Alternative Investment Fund Managers Directive AIFMD European Union and Voluntary Disclosure

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Abstract: The Alternative Investment Fund Managers Directive (AIFMD), implemented by the European Union in 2011, represents a comprehensive regulatory framework that fundamentally transformed oversight of hedge funds and private equity firms through stringent disclosure requirements and operational transparency mandates. While the directive's extraterritorial implications create regulatory spillover effects influencing global financial markets, a significant gap exists in understanding how European financial regulations specifically affect U.S. corporate voluntary disclosure through proprietary cost considerations. This study addresses how AIFMD implementation affects voluntary disclosure practices of U.S. firms through changes in proprietary costs and examines the economic mechanisms underlying this cross-border regulatory influence. The theoretical foundation rests on proprietary costs theory, which posits that firms strategically withhold information when disclosure costs exceed expected benefits, with AIFMD creating an exogenous shock that increases the value of proprietary information as a competitive advantage. Using empirical analysis, we find compelling evidence supporting the proprietary costs channel, with our most robust specification revealing a significant negative treatment effect of -0.0186, confirming that AIFMD implementation led to reduced voluntary disclosure among U.S. firms after controlling for firm-specific characteristics. The findings contribute to literature on cross-border regulatory spillovers by providing novel evidence that European financial

regulations create measurable effects on U.S. corporate behavior through competitive dynamics rather than direct legal requirements, highlighting the interconnected nature of global financial markets and the importance of considering international implications in regulatory design.

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 jurisdictions. 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 (Ferran and Alexander, 2014; Moloney, 2014). The AIFMD's extraterritorial implications extend far beyond European borders, creating regulatory spillover effects that influence global financial markets and corporate behavior patterns worldwide.

The directive's impact on voluntary disclosure practices in the United States operates primarily through the proprietary costs channel, whereby firms strategically adjust their information disclosure policies in response to changing competitive dynamics and regulatory environments (Verrecchia, 1983; Dye, 1985). As European regulations increase transparency requirements for alternative investment managers, U.S. firms face altered competitive landscapes where proprietary information becomes more valuable, potentially leading to reduced voluntary disclosure to maintain competitive advantages (Clinch and Verrecchia, 1997). Despite extensive research on international regulatory spillovers and disclosure behavior, a significant gap exists in understanding how European financial regulations specifically influence U.S. corporate voluntary disclosure through proprietary cost considerations. This study addresses the fundamental research question: How does the

implementation of AIFMD affect voluntary disclosure practices of U.S. firms through changes in proprietary costs, and what are the economic mechanisms underlying this cross-border regulatory influence?

The theoretical foundation linking AIFMD to U.S. voluntary disclosure rests on the proprietary costs theory of disclosure, which posits that firms strategically withhold information when disclosure costs exceed expected benefits (Verrecchia, 1983; Dye, 1985). The AIFMD implementation creates an exogenous shock to the information environment by mandating increased transparency from European alternative investment managers, thereby altering the competitive dynamics faced by U.S. firms with European operations or investor bases (Beyer et al., 2010). This regulatory change increases the proprietary costs associated with voluntary disclosure for U.S. firms, as additional information transparency could disadvantage them relative to competitors operating under different regulatory regimes.

The economic mechanism operates through multiple channels that collectively influence managerial disclosure decisions. First, enhanced European regulatory oversight increases the scrutiny applied to firms with cross-border operations, making proprietary information more valuable as a source of competitive advantage (Admati and Pfleiderer, 2000). Second, the directive's comprehensive reporting requirements create information asymmetries between firms subject to different regulatory frameworks, incentivizing strategic information withholding to preserve competitive positioning (Clinch and Verrecchia, 1997). Third, increased regulatory compliance costs associated with European operations may lead firms to economize on voluntary disclosure activities, viewing them as discretionary expenses rather than value-enhancing activities (Leuz and Wysocki, 2016).

Building on established theoretical frameworks in disclosure economics, we predict that AIFMD implementation will lead to decreased voluntary disclosure among U.S. firms through the proprietary costs channel. The regulatory shock created by European oversight

increases the relative value of private information, making managers more reluctant to voluntarily disclose strategic details that could benefit competitors (Healy and Palepu, 2001). Furthermore, the directive's focus on alternative investment managers creates particular incentives for firms in related industries to reduce disclosure, as increased regulatory attention makes proprietary information more competitively sensitive (Bushman and Smith, 2001). These theoretical considerations lead to the testable prediction that U.S. firms will exhibit reduced voluntary disclosure following AIFMD implementation, with the effect being most pronounced among firms with significant European exposure or those operating in industries closely monitored by alternative investment managers.

Our empirical analysis provides compelling evidence supporting the proprietary costs channel through which AIFMD influences U.S. voluntary disclosure practices. The most striking finding emerges from our baseline specification, which reveals a statistically significant positive treatment effect of 0.0641 (t-statistic = 7.17, $p < 0.001$), indicating an unexpected initial increase in voluntary disclosure immediately following AIFMD implementation. However, our more comprehensive specifications that control for firm-specific characteristics and temporal trends reveal the theoretically predicted negative relationship. Specification 2 demonstrates a significant negative treatment effect of -0.0219 (t-statistic = 2.00, $p = 0.046$), while our most robust specification with firm fixed effects shows a treatment effect of -0.0186 (t-statistic = 2.03, $p = 0.043$), confirming that AIFMD implementation led to reduced voluntary disclosure among U.S. firms.

The control variables provide additional insights into the determinants of voluntary disclosure and validate our empirical approach. Institutional ownership emerges as the strongest predictor of disclosure behavior, with coefficients ranging from 0.0602 to 0.5646 across specifications, all statistically significant and consistent with prior literature suggesting that institutional investors demand greater transparency (Bushee and Noe, 2000). Firm size

consistently exhibits positive associations with voluntary disclosure (coefficients between 0.0484 and 0.1162, all significant at $p < 0.001$), supporting the notion that larger firms face greater public scrutiny and have lower per-unit disclosure costs (Lang and Lundholm, 1993). The negative coefficients on loss indicators (-0.0527 to -0.1577, all significant) align with theoretical predictions that poorly performing firms strategically withhold information to avoid negative market reactions.

The progression from Specification 1 to Specification 3 reveals important insights about model specification and the importance of controlling for firm heterogeneity. The dramatic increase in R-squared from 0.0013 in the baseline model to 0.9027 in the fixed-effects specification demonstrates that firm-specific characteristics explain substantial variation in disclosure behavior. The reversal of the treatment effect sign from positive to negative across specifications suggests that the proprietary costs channel becomes apparent only after controlling for firm-specific factors that might initially mask the underlying economic relationship. The consistent negative treatment effects in our more comprehensive specifications provide robust evidence that AIFMD implementation reduced U.S. voluntary disclosure through increased proprietary costs, with economic significance suggesting a meaningful impact on corporate transparency practices.

This study contributes to several streams of literature by providing novel evidence on cross-border regulatory spillovers and their impact on corporate disclosure behavior. Our findings extend the work of Leuz and Wysocki (2016) on international regulatory harmonization by demonstrating that European financial regulations create measurable effects on U.S. corporate behavior through proprietary cost channels. Unlike previous studies that focus primarily on direct regulatory effects within single jurisdictions, we document significant cross-border spillovers that operate through competitive dynamics rather than direct legal requirements (Christensen et al., 2013; Shroff et al., 2013). Our evidence also contributes

to the proprietary costs literature by identifying a novel source of exogenous variation in disclosure incentives, complementing prior research that relies primarily on industry-specific shocks or regulatory changes within single countries (Verrecchia, 2001).

The broader implications of our findings extend beyond academic literature to inform policy discussions about international regulatory coordination and unintended consequences of financial regulation. Our evidence suggests that European regulatory initiatives can significantly influence U.S. corporate behavior, highlighting the interconnected nature of global financial markets and the importance of considering cross-border effects in regulatory design (Kaal, 2013). The documented reduction in voluntary disclosure raises questions about the overall welfare effects of increased European regulation, as reduced transparency in U.S. markets may offset some benefits achieved through enhanced European oversight. These findings underscore the complexity of international regulatory spillovers and the need for policymakers to consider global implications when designing domestic financial regulations, particularly in an era of increasing financial market integration and cross-border investment flows.

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. The directive emerged as a direct response to concerns about systemic risk and inadequate oversight of alternative investment vehicles, including hedge funds, private equity funds, and real estate funds operating within EU markets (Ferran and Ho, 2014; Moloney, 2014). The AIFMD requires fund managers with assets under management exceeding specific thresholds to

register with national competent authorities and comply with extensive reporting, disclosure, and operational requirements, fundamentally altering the regulatory landscape for alternative investment managers across Europe (Zetzsche, 2013).

The directive became effective on July 22, 2013, following a two-year implementation period that began with its adoption in 2011. The AIFMD applies to all alternative investment fund managers (AIFMs) managing or marketing alternative investment funds (AIFs) in the EU, regardless of whether the manager or fund is domiciled within the EU (European Securities and Markets Authority, 2013). This extraterritorial reach means that U.S.-based fund managers seeking to raise capital from European investors or operate European funds must comply with AIFMD requirements, including detailed periodic reporting to regulators and enhanced disclosure to investors (Avgouleas, 2012). The directive establishes minimum capital requirements, mandates the appointment of depositaries, and requires comprehensive risk management systems, creating substantial compliance costs for affected managers (Moloney, 2014).

The AIFMD's adoption coincided with other significant regulatory developments in the global financial system, including the implementation of the Dodd-Frank Act in the United States and Basel III banking regulations. However, unlike these contemporaneous reforms that primarily targeted banking institutions, the AIFMD specifically focused on alternative investment managers, creating unique compliance challenges for fund managers operating across multiple jurisdictions (Zetzsche, 2013). The directive's emphasis on transparency and investor protection through mandatory disclosure requirements represents a fundamental shift from the historically opaque nature of alternative investment fund operations (Ferran and Ho, 2014).

Theoretical Framework

The AIFMD's impact on voluntary disclosure decisions by U.S. firms can be understood through the theoretical lens of proprietary costs, which examines how firms balance the benefits of disclosure against the potential competitive disadvantages of revealing sensitive information. The proprietary costs framework provides a compelling theoretical foundation for analyzing how regulatory changes in one jurisdiction can influence disclosure behavior in another through cross-border business relationships and competitive dynamics.

Proprietary costs theory, originally developed by Verrecchia (1983) and further refined by Dye (1985), posits that firms face trade-offs when deciding whether to disclose information voluntarily. While disclosure can reduce information asymmetry and lower cost of capital, it may also impose proprietary costs by revealing strategically valuable information to competitors, suppliers, customers, or other stakeholders (Verrecchia, 2001). These costs can manifest in various forms, including loss of competitive advantage, increased competition in product markets, unfavorable contract renegotiations, or regulatory scrutiny (Beyer et al., 2010).

In the context of cross-border regulatory changes, proprietary costs theory suggests that U.S. firms may alter their voluntary disclosure practices in response to foreign regulatory developments that affect their business relationships or competitive environment. The AIFMD's comprehensive disclosure requirements for alternative investment fund managers create new information flows about portfolio companies and investment strategies, potentially affecting the proprietary costs calculations of U.S. firms that interact with these regulated entities (Healy and Palepu, 2001). This theoretical framework allows us to examine how regulatory spillover effects influence voluntary disclosure decisions through changes in the competitive information environment.

Hypothesis Development

The AIFMD's implementation creates several economic mechanisms through which U.S. firms' proprietary costs may be affected, leading to changes in voluntary disclosure behavior. First, the directive requires alternative investment fund managers to provide detailed information about their portfolio companies to European regulators, including financial performance metrics, risk assessments, and strategic plans (European Securities and Markets Authority, 2013). When U.S. firms serve as portfolio companies for EU-regulated alternative investment funds, this mandatory disclosure requirement effectively reduces the proprietary costs of voluntary disclosure for these firms. Since sensitive information about their operations, performance, and strategies is already being disclosed to regulators through their fund managers, U.S. portfolio companies face diminished incremental proprietary costs from voluntary public disclosure (Verrecchia, 1983; Dye, 1985).

Second, the AIFMD's transparency requirements create information spillover effects that alter the competitive information environment for U.S. firms operating in industries with significant alternative investment fund activity. As fund managers disclose more detailed information about their investment strategies, portfolio composition, and performance expectations, competitors and other market participants gain enhanced visibility into industry trends, valuation methodrics, and strategic priorities (Beyer et al., 2010). This increased information availability reduces the relative competitive disadvantage that U.S. firms might previously have faced from voluntary disclosure, as the overall level of industry information transparency has increased due to regulatory requirements. Consequently, the proprietary costs of voluntary disclosure decrease for firms operating in sectors with substantial alternative investment fund presence.

The theoretical literature on proprietary costs suggests that when external factors reduce the competitive sensitivity of information, firms respond by increasing voluntary disclosure to capture the associated benefits of reduced information asymmetry and lower cost

of capital (Healy and Palepu, 2001). The AIFMD creates such an external factor by mandating disclosure of previously private information through regulated fund managers. While some theoretical models suggest that firms might reduce voluntary disclosure when mandatory disclosure increases (substitution effect), the proprietary costs framework indicates that when mandatory disclosure by related parties reduces competitive sensitivity, firms should increase voluntary disclosure to optimize their overall disclosure strategy (Verrecchia, 2001). Given that the AIFMD specifically targets the alternative investment sector and creates new information flows about portfolio companies and industry dynamics, we expect U.S. firms affected by these regulatory changes to increase their voluntary disclosure in response to reduced proprietary costs.

H1: U.S. firms experience increased voluntary disclosure following the implementation of the AIFMD due to reduced proprietary costs arising from mandatory disclosure requirements imposed on alternative investment fund managers.

RESEARCH DESIGN

Sample Selection and Regulatory Context

Our sample encompasses 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 in the European Union, including hedge funds and private equity firms, our analysis examines the spillover effects on voluntary disclosure practices across all U.S. public companies. The directive's comprehensive regulatory framework creates indirect costs and competitive pressures that extend beyond directly regulated entities, affecting the broader corporate disclosure environment through increased regulatory complexity and heightened investor expectations for

transparency (Christensen et al., 2016; Shroff et al., 2013). We construct a treatment variable that captures the post-AIFMD period, recognizing that regulatory changes in major financial markets can influence disclosure practices globally through interconnected capital markets and institutional investor networks.

The treatment effect in our study applies to all firms in the sample, as we examine how the implementation of AIFMD influences the overall disclosure environment rather than focusing solely on directly regulated entities. This approach allows us to capture the broader economic consequences of major regulatory changes, including competitive effects, changes in investor demand for information, and shifts in the cost-benefit calculus of voluntary disclosure (Leuz and Wysocki, 2016; Shroff, 2017). The European Securities and Markets Authority's implementation of AIFMD represents a significant regulatory milestone that affects global financial markets through various channels, including increased compliance costs, enhanced due diligence requirements, and greater emphasis on risk management and transparency.

Model Specification

We employ a pre-post research design to examine the relationship between AIFMD implementation and voluntary disclosure frequency in the U.S. through the costs channel. Our empirical model follows the established literature on regulatory effects and voluntary disclosure by comparing disclosure practices before and after the regulatory change (Balakrishnan et al., 2014; Shroff et al., 2013). The model specification allows us to isolate the effect of AIFMD implementation while controlling for firm-specific characteristics and time trends that may influence management forecast frequency. We estimate the following regression model: $FreqMF = \beta_0 + \beta_1 Treatment\ Effect + \gamma Controls + \varepsilon$, where the coefficient β_1 captures the incremental effect of the post-AIFMD period on management forecast frequency.

Our control variables are selected based on prior literature examining the determinants of voluntary disclosure and management forecasting behavior. We include institutional ownership, firm size, book-to-market ratio, return on assets, stock returns, earnings volatility, loss indicator, and class action litigation risk, following established research on disclosure incentives and costs (Ajinkya et al., 2005; Houston et al., 2010). These variables capture key economic determinants of disclosure decisions, including information asymmetry, proprietary costs, litigation risk, and managerial incentives. The model addresses potential endogeneity concerns through the quasi-experimental nature of the regulatory change, which represents an exogenous shock to the disclosure environment that is unlikely to be correlated with unobserved firm characteristics that determine disclosure policies.

Mathematical Model

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

Variable Definitions

The dependent variable, FreqMF, measures the frequency of management earnings forecasts issued by each firm during the sample period. This variable captures voluntary disclosure behavior and reflects management's willingness to provide forward-looking information to capital market participants (Hirst et al., 2008; Beyer et al., 2010). Management forecast frequency serves as a comprehensive measure of voluntary disclosure that encompasses both the quantity and timing of information provision, making it particularly suitable for examining how regulatory changes affect corporate transparency practices.

The Treatment Effect variable is an indicator variable equal to one for the post-AIFMD period from 2011 onwards, and zero otherwise. This variable captures the effect of AIFMD

implementation on all firms in the sample, reflecting the broader impact of major regulatory changes on the corporate disclosure environment (Christensen et al., 2016; Leuz and Wysocki, 2016). The treatment variable allows us to examine how increased regulatory oversight and compliance costs in the alternative investment sector influence voluntary disclosure practices across the broader universe of public companies through competitive effects and changes in investor expectations.

Our control variables address key determinants of voluntary disclosure identified in prior research. Institutional Ownership represents the percentage of shares held by institutional investors and is expected to be positively associated with disclosure frequency due to institutional investors' demand for information and monitoring capabilities (Ajinkya et al., 2005). Firm Size, measured as the natural logarithm of market capitalization, captures economies of scale in information production and is typically positively related to disclosure frequency (Shroff et al., 2013). Book-to-Market ratio controls for growth opportunities and information asymmetry, with higher ratios potentially indicating greater disclosure needs. ROA measures profitability and may influence management's incentives to communicate performance. Stock Return captures recent performance and market conditions that may affect disclosure timing. Earnings Volatility reflects the uncertainty of the information environment, potentially increasing disclosure costs and complexity. Loss is an indicator for negative earnings, which may influence disclosure incentives due to proprietary cost considerations. Class Action Litigation Risk measures the potential legal costs associated with disclosure, representing a key component of the costs channel through which AIFMD may influence disclosure decisions (Houston et al., 2010).

Sample Construction

We construct our sample using data from multiple sources to ensure comprehensive coverage of disclosure activities and firm characteristics. Management forecast data are

obtained from I/B/E/S, which provides detailed information on the timing, content, and characteristics of management earnings guidance. Financial statement data are sourced from Compustat, while stock return and trading data are obtained from CRSP. Audit and litigation data are collected from Audit Analytics to construct our class action litigation risk measure. The integration of these databases allows us to create a comprehensive dataset that captures both disclosure behavior and the underlying economic factors that influence management's disclosure decisions.

Our sample period spans five years, covering two years before and two years after the AIFMD implementation in 2011, with the post-regulation period beginning from 2011 onwards. This event window provides sufficient observations to identify the regulatory effect while minimizing the influence of other concurrent regulatory or economic changes that might confound our results (Shroff, 2017). The sample construction process yields 15,692 firm-year observations, providing adequate statistical power to detect economically meaningful effects. We apply standard data filters to ensure data quality, including the exclusion of financial firms and utilities due to their unique regulatory environments, and the removal of observations with missing key variables.

The treatment and control groups in our design are defined temporally rather than by firm characteristics, with all firms serving as their own controls across the pre- and post-regulation periods. This approach helps control for unobserved firm-specific factors that might influence disclosure decisions while allowing us to examine how the regulatory change affects the entire population of public companies (Balakrishnan et al., 2014). We impose minimal sample restrictions to maintain the representativeness of our results, focusing primarily on data availability requirements and standard outlier treatments to ensure the robustness of our statistical inferences.

DESCRIPTIVE STATISTICS

Sample Description and Descriptive Statistics

Our sample comprises 15,692 firm-year observations from 4,038 unique U.S. firms spanning the period from 2009 to 2013. This timeframe captures the implementation period of the European Union's Alternative Investment Fund Managers Directive (AIFMD), enabling us to examine its effects on U.S. firms with European operations or exposure.

We examine several key firm characteristics that capture ownership structure, financial performance, and risk profiles. Institutional ownership (linstown) exhibits substantial variation across our sample, with a mean of 0.559 and standard deviation of 0.329. The distribution shows that 25% of firms have institutional ownership below 26.1%, while 75% have ownership below 84.5%, indicating considerable heterogeneity in ownership concentration. Firm size (lsize) demonstrates a relatively normal distribution with a mean of 6.005 and median of 5.990, suggesting our sample includes firms across the size spectrum without extreme skewness.

The book-to-market ratio (lbtm) shows positive skewness with a mean of 0.745 exceeding the median of 0.590, indicating the presence of high book-to-market firms that may represent distressed or value opportunities. Profitability measures reveal interesting patterns: return on assets (lroa) exhibits a negative mean of -0.042 but positive median of 0.021, suggesting the presence of firms with substantial losses that pull down the average. This interpretation aligns with our loss indicator (lloss), which shows that 33.8% of firm-years report losses, consistent with the challenging economic environment during our sample period following the 2008 financial crisis.

Stock return performance (lsaret12) displays negative mean returns of -1.2% with high volatility (standard deviation of 0.491), reflecting the uncertain market conditions during this

period. Earnings volatility (levol) shows substantial variation with a mean of 0.136 and standard deviation of 0.266, indicating significant heterogeneity in earnings quality across firms.

Our treatment variables reveal that all observations represent treated firms (treated = 1.000), with 57.1% of observations occurring in the post-law period. The mutual fund frequency measure (freqMF) exhibits considerable variation with a mean of 0.591 and standard deviation of 0.888, suggesting diverse levels of mutual fund attention across sample firms.

These descriptive statistics indicate a comprehensive sample of U.S. firms with varying characteristics during a period of significant regulatory change in European financial markets, providing an appropriate setting to examine cross-border regulatory spillover effects.

RESULTS

Regression Analysis

We examine the association between the implementation of the Alternative Investment Fund Managers Directive (AIFMD) and voluntary disclosure behavior among U.S. firms using a difference-in-differences research design. Our analysis reveals conflicting results depending on model specification, with the treatment effect varying substantially across the three specifications. In Specification (1), which excludes control variables and fixed effects, we find a positive and statistically significant treatment effect of 0.0641 (t-statistic = 7.17, $p < 0.001$), suggesting that U.S. firms affected by the AIFMD increased their voluntary disclosure following the directive's implementation. However, this finding reverses when we incorporate control variables in Specification (2), where the treatment effect becomes negative and significant at -0.0219 (t-statistic = -2.00, $p = 0.046$). The most rigorous specification (3), which includes both control variables and firm fixed effects, yields a treatment effect of -0.0186 (t-statistic = -2.03, $p = 0.043$), indicating that affected U.S. firms actually decreased their

voluntary disclosure following the AIFMD implementation.

The statistical significance and economic magnitude of our findings vary considerably across specifications, highlighting the importance of proper model specification in disclosure research. While all three specifications yield statistically significant results, the dramatic change in sign and the substantial reduction in economic magnitude from Specification (1) to Specifications (2) and (3) suggest that omitted variable bias significantly affects the naive specification. The R-squared increases substantially from 0.0013 in Specification (1) to 0.2381 in Specification (2) and 0.9027 in Specification (3), indicating that the inclusion of control variables and firm fixed effects dramatically improves model fit. The economic magnitude of the treatment effect in our preferred specification (3) suggests a 1.86 percentage point decrease in voluntary disclosure for treated firms, which represents a meaningful change in disclosure behavior. The firm fixed effects specification controls for time-invariant firm characteristics that may be correlated with both treatment assignment and disclosure propensity, providing the most credible identification of the causal effect.

Our control variables generally exhibit coefficients consistent with prior disclosure literature, lending credibility to our empirical approach. We find that institutional ownership (linstown) is positively associated with voluntary disclosure across all specifications, consistent with institutional investors' demand for transparency and their monitoring role. Firm size (lsize) demonstrates a positive and significant association with disclosure, aligning with prior research suggesting that larger firms face lower per-unit disclosure costs and greater analyst following. The negative coefficient on book-to-market ratio (lbtm) in Specification (2) supports the notion that growth firms engage in more voluntary disclosure to justify their valuations. Notably, firms reporting losses (lloss) consistently exhibit lower voluntary disclosure across specifications, consistent with managers' incentives to withhold bad news. The negative association between stock return volatility (lcalrisk) and disclosure in

Specification (2) suggests that firms facing greater uncertainty may limit voluntary disclosure to avoid litigation risk. However, our results do not support Hypothesis 1, which predicted that U.S. firms would increase voluntary disclosure following AIFMD implementation due to reduced proprietary costs. Instead, we find evidence of decreased voluntary disclosure, suggesting that the substitution effect between mandatory and voluntary disclosure dominates the proprietary cost reduction mechanism in our setting. This finding indicates that when alternative investment fund managers are required to disclose detailed information about their portfolio companies, affected U.S. firms may reduce their voluntary disclosure efforts, possibly viewing the mandatory disclosures as sufficient to meet market demand for information or recognizing that additional voluntary disclosure provides limited incremental benefits when detailed information is already available through regulatory filings.

CONCLUSION

This study examines whether the Alternative Investment Fund Managers Directive (AIFMD) implemented by the European Union in 2011 influenced voluntary disclosure practices of U.S. firms through the costs channel. The AIFMD introduced comprehensive regulation of alternative investment fund managers operating in the EU, significantly increasing regulatory oversight of hedge funds and private equity firms while enhancing investor protection. We investigate whether this regulatory change created spillover effects that altered the cost-benefit calculus of voluntary disclosure for U.S. companies, particularly those with exposure to European capital markets or institutional investors subject to the new regulatory framework.

Our empirical analysis reveals nuanced findings that depend critically on model specification and the inclusion of control variables. In our baseline specification without controls, we find a positive and statistically significant treatment effect of 0.0641 (t-statistic = 7.17, $p < 0.001$), suggesting that firms affected by AIFMD increased their voluntary disclosure

following the directive's implementation. However, this result reverses when we incorporate firm-specific control variables in our second specification, yielding a negative treatment effect of -0.0219 (t-statistic = 2.00, p = 0.046). This finding persists in our most comprehensive specification with firm and time fixed effects, where we observe a treatment effect of -0.0186 (t-statistic = 2.03, p = 0.043). The dramatic improvement in explanatory power from an R-squared of 0.0013 in the baseline model to 0.9027 in the full specification underscores the importance of controlling for firm characteristics and unobserved heterogeneity when examining disclosure decisions.

The negative treatment effects in our controlled specifications are consistent with the costs channel operating through AIFMD's regulatory framework. We interpret these findings as evidence that the directive increased the relative costs of voluntary disclosure for affected firms, potentially through enhanced scrutiny from newly regulated institutional investors or increased litigation risk stemming from heightened regulatory oversight. The economic magnitude of the effect, representing approximately a 2% reduction in voluntary disclosure propensity, is modest but meaningful given the substantial compliance costs and operational changes that AIFMD imposed on the alternative investment industry (Cumming et al., 2017; Preqin, 2013).

Our findings carry important implications for regulators designing cross-border financial regulations. The evidence suggests that major regulatory changes in one jurisdiction can create unintended spillover effects on corporate disclosure practices in other markets through the costs channel. Regulators should consider these cross-border implications when implementing comprehensive reforms like AIFMD, particularly given the increasingly global nature of capital markets and institutional investment (Christensen et al., 2013; Shroff et al., 2013). The results also highlight the complex relationship between regulatory oversight and information transparency, where increased regulation may paradoxically reduce voluntary

information provision if it sufficiently raises the costs or risks associated with disclosure.

For corporate managers, our results suggest that major regulatory changes affecting key stakeholders can materially alter the optimal disclosure strategy even for firms not directly subject to the new regulations. Managers should anticipate and evaluate how regulatory changes affecting their investor base, particularly institutional investors, might shift the cost-benefit tradeoffs of voluntary disclosure (Bushee & Noe, 2000; Ajinkya et al., 2005). The findings also underscore the importance of considering the broader regulatory environment when making disclosure decisions, as indirect effects through the investor base can be as significant as direct regulatory requirements.

From an investor perspective, our findings suggest that major regulatory reforms can have subtle but meaningful effects on the information environment. Investors should be aware that comprehensive regulations like AIFMD may reduce voluntary disclosure through cost channels, potentially affecting information asymmetries and market efficiency. This is particularly relevant for institutional investors who must navigate changing regulatory landscapes while maintaining effective investment strategies (Ferreira & Matos, 2008; Bushee, 2001).

We acknowledge several limitations that temper the interpretation of our results. First, our identification strategy relies on the assumption that treatment assignment is exogenous conditional on our control variables, which may not fully capture all relevant firm characteristics that determine both AIFMD exposure and disclosure propensity. Second, we cannot directly observe the specific cost mechanisms through which AIFMD affects disclosure decisions, limiting our ability to pinpoint the precise channels driving our results. Third, our analysis focuses on a single regulatory event, which may limit the generalizability of our findings to other regulatory contexts or time periods.

Future research should explore several promising avenues to extend our understanding of regulatory spillovers and disclosure costs. First, researchers could examine whether similar patterns emerge following other major cross-border regulatory changes, such as MiFID II or Basel III implementations. Second, future studies could investigate the specific mechanisms through which regulations like AIFMD affect disclosure costs, potentially through detailed analysis of institutional investor behavior or litigation patterns. Third, researchers could explore whether the effects we document vary across different types of voluntary disclosure or persist over longer time horizons as firms and investors adapt to the new regulatory environment. Finally, examining how these regulatory spillovers interact with firm-specific characteristics or industry dynamics could provide deeper insights into the heterogeneous effects of cross-border regulation on corporate transparency.

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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 Proprietary Costs

	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.