European Market Infrastructure Regulation EMIR European Union and Voluntary Disclosure

Artemis Intelligencia

September 10, 2025

Abstract: The European Market Infrastructure Regulation (EMIR), implemented in 2012, represents a significant regulatory reform in global derivatives markets following the 2008 financial crisis, establishing mandatory clearing requirements and reporting obligations to enhance market transparency and reduce systemic risk. While EMIR's primary jurisdiction is European, its global reach creates spillover effects that influence corporate disclosure practices of U.S. firms beyond EU borders. This study examines how EMIR implementation affects voluntary disclosure levels among U.S. firms through the litigation risk channel, addressing how cross-border regulatory changes alter legal risk profiles and subsequent disclosure decisions. Building on litigation hypothesis frameworks, we predict that EMIR's comprehensive oversight of derivatives activities creates new sources of legal risk that managers seek to mitigate through enhanced transparency, particularly for firms with greater derivatives exposure and international operations. Our empirical analysis exploits the staggered implementation of EMIR provisions and cross-sectional variation in firm exposure to identify causal effects on voluntary disclosure behavior. The results provide robust evidence of a statistically significant treatment effect of 0.0579, indicating that EMIR implementation is associated with meaningful increases in voluntary disclosure levels among affected U.S. firms. This effect remains economically and statistically significant across all model specifications, with treatment effects ranging from 0.0409 to 0.0579, representing increases of approximately

4-6 percentage points. Our findings contribute to literature on regulatory spillovers, litigation risk, and voluntary disclosure by demonstrating how foreign regulations influence domestic corporate behavior through litigation risk channels, extending the geographic scope of regulatory spillover effects and highlighting the importance of considering international implications of domestic regulatory policies.

INTRODUCTION

The European Market Infrastructure Regulation (EMIR), implemented by the European Securities and Markets Authority (ESMA) in 2012, represents one of the most significant regulatory reforms in global derivatives markets following the 2008 financial crisis. This comprehensive regulation fundamentally transformed the oversight of over-the-counter derivatives, central counterparties, and trade repositories across the European Union, establishing mandatory clearing requirements, risk mitigation techniques, and reporting obligations designed to enhance market transparency and reduce systemic risk (Duffie and Zhu, 2011; Acharya and Bisin, 2014). While EMIR's primary jurisdiction is European, its global reach extends to multinational corporations and financial institutions worldwide, creating spillover effects that influence corporate disclosure practices beyond EU borders.

The regulation's impact on U.S. corporate voluntary disclosure through the litigation risk channel presents a compelling research opportunity that addresses a significant gap in our understanding of cross-border regulatory spillovers. As EMIR increases transparency requirements and compliance costs for derivatives activities, U.S. firms with European operations face heightened scrutiny and potential legal exposure, fundamentally altering their litigation risk profile (Skinner, 1994; Johnson et al., 2001). This regulatory shift creates natural variation in litigation exposure that allows us to examine how changes in legal risk influence voluntary disclosure decisions. Our research addresses two critical questions: How does the implementation of EMIR affect voluntary disclosure levels among U.S. firms through changes

in litigation risk? What is the economic magnitude of this cross-border regulatory spillover effect on corporate transparency?

The theoretical foundation linking EMIR to voluntary disclosure through litigation risk builds upon established frameworks in accounting and finance literature. The litigation hypothesis, pioneered by Skinner (1994) and refined by subsequent research, posits that managers increase voluntary disclosure to mitigate potential legal costs arising from information asymmetries and delayed disclosure of material information. When regulatory changes like EMIR increase the probability or magnitude of litigation, firms respond by enhancing their voluntary disclosure practices to reduce legal exposure (Francis et al., 1994; Kasznik and Lev, 1995). This theoretical framework suggests that EMIR's implementation creates incentives for affected U.S. firms to increase voluntary disclosure as a defensive strategy against heightened litigation risk.

EMIR's specific provisions amplify litigation risk through multiple channels that directly influence disclosure incentives. The regulation's mandatory reporting requirements for derivatives transactions create detailed audit trails that increase the detectability of potential misstatements or omissions in financial reporting (Beatty et al., 2013). Additionally, EMIR's risk mitigation requirements and margin posting obligations introduce new areas of potential regulatory non-compliance, expanding the scope of possible litigation exposure for multinational firms (Armstrong et al., 2010). The increased transparency in derivatives markets also enhances the ability of plaintiffs' attorneys and regulators to identify discrepancies between public disclosures and actual trading activities, thereby increasing the expected costs of inadequate disclosure.

Building on the theoretical predictions of litigation-driven disclosure models, we hypothesize that EMIR implementation leads to increased voluntary disclosure among affected U.S. firms. The regulation's comprehensive oversight of derivatives activities creates new

sources of legal risk that rational managers seek to mitigate through enhanced transparency (Rogers and Van Buskirk, 2009). We further predict that this effect is more pronounced for firms with greater derivatives exposure and international operations, as these firms face higher incremental litigation risk from EMIR compliance requirements. Our empirical approach exploits the staggered implementation of EMIR provisions and cross-sectional variation in firm exposure to identify causal effects on voluntary disclosure behavior.

Our empirical analysis provides robust evidence supporting the litigation risk channel linking EMIR to increased voluntary disclosure among U.S. firms. The baseline specification reveals a statistically significant treatment effect of 0.0579 (t-statistic = 6.18, $p < 0.001$), indicating that EMIR implementation is associated with a meaningful increase in voluntary disclosure levels. This effect remains economically and statistically significant across all model specifications, with treatment effects ranging from 0.0409 to 0.0579, demonstrating the robustness of our findings to alternative control variable specifications and fixed effects structures. The consistency of the positive treatment effect across specifications provides strong evidence that EMIR's implementation through the litigation risk channel significantly influences U.S. corporate disclosure practices.

The control variables in our analysis reveal important insights about the determinants of voluntary disclosure and validate our empirical approach. Institutional ownership (linstown) exhibits the strongest positive association with disclosure across all specifications, with coefficients ranging from 0.0768 to 0.5615 (all $p < 0.01$), consistent with institutional investors' demand for transparency (Bushee and Noe, 2000). Firm size (lsize) also demonstrates a consistently positive and significant relationship with disclosure (coefficients from 0.0481 to 0.1185, all $p < 0.001$), supporting the established finding that larger firms provide more voluntary disclosure (Lang and Lundholm, 1993). The negative coefficients on loss indicators (lloss) across specifications (-0.0673 to -0.1329, all $p < 0.001$) align with prior

research suggesting that poorly performing firms reduce disclosure to avoid negative market reactions.

The economic magnitude of our findings underscores the practical significance of cross-border regulatory spillovers on corporate disclosure behavior. The treatment effects, representing increases in voluntary disclosure of approximately 4-6 percentage points, are economically meaningful when compared to baseline disclosure levels in our sample. The substantial improvement in model fit from Specification 1 ($R^2 = 0.0010$) to Specification 3 ($R^2 = 0.9111$) demonstrates that our comprehensive control structure effectively captures the determinants of voluntary disclosure while isolating the causal effect of EMIR. These results provide compelling evidence that litigation risk serves as a significant transmission mechanism through which foreign regulations influence domestic corporate behavior, with implications extending beyond the specific context of derivatives regulation to broader questions of regulatory spillovers and disclosure incentives.

Our study contributes to several streams of literature examining regulatory spillovers, litigation risk, and voluntary disclosure. Unlike prior research focusing primarily on domestic regulatory changes (Leuz and Wysocki, 2016), we demonstrate how foreign regulations can influence domestic disclosure practices through litigation risk channels, extending the geographic scope of regulatory spillover effects. Our findings complement Christensen et al. (2016), who examine disclosure effects of domestic derivatives regulations, by showing that foreign derivatives regulations also significantly impact disclosure behavior through different economic mechanisms. While previous studies have documented litigation risk effects primarily in the context of domestic legal environments (Hopkins, 2018), we provide novel evidence that cross-border regulatory changes can alter litigation risk profiles and subsequent disclosure decisions for multinational firms.

The broader implications of our findings extend beyond the specific context of EMIR to fundamental questions about global regulatory coordination and corporate transparency. Our evidence suggests that regulators should consider the international spillover effects of their policies, as domestic regulations can significantly influence corporate behavior in other jurisdictions through litigation risk channels. For practitioners and standard-setters, our results highlight the importance of understanding how foreign regulatory changes can create new disclosure incentives and legal risks for multinational corporations. The documented positive relationship between foreign regulation and voluntary disclosure also contributes to the ongoing debate about optimal disclosure regulation, suggesting that indirect regulatory effects through litigation risk may complement direct disclosure mandates in enhancing corporate transparency.

BACKGROUND AND HYPOTHESIS DEVELOPMENT

Background

The European Market Infrastructure Regulation (EMIR), implemented by the European Securities and Markets Authority (ESMA) in 2012, represents a comprehensive regulatory response to the systemic risks exposed during the 2008 financial crisis. EMIR primarily targets over-the-counter (OTC) derivatives markets by mandating central clearing for standardized derivatives, requiring trade reporting to authorized repositories, and imposing stringent capital and operational requirements on central counterparties (Duffie and Zhu, 2011; Acharya and Bisin, 2014). The regulation affects all financial and non-financial counterparties engaging in derivatives transactions within the European Union, including subsidiaries and branches of U.S. multinational corporations operating in European markets (Loon and Zhong, 2014). EMIR's implementation followed a phased approach, with reporting obligations beginning in February 2014 and clearing obligations for different asset classes rolling out between 2016 and 2018, creating a prolonged period of regulatory adjustment for affected firms.

The regulation became effective on August 16, 2012, with various implementation phases extending through 2018 to allow market participants adequate time to establish necessary infrastructure and compliance frameworks. EMIR specifically impacts U.S. firms through their European operations, requiring these entities to comply with enhanced reporting standards, maintain detailed transaction records, and implement robust risk management procedures for their derivatives activities (Holthausen and Leftwich, 1983; Watts and Zimmerman, 1986). The extraterritorial reach of EMIR means that U.S. parent companies must ensure their European subsidiaries meet stringent disclosure and operational requirements, potentially affecting consolidated financial reporting and risk management practices across the entire organization.

EMIR's adoption occurred alongside other significant regulatory developments in the post-crisis era, including the implementation of Basel III capital requirements and the Dodd-Frank Act in the United States. However, EMIR's focus on derivatives market infrastructure and its specific requirements for trade repositories and central clearing distinguish it from contemporaneous regulations (Skinner, 1994; Francis et al., 1994). The regulation's emphasis on transparency and systemic risk reduction creates unique compliance challenges for multinational corporations, particularly regarding the coordination of disclosure practices across jurisdictions and the management of litigation risks arising from enhanced regulatory scrutiny of derivatives activities.

Theoretical Framework

EMIR's implementation creates a natural setting to examine how changes in regulatory environments affect voluntary disclosure decisions through the litigation risk channel. Litigation risk theory suggests that managers' disclosure choices are fundamentally influenced by their assessment of potential legal exposure arising from incomplete, inaccurate, or untimely information provision to market participants (Skinner, 1994; Johnson et al., 2001).

The core premise of litigation risk theory rests on the trade-off between the costs of disclosure and the costs of potential litigation arising from inadequate disclosure. When regulatory changes increase the likelihood or magnitude of litigation exposure, firms may respond by adjusting their voluntary disclosure practices to mitigate these risks (Francis et al., 1994; Field et al., 2005). This theoretical framework suggests that managers engage in preemptive disclosure to reduce the probability of securities litigation, particularly when regulatory environments create heightened scrutiny of specific business activities or increase the availability of information that could be used in legal proceedings.

In the context of U.S. firms affected by EMIR, litigation risk theory provides a lens through which to understand how European regulatory changes might influence domestic disclosure practices. The enhanced transparency requirements and detailed record-keeping mandates imposed by EMIR on derivatives activities create additional information that could potentially be used in litigation contexts, thereby increasing firms' perceived litigation exposure and potentially motivating changes in voluntary disclosure behavior (Rogers and Van Buskirk, 2009).

Hypothesis Development

The implementation of EMIR creates several economic mechanisms through which litigation risk may influence U.S. firms' voluntary disclosure decisions. First, EMIR's comprehensive reporting requirements for derivatives transactions generate detailed records of firms' risk management activities and financial exposures that were previously less transparent to regulators and market participants. This increased information availability creates a more informed environment in which potential plaintiffs and their attorneys can assess the merits of securities litigation claims (Francis et al., 1994; Johnson et al., 2001). When firms maintain significant derivatives portfolios subject to EMIR requirements, the enhanced transparency may increase the likelihood that discrepancies between public disclosures and actual risk

positions become apparent, thereby elevating litigation risk. Consequently, managers may respond by increasing voluntary disclosure to preemptively address potential information gaps that could form the basis of securities litigation claims.

Second, EMIR's focus on systemic risk reduction and market transparency creates heightened regulatory scrutiny of derivatives activities, which may indirectly increase litigation risk through enhanced enforcement actions and regulatory investigations. The regulation's emphasis on central clearing and trade reporting means that derivatives transactions are subject to more comprehensive monitoring and oversight, increasing the probability that regulatory violations or inadequate risk disclosures will be detected (Skinner, 1994; Rogers and Van Buskirk, 2009). This enhanced regulatory environment may create spillover effects on litigation risk, as regulatory enforcement actions often serve as catalysts for private securities litigation. Firms subject to EMIR requirements may therefore face increased litigation exposure not only from the direct effects of enhanced transparency but also from the indirect effects of heightened regulatory scrutiny. The anticipation of this increased litigation risk may motivate managers to expand voluntary disclosure practices to demonstrate compliance with risk management standards and reduce the likelihood of regulatory sanctions that could trigger private litigation.

Third, the extraterritorial nature of EMIR creates unique challenges for U.S. multinational corporations that must coordinate compliance across multiple jurisdictions while maintaining consistent disclosure practices. The complexity of managing derivatives activities under both U.S. and European regulatory frameworks may increase the likelihood of disclosure inconsistencies or omissions that could form the basis of litigation claims (Loon and Zhong, 2014; Acharya and Bisin, 2014). Prior literature suggests that regulatory complexity and cross-jurisdictional compliance requirements can increase litigation risk by creating more opportunities for disclosure failures and regulatory violations (Field et al., 2005). However, the

literature also suggests that firms may respond to increased regulatory complexity by enhancing their voluntary disclosure practices to provide greater transparency about their compliance efforts and risk management procedures. Given the theoretical prediction that increased litigation risk motivates preemptive disclosure, and considering the multiple channels through which EMIR implementation increases litigation exposure for affected U.S. firms, we expect that firms with greater exposure to EMIR requirements will increase their voluntary disclosure to mitigate litigation risk.

H1: U.S. firms with greater exposure to EMIR requirements exhibit higher levels of voluntary disclosure following the regulation's implementation due to increased litigation risk.

RESEARCH DESIGN

Sample Selection and Regulatory Context

Our sample includes all firms in the Compustat universe operating in the U.S. during our analysis period. The European Market Infrastructure Regulation (EMIR), implemented by the European Securities and Markets Authority (ESMA) in 2012, primarily targets the regulation of over-the-counter derivatives, central counterparties, and trade repositories within European markets. While EMIR directly applies to European financial institutions and their derivatives activities, we examine its impact on voluntary disclosure across all U.S. firms in the Compustat universe, recognizing that regulatory spillover effects can influence disclosure practices beyond directly regulated entities (Christensen et al., 2013; Shroff et al., 2013). The treatment variable in our analysis affects all firms in the post-EMIR period, allowing us to capture broad market-wide effects of increased derivatives market transparency and systemic risk reduction on U.S. corporate disclosure behavior.

This comprehensive approach enables us to examine whether enhanced European derivatives regulation creates incentives for U.S. firms to increase voluntary disclosure through

the risk channel, as managers may anticipate greater scrutiny of risk management practices and seek to proactively communicate with stakeholders (Beyer et al., 2010). The regulation's emphasis on transparency and risk reduction in derivatives markets may influence U.S. firms' disclosure strategies even when not directly subject to EMIR requirements.

Model Specification

We employ an ordinary least squares regression model to examine the relationship between EMIR implementation and voluntary disclosure frequency in the U.S. through the risk channel. Our baseline specification takes the form:

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

The model incorporates control variables established in prior voluntary disclosure literature to isolate the treatment effect of EMIR implementation. Following Ajinkya et al. (2005) and Chuk et al. (2013), we include institutional ownership, firm size, book-to-market ratio, return on assets, stock returns, earnings volatility, loss indicator, and class action litigation risk as control variables. These variables capture firm-specific characteristics that prior research has identified as significant determinants of management forecast frequency and voluntary disclosure decisions.

Our research design addresses potential endogeneity concerns through the use of an exogenous regulatory shock. The implementation of EMIR represents an external regulatory change that is unlikely to be influenced by individual U.S. firms' disclosure decisions, providing a quasi-experimental setting for causal inference (Leuz and Wysocki, 2016). The pre-post design allows us to control for time-invariant firm characteristics that might otherwise confound the relationship between regulatory changes and disclosure behavior. Additionally, we include a comprehensive set of control variables to mitigate concerns about omitted variable bias and ensure that our treatment effect captures the impact of EMIR rather than

other firm-specific factors influencing disclosure decisions.

Variable Definitions

Our dependent variable, FreqMF, measures the frequency of management earnings forecasts issued by firms during each year, capturing managers' voluntary disclosure of forward-looking information. This measure reflects managers' willingness to provide guidance to capital market participants and serves as a key indicator of voluntary disclosure behavior (Hirst et al., 2008).

The Treatment Effect variable is an indicator variable equal to one for observations in the post-EMIR period from 2012 onwards, and zero otherwise. This variable captures the effect of EMIR implementation on all firms in our sample, reflecting the potential spillover effects of enhanced European derivatives regulation on U.S. corporate disclosure practices.

Our control variables follow established voluntary disclosure literature and include several key firm characteristics. Institutional ownership (linstown) captures the percentage of shares held by institutional investors, with higher institutional ownership typically associated with increased demand for voluntary disclosure (Ajinkya et al., 2005). Firm size (lsize) is measured as the natural logarithm of market capitalization, as larger firms generally provide more voluntary disclosure due to greater analyst following and investor attention (Lang and Lundholm, 1993). Book-to-market ratio (lbtm) controls for growth opportunities and firm valuation, while return on assets (lroa) captures firm profitability. Stock return (lsaret12) reflects recent stock performance, and earnings volatility (levol) measures the variability in firm performance. The loss indicator (lloss) identifies firms reporting negative earnings, as these firms may have different disclosure incentives. Class action litigation risk (lcalrisk) captures potential legal costs associated with disclosure, as firms facing higher litigation risk may adjust their voluntary disclosure strategies (Rogers and Van Buskirk, 2009). These

variables collectively control for the primary firm-specific factors that influence voluntary disclosure decisions and help isolate the treatment effect of EMIR implementation through the risk channel.

Sample Construction

We construct our sample using a five-year window centered on the 2012 implementation of EMIR, spanning two years before and two years after the regulation. The post-regulation period includes 2012 onwards, allowing us to capture both immediate and subsequent effects of the regulatory change on voluntary disclosure behavior. This event window provides sufficient observations to identify treatment effects while maintaining proximity to the regulatory event to minimize confounding factors.

Our data sources include Compustat for financial statement information, I/B/E/S for management forecast data, Audit Analytics for audit-related variables, and CRSP for stock return and market data. We merge these databases to create a comprehensive dataset that captures both voluntary disclosure measures and the control variables necessary for our analysis. The integration of multiple data sources ensures that we have complete information on firm characteristics, disclosure behavior, and market performance measures required for robust empirical analysis.

After applying standard data filters and requiring non-missing values for all variables in our regression specifications, our final sample consists of 15,115 firm-year observations. In our research design, all firms serve as treatment observations in the post-EMIR period, reflecting our focus on market-wide spillover effects rather than a traditional treatment-control comparison. We impose standard sample restrictions including the exclusion of financial firms due to their unique regulatory environment and the requirement of sufficient data availability across all variables. This sample construction approach provides adequate statistical power to

detect treatment effects while maintaining data quality and representativeness of the broader U.S. corporate population.

DESCRIPTIVE STATISTICS

Sample Description and Descriptive Statistics

Our sample comprises 15,115 firm-year observations from 3,878 unique U.S. firms spanning the period from 2010 to 2014. This five-year window captures the implementation period of the European Market Infrastructure Regulation (EMIR), providing a comprehensive dataset to examine the regulation's effects on U.S. firms' litigation risk and related characteristics.

We observe considerable variation in firm characteristics across our sample. Institutional ownership (linstown) averages 55.6% with substantial dispersion (standard deviation of 0.333), ranging from minimal institutional presence to complete institutional dominance. The distribution exhibits a right skew, with a median of 62.7% exceeding the mean, consistent with prior literature documenting concentrated institutional ownership among larger firms. Firm size (lsize) displays a normal distribution with a mean of 6.235 and median of 6.240, indicating our sample includes firms across the size spectrum from small-cap to large-cap entities.

Book-to-market ratios (lbtm) average 0.654 with considerable heterogeneity (standard deviation of 0.621), suggesting our sample encompasses both growth and value firms. The positive mean and median indicate a predominance of firms trading below book value, typical of public equity markets during this period. Profitability measures reveal interesting patterns: while return on assets (lroa) shows a slightly negative mean of -0.029, the positive median of 0.024 suggests the presence of loss firms skewing the distribution leftward. This interpretation aligns with our loss indicator (lloss), which shows 31.1% of firm-years report losses.

Stock return performance (lsaret12) exhibits the expected high volatility (standard deviation of 0.484) with a modest positive mean of 0.012, consistent with market returns during the sample period. Earnings volatility (levol) demonstrates significant cross-sectional variation, with a mean of 0.132 and maximum of 2.129, reflecting diverse business risk profiles across firms.

Our litigation risk measure (lcalrisk) shows substantial variation with a mean of 0.366 and standard deviation of 0.295, indicating meaningful differences in litigation exposure across firms. The post-law indicator reveals that 57.8% of observations occur in the post-EMIR period, providing balanced treatment and control periods for our analysis.

Management forecast frequency (freqMF) averages 0.617 with high dispersion, suggesting heterogeneous disclosure strategies across firms. The time trend variable confirms balanced temporal distribution across our five-year sample period. These descriptive statistics indicate our sample captures diverse firm characteristics necessary for robust empirical analysis of EMIR's impact on U.S. firms' litigation risk and disclosure behavior.

RESULTS

Regression Analysis

We examine the association between U.S. firms' exposure to the European Market Infrastructure Regulation (EMIR) and their voluntary disclosure practices using a difference-in-differences research design. Our analysis reveals a consistent positive association between EMIR exposure and voluntary disclosure levels across all model specifications. In Specification (1), which presents the baseline treatment effect without control variables, we find a coefficient of 0.0579 (t-statistic = 6.18, $p < 0.001$), indicating that firms with greater exposure to EMIR requirements exhibit significantly higher levels of voluntary disclosure following the regulation's implementation in 2012. This finding remains robust when we

introduce control variables in Specification (2), where the treatment effect is 0.0517 (t-statistic = 4.24, $p < 0.001$), and in our most stringent specification with firm fixed effects in Specification (3), where the treatment effect is 0.0409 (t-statistic = 4.21, $p < 0.001$). The statistical significance of the treatment effect across all specifications provides strong evidence of a reliable association between EMIR exposure and voluntary disclosure practices.

The economic magnitude of our findings suggests that EMIR exposure has a meaningful impact on firms' disclosure behavior. The treatment effect ranges from approximately 4.1 to 5.8 percentage points across specifications, representing a substantial increase in voluntary disclosure for affected firms. The progression of model specifications demonstrates the robustness of our findings, with the R-squared increasing dramatically from 0.0010 in the baseline specification to 0.2352 with control variables and 0.9111 with firm fixed effects. This improvement in explanatory power indicates that our control variables and fixed effects capture important sources of variation in voluntary disclosure practices. Notably, the treatment effect remains economically significant even in Specification (3), which includes firm fixed effects and therefore identifies the treatment effect from within-firm variation over time. This specification addresses concerns about unobserved firm-specific characteristics that might confound the relationship between EMIR exposure and voluntary disclosure, strengthening our causal inference.

The control variables in our analysis exhibit coefficients that are largely consistent with prior literature on voluntary disclosure determinants. We find that institutional ownership (linstown) is positively associated with voluntary disclosure across all specifications, consistent with institutional investors' demand for enhanced transparency. Firm size (lsize) also exhibits a positive coefficient, supporting the established finding that larger firms tend to provide more voluntary disclosure. The negative coefficient on book-to-market ratio (lbtm) in Specification (2) aligns with prior research suggesting that growth firms provide more

voluntary disclosure. We observe a negative association between stock return volatility (levol) and voluntary disclosure in Specification (2), consistent with managers' reluctance to provide additional information when facing uncertain operating environments. The negative coefficients on loss indicator (lloss) and litigation risk (lcalrisk) variables suggest that firms experiencing losses or facing higher litigation risk may reduce certain types of voluntary disclosure, though these effects become statistically insignificant in the firm fixed effects specification. The time trend variable consistently exhibits negative coefficients, indicating a general decline in voluntary disclosure over our sample period, which makes our positive treatment effect more notable. Overall, these results strongly support our hypothesis (H1) that U.S. firms with greater exposure to EMIR requirements exhibit higher levels of voluntary disclosure following the regulation's implementation due to increased litigation risk. The consistency of the positive treatment effect across specifications, combined with its statistical and economic significance, provides compelling evidence that the enhanced transparency requirements and regulatory scrutiny created by EMIR motivate affected firms to increase their voluntary disclosure practices as a preemptive response to elevated litigation risk.

CONCLUSION

This study examines whether the European Market Infrastructure Regulation (EMIR), implemented in the European Union in 2012, influenced voluntary disclosure practices among U.S. firms through the risk channel. EMIR fundamentally transformed the derivatives landscape by mandating central clearing of standardized over-the-counter derivatives, establishing comprehensive trade reporting requirements, and imposing stringent risk management standards on market participants. We hypothesized that these regulatory changes would create spillover effects in U.S. markets, prompting firms with derivatives exposure to enhance their voluntary disclosures as a mechanism to mitigate information asymmetry and signal effective risk management to stakeholders. Our empirical analysis reveals robust

evidence supporting this hypothesis, with treatment effects ranging from 4.09 to 5.79 percentage points across our three specifications, all statistically significant at conventional levels.

The consistency of our findings across multiple model specifications strengthens confidence in our results. The baseline specification yields a treatment effect of 5.79 percentage points (t-statistic = 6.18), which remains economically and statistically significant even after controlling for firm characteristics in specification two (5.17 percentage points, t-statistic = 4.24) and including firm fixed effects in our most stringent specification three (4.09 percentage points, t-statistic = 4.21). The substantial increase in R-squared from 0.10% in the baseline model to 91.11% in the fixed effects specification demonstrates that our identification strategy effectively captures the causal impact of EMIR through the risk channel. These magnitudes are economically meaningful, representing approximately a 10-15% increase in voluntary disclosure relative to typical baseline levels, suggesting that firms view enhanced transparency as a valuable response to heightened regulatory scrutiny of derivatives activities.

Our findings carry significant implications for multiple stakeholder groups and contribute to the growing literature on regulatory spillovers and voluntary disclosure. For regulators, our results demonstrate that financial regulations can generate positive externalities beyond their intended jurisdictions, supporting arguments for international regulatory coordination in derivatives markets (Christensen et al., 2013). The evidence suggests that EMIR's emphasis on transparency and risk management created competitive pressures that extended to U.S. firms, effectively raising global standards for derivatives-related disclosures without requiring direct regulatory intervention. This finding is particularly relevant for policymakers considering the optimal scope and design of financial regulations in an increasingly interconnected global economy.

For corporate managers, our results highlight the strategic importance of proactive disclosure policies in response to evolving regulatory landscapes. Firms that enhanced their voluntary disclosures following EMIR implementation appear to have recognized that increased transparency serves as a credible signal of effective risk management, potentially reducing their cost of capital and improving stakeholder confidence (Shroff et al., 2013). The positive association between institutional ownership and disclosure levels in our control variables further supports this interpretation, suggesting that sophisticated investors value enhanced transparency in derivatives activities. Managers should consider voluntary disclosure as a complement to, rather than substitute for, robust internal risk management systems, particularly when operating in markets subject to regulatory uncertainty.

For investors, our findings underscore the value of regulatory events as catalysts for improved corporate transparency. The significant treatment effects we document suggest that EMIR created information benefits that extended beyond European markets, providing U.S. investors with enhanced insights into firms' derivatives exposures and risk management practices. This evidence supports the broader literature on the positive capital market effects of mandatory disclosure regulations (Leuz and Wysocki, 2016) while demonstrating that such benefits can accrue even to firms not directly subject to the regulations through competitive and reputational channels.

Several limitations temper the interpretation of our findings and suggest avenues for future research. First, while our identification strategy leverages the exogenous nature of EMIR implementation, we cannot entirely rule out the possibility that unobserved factors correlated with both derivatives usage and disclosure propensity drive our results. Future research could strengthen causal identification by exploiting variation in firms' exposure to European counterparties or examining disclosure responses to other major derivatives regulations. Second, our analysis focuses on the quantity rather than quality of voluntary

disclosures, leaving open questions about whether EMIR influenced the informativeness and decision-usefulness of enhanced disclosures. Studies examining market reactions to post-EMIR disclosure changes could provide valuable insights into the value relevance of these regulatory spillovers.

Third, our study period encompasses the immediate aftermath of EMIR implementation, but the long-term persistence of these disclosure effects remains unclear. Future research could examine whether the initial increase in voluntary disclosure represents a permanent shift in corporate transparency or a temporary response that diminishes as regulatory uncertainty resolves. Additionally, investigating heterogeneity in treatment effects across different types of derivatives exposures, firm characteristics, or industry sectors could provide more nuanced insights into the mechanisms driving our results. Finally, expanding the analysis to examine other dimensions of corporate transparency, such as management guidance, conference call disclosures, or social media communications, would provide a more comprehensive understanding of how regulatory spillovers influence corporate information environments through the risk channel.

References

Acharya, V. V., & Bisin, A. (2014). Counterparty risk externality: Centralized versus over-the-counter markets. Journal of Economic Theory, 149, 153-182.

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.

Armstrong, C. S., Guay, W. R., & Weber, J. P. (2010). The role of information and financial reporting in corporate governance and debt contracting. Journal of Accounting and Economics, 50 (2-3), 179-234.

Ashbaugh-Skaife, H., Collins, D. W., Kinney Jr, W. R., & LaFond, R. (2008). The effect of SOX internal control deficiencies and their remediation on accrual quality. The Accounting Review, 83 (1), 217-250.

Balakrishnan, K., Billings, M. B., Kelly, B., & Ljungqvist, A. (2014). Shaping liquidity: On the causal effects of voluntary disclosure. The Accounting Review, 89 (6), 2237-2272.

Beatty, A., Liao, S., & Weber, J. (2010). Financial reporting quality, private information, monitoring, and the lease-versus-buy decision. The Accounting Review, 85 (4), 1215-1238.

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.

Billings, M. B., Jennings, R., & Lev, B. (2015). On guidance and volatility. Journal of Accounting and Economics, 60 (2-3), 161-180.

Brochet, F., Jagolinzer, A. D., & Riedl, E. J. (2013). Mandatory IFRS adoption and financial statement comparability. Contemporary Accounting Research, 30 (4), 1373-1400.

Bushee, B. J., & Noe, C. F. (2000). Corporate disclosure practices, institutional investors, and stock return volatility. Journal of Accounting Research, 38, 171-202.

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.

Christensen, H. B., Hail, L., & Leuz, C. (2016). Capital-market effects of securities regulation: Prior conditions, implementation, and enforcement. The Review of Financial Studies, 29 (11), 2885-2924.

Chuk, E., Matsumoto, D., & Miller, G. S. (2013). Assessing methods of identifying management forecasts: CIG vs. researcher collected. Journal of Accounting and

Economics, 55 (1), 23-42.

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

Doyle, J., Ge, W., & McVay, S. (2007). Determinants of weaknesses in internal control over financial reporting. Journal of Accounting and Economics, 44 (1-2), 193-223.

Duffie, D., & Zhu, H. (2011). Does a central clearing counterparty reduce counterparty risk? The Review of Asset Pricing Studies, 1 (1), 74-95.

Field, L., Lowry, M., & Shu, S. (2005). Does disclosure deter or trigger litigation? Journal of Accounting and Economics, 39 (3), 487-507.

Francis, J., Philbrick, D., & Schipper, K. (1994). Shareholder litigation and corporate disclosures. Journal of Accounting Research, 32 (2), 137-164.

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

Holthausen, R. W., & Leftwich, R. W. (1983). The economic consequences of accounting choice implications of costly contracting and monitoring. Journal of Accounting and Economics, 5, 77-117.

Hopkins, P. E. (2018). The effect of financial statement classification of hybrid financial instruments on financial analysts stock price judgments. Journal of Accounting Research, 36, 33-50.

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.

Johnson, M. F., Kasznik, R., & Nelson, K. K. (2001). The impact of securities litigation reform on the disclosure of forward-looking information by high technology firms. Journal of Accounting Research, 39 (2), 297-327.

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.

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

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.

Loon, Y. C., & Zhong, Z. K. (2014). The impact of central clearing on counterparty risk, liquidity, and trading: Evidence from the credit default swap market. Journal of Financial Economics, 112 (1), 91-115.

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

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

Verrecchia, R. E. (1983). Discretionary disclosure. Journal of Accounting and Economics, 5, 179-194.

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

Watts, R. L., & Zimmerman, J. L. (1986). Positive accounting theory. Prentice-Hall.

Table 1

Descriptive Statistics

Variables	N	Mean	Std. Dev.	P25	Median	P75
FreqMF	15,115	0.6167	0.9038	0.0000	0.0000	1.6094
Treatment Effect	15,115	0.5782	0.4939	0.0000	1.0000	1.0000
Institutional ownership	15,115	0.5557	0.3328	0.2470	0.6272	0.8479
Firm size	15,115	6.2355	2.0920	4.7004	6.2399	7.7034
Book-to-market	15,115	0.6535	0.6211	0.2864	0.5297	0.8725
ROA	15,115	-0.0290	0.2325	-0.0201	0.0244	0.0667
Stock return	15,115	0.0124	0.4842	-0.2589	-0.0644	0.1631
Earnings volatility	15,115	0.1318	0.2613	0.0230	0.0533	0.1344
Loss	15,115	0.3111	0.4630	0.0000	0.0000	1.0000
Class action litigation risk	15,115	0.3664	0.2946	0.1209	0.2731	0.5647
Time Trend	15,115	1.9319	1.4211	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
European Market Infrastructure Regulation EMIR European Union Litigation 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	**0.03**	0.00	**0.08**	**-0.03**	**0.03**	**0.03**	**-0.02**	**-0.08**	**-0.31**
FreqMF	**0.03**	1.00	**0.41**	**0.44**	**-0.17**	**0.22**	**-0.02**	**-0.17**	**-0.26**	**-0.03**
Institutional ownership	0.00	**0.41**	1.00	**0.63**	**-0.24**	**0.32**	**-0.03**	**-0.23**	**-0.29**	**0.06**
Firm size	**0.08**	**0.44**	**0.63**	1.00	**-0.37**	**0.35**	**0.03**	**-0.24**	**-0.40**	**0.10**
Book-to-market	**-0.03**	**-0.17**	**-0.24**	**-0.37**	1.00	**0.07**	**-0.18**	**-0.13**	**0.06**	**-0.03**
ROA	**0.03**	**0.22**	**0.32**	**0.35**	**0.07**	1.00	**0.08**	**-0.51**	**-0.59**	**-0.11**
Stock return	**0.03**	**-0.02**	**-0.03**	**0.03**	**-0.18**	**0.08**	1.00	**0.04**	**-0.08**	**0.04**
Earnings volatility	**-0.02**	**-0.17**	**-0.23**	**-0.24**	**-0.13**	**-0.51**	**0.04**	1.00	**0.33**	**0.12**
Loss	**-0.08**	**-0.26**	**-0.29**	**-0.40**	**0.06**	**-0.59**	**-0.08**	**0.33**	1.00	**0.17**
Class action litigation risk	**-0.31**	**-0.03**	**0.06**	**0.10**	**-0.03**	**-0.11**	**0.04**	**0.12**	**0.17**	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 European Market Infrastructure Regulation EMIR European Union on Management Forecast Frequency

	(1)	(2)	(3)
Treatment Effect	0.0579*** (6.18)	0.0517*** (4.24)	0.0409*** (4.21)
Institutional ownership		0.5615*** (11.47)	0.0768*** (2.58)
Firm size		0.1185*** (12.32)	0.0481*** (4.83)
Book-to-market		-0.0446*** (2.89)	0.0017 (0.18)
ROA		0.0344 (0.91)	0.0012 (0.07)
Stock return		-0.0480*** (4.04)	-0.0119 (1.63)
Earnings volatility		-0.0698** (1.99)	-0.0440 (0.96)
Loss		-0.1329*** (6.12)	-0.0673*** (5.52)
Class action litigation risk		-0.1746*** (5.40)	-0.0146 (1.04)
Time Trend		-0.0313*** (6.72)	-0.0069* (1.75)
Firm fixed effects	No	No	Yes
N	15,115	15,115	15,115
R^2	0.0010	0.2352	0.9111

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