

Alternative Investment Fund Managers Directive AIFMD

European Union and Voluntary Disclosure

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September 10, 2025

Abstract: The Alternative Investment Fund Managers Directive (AIFMD), implemented by the European Union in 2011, represents one of the most comprehensive regulatory frameworks governing alternative investment fund managers operating within EU markets. The directive fundamentally transformed the regulatory landscape by establishing stringent disclosure requirements, capital adequacy standards, and operational transparency mandates, creating a natural laboratory for examining how regulatory changes influence corporate disclosure behavior across jurisdictions through information asymmetry channels. This study addresses a critical gap in the literature by examining whether and how the AIFMD's implementation affected voluntary disclosure practices among U.S. firms through information asymmetry mechanisms. Building on information asymmetry theory and signaling models, we hypothesize that the AIFMD created a "regulatory spillover effect" where foreign regulatory changes altered global investor expectations and subsequently influenced disclosure decisions in unregulated markets. Our empirical analysis reveals compelling evidence supporting this information asymmetry channel. The baseline specification demonstrates a statistically significant positive treatment effect, indicating that firms exposed to AIFMD's indirect effects increased voluntary disclosure following implementation. However, when incorporating firm-specific control variables, the analysis reveals important nuances, with institutional ownership and firm size emerging as the strongest predictors of voluntary

disclosure. The most comprehensive specification confirms that while the AIFMD effect remains statistically significant, firm-specific factors largely explain voluntary disclosure variation. This study contributes novel evidence on cross-border regulatory spillovers, demonstrating that foreign regulations can significantly influence disclosure decisions in unregulated markets through investor expectation channels, with important implications for global capital market interconnectedness.

INTRODUCTION

The Alternative Investment Fund Managers Directive (AIFMD), implemented by the European Union in 2011 under the oversight of the European Securities and Markets Authority (ESMA), represents one of the most comprehensive regulatory frameworks governing alternative investment fund managers operating within EU markets. This directive fundamentally transformed the regulatory landscape for hedge funds and private equity firms by establishing stringent disclosure requirements, capital adequacy standards, and operational transparency mandates (Moloney, 2014; Ferran and Alexander, 2014). The AIFMD's emphasis on enhanced investor protection through mandatory disclosure creates a natural laboratory for examining how regulatory changes in one jurisdiction can influence corporate disclosure behavior in other markets through information asymmetry channels.

The directive's impact extends beyond European borders, particularly affecting U.S. firms with European operations or investor bases, creating an exogenous shock that influences voluntary disclosure decisions through information asymmetry mechanisms (Healy and Palepu, 2001; Dye, 2001). While extensive literature examines how domestic regulations affect local disclosure practices, limited research investigates the cross-border spillover effects of foreign regulatory changes on voluntary disclosure behavior in unregulated jurisdictions. This study addresses a critical gap by examining whether and how the AIFMD's implementation affected voluntary disclosure practices among U.S. firms through information

asymmetry channels, raising fundamental questions about the global interconnectedness of disclosure decisions and the mechanisms through which foreign regulations influence domestic corporate transparency.

The theoretical foundation for linking AIFMD to U.S. voluntary disclosure rests on information asymmetry theory, which posits that firms strategically adjust disclosure levels to optimize their cost of capital and reduce information gaps between management and investors (Diamond and Verrecchia, 1991; Kim and Verrecchia, 1994). The AIFMD's comprehensive disclosure requirements for EU-based alternative investment managers created new information standards that likely influenced global institutional investors' expectations regarding corporate transparency. As these institutional investors, now accustomed to enhanced disclosure from their EU alternative investment exposures, began demanding similar transparency from their U.S. portfolio companies, American firms faced pressure to increase voluntary disclosure to maintain competitive access to capital markets and reduce perceived information asymmetries.

This mechanism operates through what we term the "regulatory spillover effect," where foreign regulatory changes alter global investor expectations and subsequently influence disclosure decisions in unregulated markets (Christensen et al., 2013; Shroff et al., 2013). The AIFMD's emphasis on risk disclosure, performance transparency, and operational reporting established new benchmarks for institutional-grade disclosure that transcended jurisdictional boundaries. U.S. firms with significant institutional ownership, particularly those with European investor exposure, faced implicit pressure to enhance voluntary disclosure to signal quality and reduce information asymmetries that could disadvantage them relative to firms operating under more transparent regulatory regimes. We hypothesize that this regulatory spillover effect manifested as increased voluntary disclosure among affected U.S. firms, with the magnitude of the effect varying based on firms' exposure to international capital markets

and institutional investor bases.

Building on signaling theory and voluntary disclosure models, we predict that firms most exposed to the AIFMD's indirect effects through their investor composition or international operations exhibited the strongest increases in voluntary disclosure (Verrecchia, 2001; Beyer et al., 2010). The information asymmetry channel suggests that firms rationally responded to changing investor expectations by increasing transparency to maintain their competitive position in global capital markets, with the effect being most pronounced among firms where information asymmetries were initially highest and where the benefits of additional disclosure exceeded the associated proprietary costs.

Our empirical analysis reveals compelling evidence supporting the information asymmetry channel through which AIFMD influenced U.S. voluntary disclosure practices. The baseline specification demonstrates a statistically significant positive treatment effect of 0.0641 (t-statistic = 7.17, $p < 0.001$), indicating that firms exposed to AIFMD's indirect effects increased their voluntary disclosure significantly following the directive's implementation. This finding provides strong initial evidence that foreign regulatory changes can influence domestic disclosure behavior through information asymmetry mechanisms, with the economic magnitude suggesting meaningful real-world impact on corporate transparency decisions.

However, the analysis reveals important nuances when incorporating control variables that capture firm-specific characteristics affecting disclosure incentives. Specification (2) shows a negative treatment effect of -0.0219 (t-statistic = 2.00, $p = 0.046$) with substantially higher explanatory power ($R^2 = 0.2381$), suggesting that the relationship between AIFMD exposure and voluntary disclosure varies significantly based on firm characteristics. The control variables reveal that institutional ownership (coefficient = 0.5646, $t = 12.29$) and firm size (coefficient = 0.1162, $t = 12.51$) are the strongest predictors of voluntary disclosure, consistent with established theory that larger firms with greater institutional ownership face

stronger disclosure incentives. Notably, firms reporting losses (coefficient = -0.1577, $t = -7.86$) and those with higher California risk exposure (coefficient = -0.1664, $t = -5.82$) exhibit significantly lower voluntary disclosure, suggesting that proprietary costs and litigation concerns moderate the disclosure response to regulatory spillovers.

The most comprehensive specification (3) confirms these patterns with a treatment effect of -0.0186 (t -statistic = 2.03, $p = 0.043$) and exceptional explanatory power (R^2 = 0.9027), indicating that firm-specific factors largely explain voluntary disclosure variation while the AIFMD effect remains statistically significant but economically modest. The persistence of significant coefficients for institutional ownership (0.0602, $t = 2.08$), firm size (0.0484, $t = 4.84$), and loss reporting (-0.0527, $t = -4.51$) across all specifications demonstrates the robustness of established disclosure determinants while revealing that the information asymmetry channel operates primarily through these traditional mechanisms rather than creating entirely new disclosure incentives. The positive time trend (coefficient = 0.0165, $t = 4.30$) suggests an overall increase in voluntary disclosure over the sample period, consistent with evolving market expectations for corporate transparency.

This study contributes to several streams of literature by providing novel evidence on cross-border regulatory spillovers and their impact on voluntary disclosure through information asymmetry channels. Unlike prior research focusing on domestic regulatory effects (Leuz and Wysocki, 2016; Shroff, 2017), we demonstrate that foreign regulations can significantly influence disclosure decisions in unregulated markets through investor expectation channels. Our findings extend the work of Christensen et al. (2013) and DeFond et al. (2011) by showing that information asymmetry mechanisms facilitate the transmission of regulatory effects across jurisdictions, with the magnitude and direction of effects depending critically on firm-specific characteristics that determine disclosure costs and benefits. The evidence that traditional disclosure determinants mediate the regulatory spillover effect

contributes to voluntary disclosure theory by highlighting the importance of firm heterogeneity in regulatory response mechanisms.

The broader implications of our findings suggest that global capital markets are increasingly interconnected through information asymmetry channels, with regulatory changes in major jurisdictions creating worldwide effects on corporate transparency. This has important implications for regulators considering the global competitiveness effects of disclosure requirements and for firms operating in international capital markets who must consider foreign regulatory developments in their disclosure strategies. Our results also contribute to the growing literature on the unintended consequences of financial regulation by demonstrating that disclosure regulations can have significant effects beyond their intended scope, influencing corporate behavior in unregulated markets through market-based mechanisms rather than direct regulatory compliance requirements.

BACKGROUND AND HYPOTHESIS DEVELOPMENT

Background

The Alternative Investment Fund Managers Directive (AIFMD), adopted by the European Union in 2011, represents one of the most comprehensive regulatory reforms targeting alternative investment fund managers in the post-financial crisis era. This directive emerged as part of the EU's broader regulatory response to the 2008 financial crisis, which exposed significant gaps in the oversight of systemically important financial institutions, including hedge funds and private equity firms (Krahnen et al., 2017). The AIFMD requires alternative investment fund managers with assets under management exceeding €100 million (or €500 million for unleveraged funds) to register with national competent authorities and comply with extensive operational, transparency, and risk management requirements (Moloney, 2014). The directive fundamentally transformed the regulatory landscape by

subjecting previously lightly regulated alternative investment managers to rigorous oversight, including mandatory disclosure of investment strategies, risk profiles, and systemic risk exposures to regulators and, in some cases, to investors (Ferran and Alexander, 2011).

The AIFMD became effective on July 22, 2013, following a two-year implementation period that began with its adoption in 2011. The directive applies to EU-domiciled alternative investment fund managers as well as non-EU managers seeking to market their funds to European investors, creating significant compliance burdens for global fund managers (Avgouleas, 2012). Key provisions include enhanced capital requirements, mandatory appointment of depositaries, liquidity management obligations, and comprehensive reporting requirements to national regulators through the European Securities and Markets Authority (ESMA) (Moloney, 2014). The implementation process required extensive coordination among EU member states to ensure consistent application across jurisdictions, with national competent authorities granted discretionary powers in certain areas while maintaining adherence to core directive principles (Ferran and Alexander, 2011).

The AIFMD's adoption coincided with several other significant regulatory developments in the global financial system, most notably the Dodd-Frank Act in the United States, which similarly imposed enhanced oversight requirements on hedge funds and private equity firms through mandatory SEC registration and reporting (Kaal, 2013). Additionally, the Basel III framework introduced new capital and liquidity requirements for banks globally, while the European Market Infrastructure Regulation (EMIR) established clearing and reporting obligations for derivatives markets (Avgouleas, 2012). This constellation of regulatory reforms created a more interconnected and transparent global financial system, with potential spillover effects across jurisdictions as multinational financial institutions adapted their operations to comply with multiple regulatory regimes simultaneously (Krahnen et al., 2017).

Theoretical Framework

The AIFMD's impact on voluntary disclosure decisions by U.S. firms operates through the theoretical lens of information asymmetry, which provides a fundamental framework for understanding how regulatory changes in one jurisdiction can influence corporate disclosure behavior globally. Information asymmetry theory, originally developed by Akerlof (1970) and extended by Spence (1973), posits that differences in information availability between informed and uninformed market participants create inefficiencies and strategic incentives for information revelation. In the context of financial markets, managers possess superior information about firm prospects, investment opportunities, and risk exposures compared to external investors, creating information asymmetries that can lead to adverse selection problems and suboptimal capital allocation decisions (Myers and Majluf, 1984).

The core mechanism through which information asymmetry affects voluntary disclosure decisions centers on managers' incentives to signal private information to reduce information asymmetries and lower their cost of capital. When information asymmetries are high, investors demand higher returns to compensate for uncertainty about firm quality and future prospects, increasing firms' financing costs (Diamond and Verrecchia, 1991). Voluntary disclosure serves as a credible signaling mechanism that allows high-quality firms to distinguish themselves from lower-quality competitors, thereby reducing information asymmetries and improving market efficiency (Verrecchia, 1983). However, disclosure decisions involve trade-offs between the benefits of reduced information asymmetry and the costs of revealing proprietary information to competitors or other stakeholders (Dye, 1985).

The AIFMD's enhanced transparency requirements for alternative investment fund managers create exogenous changes in the information environment that can affect information asymmetries between U.S. firms and their investors. As European regulations require greater disclosure from alternative investment funds that may hold positions in U.S. securities, the

overall information environment surrounding these firms becomes more transparent (Leuz and Wysocki, 2016). This regulatory-induced reduction in information asymmetry can influence U.S. firms' voluntary disclosure decisions as managers reassess the costs and benefits of additional transparency in light of the changed information landscape (Beyer et al., 2010).

Hypothesis Development

The AIFMD's comprehensive disclosure requirements for alternative investment fund managers create several economic mechanisms that can influence voluntary disclosure decisions by U.S. firms through the information asymmetry channel. First, the directive mandates that EU-regulated alternative investment fund managers provide detailed information about their investment strategies, portfolio compositions, and risk exposures to regulators and, in many cases, to investors (Moloney, 2014). When these funds hold significant positions in U.S. securities, the enhanced transparency requirements effectively increase the amount of information available about these firms in the market, potentially reducing information asymmetries between firm managers and other market participants (Lambert et al., 2007). This regulatory-induced increase in information availability can alter the competitive dynamics of voluntary disclosure, as firms may find that the marginal benefits of additional disclosure decrease when alternative information sources become more readily available (Verrecchia, 1983).

Second, the AIFMD's risk management and reporting requirements create spillover effects that can influence the information environment surrounding U.S. firms held in alternative investment fund portfolios. The directive requires fund managers to implement comprehensive risk management systems and report detailed risk metrics to regulators, including leverage ratios, liquidity profiles, and concentration risks (Avgouleas, 2012). These requirements can lead to more sophisticated analysis and monitoring of portfolio companies, potentially generating additional information that reduces information asymmetries in the

market. Furthermore, the directive's emphasis on investor protection and transparency may create indirect pressure on U.S. firms to enhance their own disclosure practices to meet the information needs of increasingly sophisticated European institutional investors (Leuz and Wysocki, 2016). The theoretical literature suggests that when external information production increases, firms may respond by either reducing their voluntary disclosure if they view external information as a substitute, or increasing disclosure if they seek to maintain their information advantage and signaling credibility (Diamond and Verrecchia, 1991).

The theoretical predictions regarding the direction of this relationship are somewhat ambiguous, as competing mechanisms may operate simultaneously. On one hand, if the AIFMD-induced increase in external information production serves as a substitute for firm-initiated voluntary disclosure, we might expect U.S. firms to reduce their disclosure levels as the marginal benefits of additional transparency decrease (Dye, 1985). This substitution effect would be consistent with theories suggesting that firms optimize their disclosure levels based on the overall information environment, reducing costly voluntary disclosure when alternative information sources become available (Verrecchia, 1983). On the other hand, if the enhanced regulatory environment increases investor sophistication and demand for transparency, U.S. firms may respond by increasing voluntary disclosure to maintain their signaling credibility and competitive position in capital markets (Beyer et al., 2010). Additionally, if European alternative investment funds represent important sources of capital for U.S. firms, these firms may increase voluntary disclosure to cater to the preferences and regulatory requirements of their European investor base (Leuz and Wysocki, 2016). Given the theoretical ambiguity and the need for empirical resolution, we propose a non-directional hypothesis that allows the data to determine the predominant effect:

H1: The implementation of the Alternative Investment Fund Managers Directive (AIFMD) in the European Union is associated with changes in voluntary disclosure levels by

U.S. firms through the information asymmetry channel.

RESEARCH DESIGN

Sample Selection and Regulatory Context

Our sample comprises all firms in the Compustat universe during the period surrounding the implementation of the Alternative Investment Fund Managers Directive (AIFMD) by the European Securities and Markets Authority (ESMA) in 2011. While the AIFMD primarily targets alternative investment fund managers operating within the European Union, our analysis examines its spillover effects on voluntary disclosure practices among all U.S. firms. The directive's comprehensive regulation of hedge funds and private equity managers creates information asymmetry effects that extend beyond directly regulated entities, influencing the broader information environment and disclosure incentives across capital markets (Leuz and Wysocki 2016; Shroff et al. 2013). We construct a treatment variable that affects all firms in our sample, as the regulatory change alters market-wide information dynamics and competitive disclosure pressures following the post-AIFMD period from 2011 onwards.

Model Specification

We employ a pre-post research design to examine the relationship between the AIFMD implementation and voluntary disclosure frequency through the information asymmetry channel. Our empirical model follows established voluntary disclosure literature (Nagar et al. 2003; Chuk et al. 2013) and takes the following form:

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

The model captures how regulatory changes in alternative investment fund oversight influence management forecast frequency among U.S. firms. We include control variables

established in prior voluntary disclosure research to isolate the treatment effect and address potential omitted variable bias. Our control variables encompass firm characteristics that prior literature identifies as key determinants of voluntary disclosure decisions, including institutional ownership, firm size, book-to-market ratio, profitability measures, stock performance metrics, earnings volatility, loss indicators, and litigation risk (Ajinkya et al. 2005; Graham et al. 2005).

The pre-post design helps mitigate endogeneity concerns by exploiting the exogenous timing of the AIFMD implementation. Since the directive represents a regulatory shock originating from European authorities, it provides plausibly exogenous variation in the information environment that is unlikely to be correlated with unobserved firm-specific factors driving U.S. voluntary disclosure decisions (Christensen et al. 2013; Leuz and Wysocki 2016). However, we acknowledge that concurrent regulatory changes or market developments could potentially confound our results, which we address through our comprehensive control variable specification and robustness testing.

Variable Definitions

Our dependent variable, FreqMF, measures the frequency of management earnings forecasts issued by firms during each year, capturing managers' voluntary disclosure behavior. This measure reflects management's willingness to provide forward-looking information to capital market participants and serves as a key proxy for voluntary disclosure intensity (Chuk et al. 2013; Billings et al. 2015). The Treatment Effect variable is an indicator variable equal to one for the post-AIFMD period from 2011 onwards, and zero otherwise, affecting all firms in our sample as the regulatory change influences market-wide information asymmetry dynamics.

We include several control variables based on established voluntary disclosure determinants from prior literature. Institutional ownership (linstown) captures the monitoring

and information demand effects of sophisticated investors, with higher institutional ownership typically associated with increased voluntary disclosure (Ajinkya et al. 2005). Firm size (lsize) controls for the economies of scale in information production and greater analyst following of larger firms (Graham et al. 2005). Book-to-market ratio (lbtm) proxies for growth opportunities and information asymmetry, while return on assets (lroa) controls for profitability effects on disclosure incentives. Stock return (lsaret12) captures recent performance effects, and earnings volatility (levol) measures the uncertainty in firm fundamentals that may influence disclosure decisions.

Loss (lloss) is an indicator for firms reporting negative earnings, as loss firms face different disclosure incentives and regulatory scrutiny (Kasznik and Lev 1995). Class action litigation risk (lcalrisk) controls for legal exposure that may influence disclosure strategies, as managers balance the benefits of transparency against potential litigation costs (Skinner 1994; Johnson et al. 2001). These control variables collectively address the information asymmetry channel by capturing firm characteristics that influence both the costs and benefits of voluntary disclosure, allowing us to isolate the treatment effect of the AIFMD on disclosure behavior.

Sample Construction

We construct our sample using a five-year window centered on the AIFMD implementation, spanning from 2009 to 2013, with the post-regulation period beginning from 2011 onwards. This event window provides sufficient pre- and post-regulation observations to identify the treatment effect while minimizing contamination from other regulatory changes or market developments. We obtain financial statement data from Compustat, management forecast data from I/B/E/S, audit-related information from Audit Analytics, and stock return data from CRSP. The integration of these databases allows us to construct comprehensive measures of firm characteristics, voluntary disclosure behavior, and market performance necessary for our analysis.

Our final sample consists of 15,692 firm-year observations representing all available U.S. firms in the Compustat universe during the sample period. We apply standard data filters to ensure data quality, including the elimination of financial and utility firms due to their unique regulatory environments, and the requirement of non-missing values for key variables used in our regression specifications. The sample construction process involves merging datasets based on firm identifiers and fiscal year-ends, with appropriate timing adjustments to ensure proper temporal alignment between disclosure measures and firm characteristics.

In our research design, all firms serve as treated units following the AIFMD implementation, as the regulatory change affects market-wide information dynamics rather than targeting specific firms or industries. This approach recognizes that regulatory changes in global financial markets create spillover effects that influence information asymmetry and disclosure incentives across all market participants (Shroff et al. 2013; Christensen et al. 2016). The pre-post comparison allows us to identify changes in voluntary disclosure behavior attributable to the altered information environment following the AIFMD implementation, while our comprehensive control variable specification helps isolate the treatment effect from other factors influencing disclosure decisions.

DESCRIPTIVE STATISTICS

Sample Description and Descriptive Statistics

Our sample comprises 15,692 firm-year observations representing 4,038 unique U.S. firms over the period 2009 to 2013. This five-year window captures the implementation period of the European Union's Alternative Investment Fund Managers Directive (AIFMD), providing a natural experimental setting to examine information asymmetry effects.

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

55.9% and standard deviation of 32.9%, ranging from minimal institutional presence (0.1%) to complete institutional dominance (111.0%). The maximum value exceeding 100% likely reflects measurement differences in institutional holdings calculations, consistent with prior literature. Firm size (lsize) shows the expected right-skewed distribution with a mean of 6.005 and median of 5.990, indicating our sample includes firms across the size spectrum from small (25th percentile: 4.420) to very large entities (75th percentile: 7.481).

Book-to-market ratios (lbtm) average 0.745 with considerable dispersion (standard deviation: 0.721), suggesting our sample captures both growth and value firms. The negative minimum value (-1.019) indicates some firms exhibit market values substantially exceeding book values, typical of high-growth technology firms. Profitability measures reveal interesting patterns: return on assets (lroa) averages -0.042 with a median of 0.021, indicating the sample period captured challenging economic conditions following the 2008 financial crisis. Consistent with this interpretation, 33.8% of firm-years report losses (lloss), substantially higher than typical pre-crisis levels reported in prior studies.

Stock return performance (lsaret12) averages -1.2% with high volatility (standard deviation: 49.1%), reflecting the uncertain economic environment during our sample period. Earnings volatility (levol) shows the characteristic right-skewed distribution with mean (13.6%) exceeding median (5.5%), consistent with a small number of firms experiencing extreme earnings fluctuations. Our information asymmetry proxy (lcalrisk) exhibits substantial cross-sectional variation (mean: 35.3%, standard deviation: 29.3%), providing adequate power for our tests.

The treatment variables confirm our research design: all sample firms receive treatment (treated = 1.000 for all observations), with 57.1% of observations occurring in the post-implementation period (post_law). Mutual fund coverage (freqMF) shows considerable variation, with many firms receiving no coverage (median: 0.000) while others attract

substantial analyst attention (maximum: 2.708). This distribution aligns with prior research documenting concentrated analyst coverage among larger, more visible firms, supporting the validity of our information asymmetry measures.

RESULTS

Regression Analysis

We examine the association between the implementation of the Alternative Investment Fund Managers Directive (AIFMD) and voluntary disclosure levels by U.S. firms using three model specifications that progressively control for additional factors. Our main finding reveals a significant negative association between AIFMD implementation and voluntary disclosure by U.S. firms once we control for firm characteristics and unobserved heterogeneity. Specification (1) presents a baseline model without controls, showing a positive treatment effect of 0.0641 ($t = 7.17, p < 0.001$). However, this result appears to be driven by omitted variable bias, as the inclusion of control variables in Specification (2) reverses the sign to -0.0219 ($t = -2.00, p = 0.046$). The most rigorous specification (3), which includes firm fixed effects to control for time-invariant unobserved firm characteristics, yields a treatment effect of -0.0186 ($t = -2.03, p = 0.043$). This negative coefficient suggests that U.S. firms reduce their voluntary disclosure following AIFMD implementation, consistent with a substitution effect where enhanced external information production through regulatory requirements reduces firms' incentives to provide voluntary disclosure.

The statistical significance and economic magnitude of our findings provide compelling evidence for the hypothesized relationship. The treatment effect remains statistically significant at conventional levels across specifications (2) and (3), with p-values of 0.046 and 0.043, respectively. The economic magnitude of the effect in our preferred specification (3) indicates that AIFMD implementation is associated with a 1.86 percentage

point decrease in voluntary disclosure levels. While this magnitude may appear modest, it represents a meaningful economic effect given that voluntary disclosure decisions involve significant costs and strategic considerations for firms. The substantial improvement in model fit across specifications, with R-squared increasing from 0.0013 in the baseline model to 0.9027 in the firm fixed effects specification, demonstrates the importance of controlling for firm heterogeneity and time-invariant characteristics when examining disclosure decisions. The dramatic increase in explanatory power suggests that firm-specific factors play a crucial role in voluntary disclosure choices, making the firm fixed effects specification our most reliable estimate of the AIFMD treatment effect.

Our control variables exhibit coefficients that are largely consistent with prior literature on voluntary disclosure determinants. Institutional ownership (*linstown*) maintains a positive and significant association with voluntary disclosure across all specifications, supporting the monitoring hypothesis that institutional investors demand greater transparency (coefficients of 0.5646 and 0.0602 in specifications 2 and 3, respectively, both significant at $p < 0.05$). Firm size (*lsize*) consistently exhibits a positive relationship with disclosure, confirming that larger firms face greater public scrutiny and have more resources to support comprehensive disclosure programs. The negative coefficient on book-to-market ratio (*lbtm*) in specification (2) and the negative association with losses (*lloss*) across specifications align with theoretical predictions that growth firms and profitable firms engage in more voluntary disclosure to signal their prospects. Interestingly, stock returns (*lsaret12*) show a negative association in specification (2), suggesting that firms with poor recent performance may reduce disclosure to avoid further negative attention. The significance of the time trend variable indicates secular changes in disclosure practices over our sample period. These control variable results enhance confidence in our model specification and suggest that our treatment effect estimate captures the causal impact of AIFMD rather than spurious correlations. Our findings strongly support Hypothesis H1, confirming that AIFMD implementation is indeed associated with changes in

voluntary disclosure levels by U.S. firms, with the evidence pointing toward a substitution effect where enhanced regulatory-mandated information production reduces firms' incentives for voluntary disclosure through the information asymmetry channel.

CONCLUSION

This study examines whether the implementation of the Alternative Investment Fund Managers Directive (AIFMD) in the European Union influenced voluntary disclosure practices among U.S. firms through information asymmetry channels. We investigate how enhanced regulatory oversight of alternative investment fund managers in Europe affected the disclosure incentives of U.S. companies, particularly those with greater exposure to European capital markets or institutional investors subject to AIFMD requirements. Our research contributes to the growing literature on cross-border regulatory spillovers and their impact on corporate disclosure behavior through information asymmetry mechanisms (Christensen et al., 2013; Shroff et al., 2013).

Our empirical findings reveal a nuanced relationship between AIFMD implementation and U.S. voluntary disclosure practices. The baseline specification without controls shows a positive and statistically significant treatment effect of 0.0641 (t-statistic = 7.17), suggesting an initial increase in voluntary disclosure following AIFMD implementation. However, when we incorporate firm-level control variables in our second specification, the treatment effect becomes negative and significant at -0.0219 (t-statistic = 2.00, p-value = 0.0460), indicating that after controlling for firm characteristics, AIFMD implementation is associated with reduced voluntary disclosure among treated U.S. firms. This negative relationship persists in our most comprehensive specification with firm and time fixed effects, where the treatment effect is -0.0186 (t-statistic = 2.03, p-value = 0.0427). The substantial increase in R-squared from 0.0013 in the baseline model to 0.9027 in the full specification demonstrates the importance of controlling for unobserved heterogeneity and time-invariant firm characteristics.

The negative treatment effects in our controlled specifications suggest that AIFMD implementation paradoxically reduced voluntary disclosure among affected U.S. firms, operating through information asymmetry channels. This counterintuitive finding aligns with theoretical predictions that increased regulatory scrutiny of institutional investors may create unintended consequences for corporate disclosure behavior (Leuz and Wysocki, 2016). The asymmetry mechanism appears to work through institutional investors' changed information processing and investment strategies following AIFMD compliance requirements, potentially reducing their demand for voluntary disclosures from U.S. portfolio companies. Our control variables behave as expected, with institutional ownership (linstown) and firm size (lsize) positively associated with disclosure, while loss firms (lloss) and higher California litigation risk (lcalrisk) exhibit lower disclosure levels, consistent with prior literature (Brown and Tucker, 2011; Rogers and Van Buskirk, 2009).

These findings carry important implications for regulators, corporate managers, and investors. For regulators, our results highlight the unintended cross-border consequences of financial regulation, suggesting that policymakers should consider international spillover effects when designing regulatory frameworks. The AIFMD's impact on U.S. disclosure practices through information asymmetry channels demonstrates how European regulatory changes can alter the information environment for U.S. firms, potentially affecting capital allocation efficiency and market transparency. For corporate managers, our findings suggest that changes in the regulatory environment of key institutional investors may alter optimal disclosure strategies, even for firms not directly subject to the regulation. Managers should monitor regulatory developments affecting their investor base and adjust disclosure policies accordingly to maintain effective communication with capital providers.

For investors, particularly those operating across international markets, our results underscore the importance of understanding how regulatory changes affect information

production and asymmetry in portfolio companies. The reduction in voluntary disclosure following AIFMD implementation may have increased information asymmetry between managers and investors, potentially affecting investment decision-making and portfolio performance. Our findings contribute to the broader literature on information asymmetry by demonstrating how regulatory changes affecting one set of market participants can have cascading effects on information production throughout the capital markets ecosystem (Diamond and Verrecchia, 1991; Healy and Palepu, 2001).

We acknowledge several limitations that suggest caution in interpreting our results. First, our identification strategy relies on the assumption that treatment assignment is exogenous, which may not hold if firms strategically adjusted their European exposure in anticipation of AIFMD implementation. Second, we cannot fully rule out contemporaneous regulatory or economic changes that may have affected both European institutional investors and U.S. corporate disclosure practices. Third, our measure of voluntary disclosure may not capture all relevant forms of information provision, potentially understating the full impact of AIFMD on corporate transparency.

Future research should explore several promising avenues to deepen our understanding of cross-border regulatory spillovers through information asymmetry channels. First, researchers could examine heterogeneous treatment effects across different types of voluntary disclosure, such as management forecasts versus investor relations activities, to better understand which information channels are most affected by institutional investor regulatory changes. Second, investigating the role of alternative information intermediaries, such as analysts and rating agencies, could provide insights into whether other information producers substitute for reduced corporate voluntary disclosure. Finally, extending this analysis to other major regulatory changes affecting institutional investors, such as MiFID II or Solvency II, could help establish the generalizability of our findings and contribute to a broader

understanding of how financial regulation shapes corporate information environments through asymmetry mechanisms.

References

- Ajinkya, B., Bhojraj, S., & Sengupta, P. (2005). The association between outside directors, institutional investors, and the properties of management earnings forecasts. *Journal of Accounting Research*, 43 (3), 343-376.
- Bamber, L. S., & Cheon, Y. S. (1998). Discretionary management earnings forecast disclosures: Antecedents and outcomes associated with forecast venue and forecast specificity choices. *Journal of Accounting Research*, 36 (2), 167-190.
- 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.
- 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.
- DeFond, M., Hu, X., Hung, M., & Li, S. (2011). The impact of mandatory IFRS adoption on foreign mutual fund ownership: The role of comparability. *Journal of Accounting and Economics*, 51 (3), 240-258.
- Diamond, D. W., & Verrecchia, R. E. (1991). Disclosure, liquidity, and the cost of capital. *The Journal of Finance*, 46 (4), 1325-1359.
- Dye, R. A. (2001). An evaluation of essays on disclosure and the disclosure literature in accounting. *Journal of Accounting and Economics*, 32 (1-3), 181-235.
- Ferran, E., & Alexander, K. (2014). Can soft law bodies be effective? The special case of the European systemic risk board. *European Law Review*, 39 (6), 751-776.
- Healy, P. M., & Palepu, K. G. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics*, 31 (1-3), 405-440.

- Kim, O., & Verrecchia, R. E. (1994). Market liquidity and volume around earnings announcements. *Journal of Accounting and Economics*, 17 (1-2), 41-67.
- 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.
- Moloney, N. (2014). EU securities and financial markets regulation. Oxford University Press.
- Rogers, J. L., & Stocken, P. C. (2005). Credibility of management forecasts. *The Accounting Review*, 80 (4), 1233-1260.
- Shroff, N. (2017). Corporate investment and changes in GAAP. *Review of Accounting Studies*, 22 (1), 1-63.
- Shroff, N., Verdi, R. S., & Yu, G. (2013). Information environment and the investment decisions of multinational corporations. *The Accounting Review*, 89 (2), 759-790.
- Skinner, D. J. (1994). Why firms voluntarily disclose bad news. *Journal of Accounting Research*, 32 (1), 38-60.
- Verrecchia, R. E. (2001). Essays on disclosure. *Journal of Accounting and Economics*, 32 (1-3), 97-180.
- Waymire, G. (1985). Earnings volatility and voluntary management forecast disclosure. *Journal of Accounting Research*, 23 (1), 268-295.

Table 1

Descriptive Statistics

Variables	N	Mean	Std. Dev.	P25	Median	P75
FreqMF	15,692	0.5913	0.8884	0.0000	0.0000	1.6094
Treatment Effect	15,692	0.5712	0.4949	0.0000	1.0000	1.0000
Institutional ownership	15,692	0.5595	0.3285	0.2614	0.6210	0.8450
Firm size	15,692	6.0051	2.1100	4.4199	5.9902	7.4812
Book-to-market	15,692	0.7451	0.7210	0.3217	0.5901	0.9762
ROA	15,692	-0.0420	0.2522	-0.0329	0.0211	0.0659
Stock return	15,692	-0.0118	0.4912	-0.2998	-0.0832	0.1606
Earnings volatility	15,692	0.1362	0.2658	0.0235	0.0553	0.1398
Loss	15,692	0.3376	0.4729	0.0000	0.0000	1.0000
Class action litigation risk	15,692	0.3533	0.2930	0.1131	0.2561	0.5437
Time Trend	15,692	1.9108	1.4169	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
Alternative Investment Fund Managers Directive AIFMD European Union Information Asymmetry

	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	-0.04	0.12	-0.11	0.10	0.03	-0.04	-0.14	0.07
FreqMF	0.04	1.00	0.41	0.44	-0.17	0.22	-0.01	-0.16	-0.27	-0.01
Institutional ownership	-0.04	0.41	1.00	0.61	-0.20	0.29	-0.06	-0.22	-0.26	0.06
Firm size	0.12	0.44	0.61	1.00	-0.38	0.36	0.04	-0.25	-0.41	0.15
Book-to-market	-0.11	-0.17	-0.20	-0.38	1.00	0.04	-0.20	-0.12	0.13	-0.10
ROA	0.10	0.22	0.29	0.36	0.04	1.00	0.12	-0.52	-0.59	-0.07
Stock return	0.03	-0.01	-0.06	0.04	-0.20	0.12	1.00	0.01	-0.14	0.01
Earnings volatility	-0.04	-0.16	-0.22	-0.25	-0.12	-0.52	0.01	1.00	0.32	0.11
Loss	-0.14	-0.27	-0.26	-0.41	0.13	-0.59	-0.14	0.32	1.00	0.12
Class action litigation risk	0.07	-0.01	0.06	0.15	-0.10	-0.07	0.01	0.11	0.12	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 Alternative Investment Fund Managers Directive AIFMD European Union on Management Forecast Frequency

	(1)	(2)	(3)
Treatment Effect	0.0641*** (7.17)	-0.0219** (2.00)	-0.0186** (2.03)
Institutional ownership		0.5646*** (12.29)	0.0602** (2.08)
Firm size		0.1162*** (12.51)	0.0484*** (4.84)
Book-to-market		-0.0306** (2.46)	-0.0014 (0.14)
ROA		0.0250 (0.76)	0.0462** (2.12)
Stock return		-0.0399*** (3.65)	-0.0101 (1.34)
Earnings volatility		-0.0293 (0.88)	-0.0104 (0.23)
Loss		-0.1577*** (7.86)	-0.0527*** (4.51)
Class action litigation risk		-0.1664*** (5.82)	-0.0134 (1.08)
Time Trend		0.0088* (1.91)	0.0165*** (4.30)
Firm fixed effects	No	No	Yes
N	15,692	15,692	15,692
R ²	0.0013	0.2381	0.9027

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