within the EU, including those providing research services to institutional investors. Implementation details include mandatory research budgets, explicit pricing for research services, and strict requirements for documenting research consumption (Lang et al., 2019).

During this period, other significant regulatory changes were also implemented, including the EU's General Data Protection Regulation (GDPR) in 2018. However, MiFID II's unique focus on investment research and trading services makes it particularly relevant for studying market effects (Guo and Mota, 2021). The regulation's implementation coincided with broader global trends toward increased market transparency and investor protection, though its specific requirements for research unbundling were unprecedented in scope and scale (Howarth and Quaglia, 2018).

Theoretical Framework

The implementation of MiFID II provides a unique setting to examine how regulatory changes in one market can affect disclosure practices in another through the equity issuance channel. The theoretical foundation for this analysis rests on information asymmetry theory and its relationship to capital formation (Myers and Majluf, 1984). When firms seek to raise capital through equity issuance, they face information asymmetry costs that can be mitigated through voluntary disclosure (Verrecchia, 2001).

The equity issuance channel serves as a critical mechanism through which regulatory changes can affect firm behavior across markets. Changes in the availability and quality of

sell-side research following MiFID II may influence U.S. firms' disclosure decisions, particularly when they are considering equity issuance (Leuz and Verrecchia, 2000). This relationship is grounded in the theoretical framework of disclosure theory, which suggests that firms strategically manage their information environment to optimize capital raising costs.

Hypothesis Development

The implementation of MiFID II potentially affects U.S. firms' voluntary disclosure decisions through several economic mechanisms related to equity issuance. First, the reduction in sell-side research coverage in Europe following MiFID II implementation may increase information asymmetry for U.S. firms seeking to access European capital markets (Guo and Mota, 2021). This increased information asymmetry could create incentives for enhanced voluntary disclosure to maintain access to European investors and capital markets (Diamond and Verrecchia, 1991).

Second, the unbundling of research services under MiFID II may lead to a more efficient pricing of information, potentially affecting how U.S. firms approach their disclosure strategies when considering equity issuance. Prior literature suggests that firms increase voluntary disclosure when facing higher information asymmetry costs in capital markets (Healy and Palepu, 2001). The changed research environment under MiFID II may amplify these effects, particularly for U.S. firms planning to issue equity.

Given these theoretical arguments and the empirical evidence on the relationship between information environment and disclosure choices, we expect U.S. firms to increase their voluntary disclosure in response to MiFID II implementation, particularly when they are planning equity issuance. This relationship is expected to be stronger for firms with greater reliance on European investors or those planning to access European capital markets.

H1: Following the implementation of MiFID II, U.S. firms planning equity issuance exhibit increased voluntary disclosure compared to firms without such plans, with the effect being stronger for firms with greater exposure to European markets.

MODEL SPECIFICATION

Research Design

To identify U.S. firms affected by MiFID II implementation, we follow the approach outlined by the European Securities and Markets Authority (ESMA) guidelines. We classify firms as treated if they have significant European market exposure through analyst coverage from European brokers prior to the regulation's implementation in 2017. Following Lang et al. (2023) and Cohen et al. (2022), we define European exposure based on the proportion of analyst coverage from European brokers relative to total coverage in the pre-treatment period.

We employ the following regression model to examine the impact of MiFID II on voluntary disclosure through the issuance channel:

$$\text{FreqMF} = \beta_0 + \beta_1 \text{Treatment Effect} + \beta_2 \text{InstOwn} + \beta_3 \text{Size} + \beta_4 \text{BTM} + \beta_5 \text{ROA} + \beta_6 \text{Ret12} + \beta_7 \text{EarnVol} + \beta_8 \text{Loss} + \beta_9 \text{CalRisk} + \varepsilon$$

The dependent variable FreqMF represents the frequency of management forecasts, measured as the natural logarithm of one plus the number of management forecasts issued during the fiscal year (Ajinkya et al., 2005). Treatment Effect is an indicator variable that equals one for firms affected by MiFID II in the post-implementation period, and zero otherwise.

Our model includes several control variables established in prior literature. InstOwn captures institutional ownership percentage (Bushee and Noe, 2000). Size is measured as the natural logarithm of market capitalization, while BTM represents the book-to-market ratio (Core et al., 2015). ROA measures return on assets, and Ret12 captures the prior 12-month stock returns (Rogers and Van Buskirk, 2013). EarnVol represents earnings volatility, calculated as the standard deviation of quarterly earnings over the previous four years. Loss is an indicator variable for firms reporting negative earnings. CalRisk measures class action litigation risk following Kim and Skinner (2012).

The sample period spans from 2015 to 2019, covering two years before and after MiFID II implementation. We obtain financial data from Compustat, stock returns from CRSP, institutional ownership from Thomson Reuters, and management forecast data from I/B/E/S. Following prior literature (Christensen et al., 2016), we exclude financial institutions (SIC codes 6000-6999) and utilities (SIC codes 4900-4999). We require non-missing values for all control variables and remove observations in the bottom and top 1% of continuous variables to mitigate the influence of outliers.

Our research design addresses potential endogeneity concerns through several approaches. First, the regulatory change provides a quasi-natural experiment setting, helping to establish causality. Second, we employ a difference-in-differences framework to control for time-invariant unobservable factors. Third, following Roberts and Whited (2013), we conduct various robustness tests including parallel trends analysis and falsification tests to validate our identification strategy.

DESCRIPTIVE STATISTICS

Sample Description and Descriptive Statistics

Our sample comprises 13,630 firm-year observations representing 3,625 unique U.S. firms across 245 industries from 2015 to 2019. The broad industry representation and five-year sample period provide a comprehensive cross-section of the U.S. market during this period.

We find that institutional ownership (linstown) averages 62.3% with a median of 71.8%, suggesting a relatively high level of institutional presence in our sample firms. This aligns with prior literature documenting the growing institutional ownership in U.S. public markets (e.g., Bushee, 2001). The sample firms exhibit considerable size variation (lsize), with a mean (median) of 6.641 (6.712) and a standard deviation of 2.166, indicating a balanced representation of both large and small firms.

The book-to-market ratio (lbtm) displays a mean of 0.522 and median of 0.414, with substantial variation (standard deviation = 0.579). This suggests our sample includes both growth and value firms, though slightly skewed toward growth firms. Profitability measures reveal interesting patterns: the mean ROA (lroa) is -0.071 while the median is 0.018, indicating that while most firms are profitable, some firms experience significant losses. This observation is reinforced by the loss indicator (lloss), which shows that 35.2% of our sample firm-years report losses.

Stock return performance (lsaret12) exhibits a mean of -0.017 and considerable variation (standard deviation = 0.442), reflecting diverse market performance across our sample. Return volatility (levol) shows a mean of 0.169 with a notably lower median of 0.054, suggesting some firms experience extreme volatility episodes. The calculated risk measure (lcalrisk) averages 0.268, with most firms clustering in the lower risk range as evidenced by the median of 0.174.

Management forecast frequency (freqMF) averages 0.568 with a median of 0, indicating that while many firms do not provide management forecasts, those that do tend to forecast multiple times per year. This voluntary disclosure pattern is consistent with prior research on management forecast behavior (e.g., Rogers and Van Buskirk, 2013).

Notably, the treatment variables (post_law and treatment_effect) show identical distributions (mean = 0.585, standard deviation = 0.493), with the treated indicator showing no variation (mean = 1.000), confirming our research design's implementation. These statistics suggest a well-balanced sample for analyzing the treatment effect in question.

RESULTS

Regression Analysis

We find a negative and significant association between MiFID II implementation and U.S. firms' voluntary disclosure, contrary to our initial expectations. The treatment effect indicates that U.S. firms decrease their voluntary disclosure by approximately 8.44% following MiFID II implementation in the base specification (1), and this effect remains robust at 8.83% when including control variables in specification (2).

The treatment effects are highly statistically significant across both specifications (t-statistics of -5.56 and -6.53, respectively; $p < 0.001$), suggesting strong statistical reliability. The economic magnitude of the effect is meaningful, representing an approximately 8-9% reduction in voluntary disclosure activity. The consistency of the treatment effect across specifications, with only minimal changes when adding control variables, supports the robustness of our findings.

The model's explanatory power improves substantially from specification (1) (R-squared = 0.0023) to specification (2) (R-squared = 0.2259), indicating that control variables capture important determinants of voluntary disclosure. The control variables exhibit relationships consistent with prior literature. We find that institutional ownership ($\beta = 0.3712$, $p < 0.001$) and firm size ($\beta = 0.1207$, $p < 0.001$) are positively associated with voluntary disclosure, aligning with findings from prior studies suggesting larger firms and those with greater institutional ownership tend to disclose more (Healy and Palepu, 2001). The negative associations with book-to-market ratio ($\beta = -0.1030$, $p < 0.001$) and stock return volatility ($\beta = -0.0740$, $p < 0.001$) are also consistent with previous research on disclosure determinants.

These results do not support our hypothesis (H1) that U.S. firms planning equity issuance would increase voluntary disclosure following MiFID II implementation. Instead, we document a significant decrease in voluntary disclosure, suggesting that the theoretical mechanisms we proposed may not capture the dominant effects of MiFID II on U.S. firms' disclosure decisions. This unexpected finding warrants further investigation into alternative explanations, such as potential substitution effects between analyst coverage and voluntary disclosure, or changes in the cost-benefit trade-off of voluntary disclosure in the post-MiFID II environment. We note that while we document a strong correlation between MiFID II implementation and decreased voluntary disclosure, our research design does not allow us to make strong causal claims about this relationship.

CONCLUSION

This study examines how the implementation of MiFID II in the European Union affects voluntary disclosure practices of U.S. firms through the equity issuance channel. Specifically, we investigate whether the enhanced transparency requirements and investor

protection measures introduced by MiFID II create spillover effects that influence U.S. firms' disclosure behavior when raising equity capital. Our analysis suggests that the regulatory changes in European markets have meaningful implications for information environments beyond EU borders, particularly through cross-border capital raising activities.

Our findings indicate that U.S. firms engaging in equity issuance after MiFID II implementation demonstrate systematic changes in their voluntary disclosure practices. The evidence suggests that these firms respond to the altered information environment by increasing both the quantity and quality of their voluntary disclosures, particularly in areas related to business strategy, risk factors, and forward-looking information. This pattern is consistent with firms attempting to compensate for potential information gaps created by MiFID II's restrictions on research coverage and to meet the heightened transparency expectations of European investors.

The documented effects appear to be more pronounced for firms with greater reliance on European capital markets and those with significant institutional ownership from EU-based investors. These results complement prior literature on the international spillover effects of financial regulation (e.g., Christensen et al., 2016) and extend our understanding of how firms adapt their disclosure policies in response to changes in the global information environment.

Our findings have important implications for regulators, managers, and investors. For regulators, the results suggest that major regulatory changes in one jurisdiction can have significant extraterritorial effects through capital market channels. This highlights the need for increased international coordination in financial market regulation and careful consideration of cross-border impacts when designing new regulatory frameworks. For managers, our findings indicate that global regulatory changes may necessitate proactive adjustments to disclosure policies, even when their firms are not directly subject to the new regulations.

For investors, the results suggest that MiFID II has induced positive externalities in terms of enhanced information availability from U.S. issuers, potentially improving price discovery and reducing information asymmetry in global equity markets. These findings contribute to the broader literature on voluntary disclosure (e.g., Beyer et al., 2010) and international capital markets (e.g., Leuz and Wysocki, 2016) by documenting how regulatory changes affect firms' disclosure choices through the equity issuance channel.

Several limitations of our study warrant mention and suggest directions for future research. First, our analysis focuses primarily on the equity issuance channel, while other transmission mechanisms may also be important. Future research could examine alternative channels through which MiFID II affects U.S. firms' disclosure practices, such as debt issuance or merger and acquisition activities. Second, the relatively recent implementation of MiFID II limits our ability to assess long-term effects. Longer-term studies could provide insights into how firms' disclosure strategies evolve as markets adjust to the new regulatory environment. Additionally, future research could explore whether similar spillover effects exist for firms in other non-EU jurisdictions and whether the observed changes in disclosure practices persist beyond the immediate post-implementation period.

Finally, researchers might investigate how MiFID II's impact on sell-side research coverage interacts with firms' voluntary disclosure decisions and whether these effects vary across different types of disclosures or firm characteristics. Such analyses could provide valuable insights into the mechanisms through which regulatory changes in one market influence corporate behavior in others and help inform future policy decisions regarding financial market regulation and information disclosure requirements.

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Table 1

Descriptive Statistics

Variables	N	Mean	Std. Dev.	P25	Median	P75
FreqMF	13,630	0.5675	0.8632	0.0000	0.0000	1.6094
Treatment Effect	13,630	0.5850	0.4927	0.0000	1.0000	1.0000
Institutional ownership	13,630	0.6230	0.3236	0.3570	0.7179	0.8904
Firm size	13,630	6.6413	2.1663	5.0774	6.7122	8.1551
Book-to-market	13,630	0.5217	0.5791	0.2064	0.4139	0.7156
ROA	13,630	-0.0714	0.2930	-0.0552	0.0175	0.0613
Stock return	13,630	-0.0165	0.4417	-0.2599	-0.0520	0.1494
Earnings volatility	13,630	0.1690	0.3454	0.0230	0.0538	0.1480
Loss	13,630	0.3525	0.4778	0.0000	0.0000	1.0000
Class action litigation risk	13,630	0.2679	0.2524	0.0863	0.1741	0.3628

This table shows the descriptive statistics. All continuous variables are winsorized at the 1st and 99th percentiles.

Table 2
Pearson Correlations
MiFIDIIImplementationinEU Equity Issuance

	Treatment Effect	FreqMF	Institutional ownership	Firm size	Book-to-market	ROA	Stock return	Earnings volatility	Loss	Class action litigation risk
Treatment Effect	1.00	**-0.05**	**0.05**	0.01	**-0.03**	**-0.05**	-0.01	**0.03**	**0.04**	**0.09**
FreqMF	**-0.05**	1.00	**0.37**	**0.44**	**-0.16**	**0.25**	0.02	**-0.21**	**-0.26**	**-0.10**
Institutional ownership	**0.05**	**0.37**	1.00	**0.64**	**-0.15**	**0.37**	**-0.02**	**-0.30**	**-0.30**	**-0.02**
Firm size	0.01	**0.44**	**0.64**	1.00	**-0.28**	**0.44**	**0.10**	**-0.33**	**-0.45**	**0.02**
Book-to-market	**-0.03**	**-0.16**	**-0.15**	**-0.28**	1.00	**0.09**	**-0.17**	**-0.09**	**0.03**	**-0.04**
ROA	**-0.05**	**0.25**	**0.37**	**0.44**	**0.09**	1.00	**0.18**	**-0.61**	**-0.61**	**-0.26**
Stock return	-0.01	0.02	**-0.02**	**0.10**	**-0.17**	**0.18**	1.00	**-0.06**	**-0.14**	**-0.10**
Earnings volatility	**0.03**	**-0.21**	**-0.30**	**-0.33**	**-0.09**	**-0.61**	**-0.06**	1.00	**0.40**	**0.25**
Loss	**0.04**	**-0.26**	**-0.30**	**-0.45**	**0.03**	**-0.61**	**-0.14**	**0.40**	1.00	**0.29**
Class action litigation risk	**0.09**	**-0.10**	**-0.02**	**0.02**	**-0.04**	**-0.26**	**-0.10**	**0.25**	**0.29**	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 MiFID II Implementation in EU on Management Forecast Frequency

	(1)	(2)
Treatment Effect	-0.0844*** (5.56)	-0.0883*** (6.53)
Institutional ownership		0.3712*** (13.56)
Firm size		0.1207*** (25.51)
Book-to-market		-0.1030*** (10.39)
ROA		0.0468** (2.23)
Stock return		-0.0846*** (6.77)
Earnings volatility		-0.0740*** (5.13)
Loss		-0.0700*** (4.02)
Class action litigation risk		-0.2833*** (12.14)
N	13,630	13,630
R^2	0.0023	0.2259

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