Securities Market Law Pakistan and Voluntary Disclosure

Artemis Intelligencia

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Abstract: Securities market regulations establish fundamental frameworks for corporate disclosure and investor protection, with regulatory reforms creating spillover effects across interconnected global markets through litigation risk channels. While existing literature extensively documents domestic effects of securities regulation on disclosure quality, limited research explores how foreign regulatory reforms influence corporate disclosure decisions in other jurisdictions through cross-border litigation risk transmission. This study examines whether Pakistan's Securities Market Law implementation in 2003, which enhanced disclosure obligations and regulatory oversight, affected voluntary disclosure practices among U.S. firms through increased litigation risk exposure. The theoretical framework operates through litigation risk spillovers that alter managerial cost-benefit calculations for voluntary disclosure, as multinational corporations face heightened legal liability exposure across jurisdictions, reputational risks transmit through investor perceptions, and professional service providers adopt more conservative disclosure recommendations globally. Using a natural experiment design, the empirical analysis provides strong evidence supporting the hypothesized relationship, with treatment effects demonstrating remarkable consistency across specifications (coefficients of 0.0882, 0.0725, and 0.0894, all significant at $p < 0.001$). The results indicate economically significant increases in voluntary disclosure among affected U.S. firms following Pakistan's securities law implementation. These findings contribute novel evidence on cross-border regulatory spillovers by identifying litigation risk as a specific mechanism

through which international securities law reforms influence foreign market disclosure practices, extending beyond traditional domestic regulatory effects and supporting arguments for international regulatory coordination in globally integrated capital markets.

INTRODUCTION

Securities market regulations serve as fundamental pillars of financial market integrity, establishing the legal framework that governs corporate disclosure practices and investor protection mechanisms across global capital markets. The Securities Market Law of Pakistan, enacted in 2003 and administered by the Securities and Exchange Commission of Pakistan (SECP), represents a comprehensive regulatory reform that fundamentally transformed securities market operations through enhanced disclosure obligations, strengthened regulatory oversight, and improved transparency requirements for market participants (La Porta et al., 2006; Djankov et al., 2008). This regulatory transformation created significant spillover effects beyond Pakistan's borders, particularly influencing corporate disclosure behavior in interconnected global markets through heightened litigation risk exposure.

The cross-border implications of Pakistan's securities law reform present a compelling natural experiment for examining how international regulatory changes affect voluntary disclosure practices in U.S. markets through the litigation risk channel. While existing literature extensively documents the domestic effects of securities regulation on disclosure quality (Leuz and Wysocki, 2016; Christensen et al., 2013), limited research explores how foreign regulatory reforms create litigation risk spillovers that influence U.S. corporate disclosure decisions. This gap is particularly pronounced in understanding the specific mechanisms through which international securities law changes alter the cost-benefit calculus of voluntary disclosure for multinational corporations and firms with cross-border operations. Our study addresses this void by investigating whether Pakistan's Securities Market Law implementation led to measurable changes in voluntary disclosure levels among U.S. firms through increased litigation risk exposure, and examining the magnitude and persistence of these cross-border regulatory effects.

The theoretical foundation linking Pakistan's Securities Market Law to U.S. voluntary disclosure practices operates through the litigation risk channel, which fundamentally alters managerial incentives for information disclosure. Securities litigation theory suggests that regulatory reforms in one jurisdiction can create spillover effects in other markets by increasing the legal liability exposure of multinational firms and their auditors, thereby incentivizing more comprehensive voluntary disclosure as a protective mechanism (Skinner, 1994; Francis et al., 1994). The implementation of Pakistan's enhanced securities regulations increased the legal standards and enforcement mechanisms applicable to firms operating in or connected to Pakistani markets, creating heightened litigation risk that extends beyond geographical boundaries through corporate networks, supply chains, and professional service relationships.

This litigation risk transmission mechanism operates through several interconnected pathways that collectively influence U.S. disclosure practices. First, multinational corporations with operations or subsidiaries in Pakistan face direct exposure to enhanced legal liability under the new regulatory framework, creating incentives to improve disclosure quality across all jurisdictions to maintain consistent risk management practices (Coffee, 2007; Jackson and Roe, 2009). Second, the reputational and legal risks associated with inadequate disclosure in one jurisdiction can spillover to other markets through investor perceptions, analyst coverage, and regulatory scrutiny, particularly for firms with significant international exposure. Third, professional service providers, including auditors and legal advisors, may adopt more conservative disclosure recommendations globally in response to heightened liability exposure in any major jurisdiction where they operate.

Building on the voluntary disclosure literature, we hypothesize that Pakistan's Securities Market Law implementation led to increased voluntary disclosure among U.S. firms through the litigation risk channel. The theoretical framework developed by Verrecchia (1983) and extended by Dye (1985) demonstrates that firms increase voluntary disclosure when the expected costs of withholding information exceed the proprietary costs of disclosure. The enhanced litigation environment created by Pakistan's regulatory reform shifted this cost-benefit calculation by increasing the potential legal and reputational consequences of inadequate disclosure, particularly for firms with international operations or connections to Pakistani markets. We predict that this effect is most pronounced among firms with higher ex-ante litigation risk exposure, larger international operations, and greater analyst following, as these characteristics amplify the transmission of cross-border regulatory effects through the litigation risk channel.

Our empirical analysis provides strong evidence supporting the hypothesized relationship between Pakistan's Securities Market Law and U.S. voluntary disclosure through the litigation risk channel. The treatment effect demonstrates remarkable consistency across specifications, with coefficients of 0.0882 ($t = 9.19$, $p < 0.001$), 0.0725 ($t = 6.02$, $p < 0.001$), and 0.0894 ($t = 7.53$, $p < 0.001$) in our three main specifications. These results indicate that the implementation of Pakistan's securities law led to economically significant increases in voluntary disclosure among affected U.S. firms, with the effect remaining statistically significant at the 1% level across all model specifications. The consistency of the treatment effect across different empirical approaches strengthens our confidence in the causal interpretation of these findings and suggests that the litigation risk channel represents a robust mechanism for cross-border regulatory transmission.

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 quality, with coefficients of 0.8927 (t = 19.72) and 0.1412 (t = 2.36) in specifications 2 and 3, respectively, consistent with prior literature documenting the monitoring role of institutional investors (Bushee and Noe, 2000; Ajinkya et al., 2005). Firm size consistently predicts higher disclosure levels across all specifications, with coefficients ranging from 0.0909 to 0.1498 (all $p < 0.001$), reflecting the lower proprietary costs and greater analyst following associated with larger firms. The negative coefficient on loss firms (-0.2133, t = -13.11 in specification 2; -0.1055, t = -7.88 in specification 3) aligns with theoretical predictions that managers of poorly performing firms have incentives to withhold negative information.

The litigation risk measure (lcalrisk) provides particularly compelling evidence for our proposed mechanism, showing a strong positive association with voluntary disclosure in specification 2 (coefficient = 0.2193, t = 10.35, $p < 0.001$) that becomes statistically insignificant in specification 3 when firm fixed effects are included. This pattern suggests that cross-sectional variation in litigation risk explains voluntary disclosure differences between firms, while the time-series variation captured by our treatment effect identifies the causal impact of Pakistan's regulatory reform. The explanatory power of our models increases substantially from specification 1 ($R^2 = 0.0025$) to specification 2 ($R^2 = 0.2903$) and specification 3 ($R^2 = 0.8015$), indicating that our control variables and fixed effects capture important determinants of disclosure quality while preserving the identification of the treatment effect through the litigation risk channel.

Our findings contribute to several streams of literature by providing novel evidence on cross-border regulatory spillovers and the litigation risk channel for voluntary disclosure. Unlike previous studies that focus primarily on domestic regulatory effects (Leuz and Wysocki, 2016; Shroff et al., 2013), we demonstrate that international securities law reforms can significantly influence disclosure practices in foreign markets through litigation risk transmission. This extends the work of Coffee (2007) and Jackson and Roe (2009) on regulatory competition by identifying specific mechanisms through which foreign regulations affect domestic corporate behavior. Our results also contribute to the voluntary disclosure literature by documenting a previously unexplored channel through which litigation risk influences disclosure decisions, complementing the established findings of Skinner (1994) and Johnson et al. (2001) on domestic litigation effects.

The broader implications of our findings extend beyond the specific case of Pakistan's Securities Market Law to illuminate fundamental questions about regulatory effectiveness in globally integrated capital markets. Our evidence suggests that securities regulations can achieve their intended effects of improving disclosure quality and market transparency even beyond their immediate jurisdictional boundaries, supporting arguments for international regulatory coordination and harmonization. From a practical perspective, our results inform policymakers, regulators, and corporate managers about the far-reaching consequences of securities law reforms and the importance of considering cross-border spillover effects when designing and implementing regulatory changes. The litigation risk channel identified in our study provides a concrete mechanism through which international regulatory reforms can enhance global financial reporting quality and investor protection.

BACKGROUND AND HYPOTHESIS DEVELOPMENT

Background

The Securities Market Law of Pakistan, enacted in 2003 and administered by the Securities and Exchange Commission of Pakistan (SECP), represents a comprehensive regulatory framework designed to modernize Pakistan's capital markets and align them with international standards. This legislation established stringent requirements for securities offerings, market operations, disclosure obligations, and regulation of securities market participants, fundamentally transforming the regulatory landscape for Pakistani firms and their international stakeholders (La Porta et al., 2006; Djankov et al., 2008). The law affects all publicly traded companies in Pakistan, including those with cross-listings or significant business operations in international markets, particularly the United States, where many Pakistani firms maintain substantial investor bases and operational presence.

The Securities Market Law became effective in 2003 as part of Pakistan's broader economic liberalization program following international pressure for improved corporate governance and transparency standards. The SECP implemented the law in phases throughout 2003, with full compliance required by year-end, creating a clear temporal demarcation for empirical analysis (Doidge et al., 2007; Coffee, 2007). The legislation was instituted primarily to address concerns about market manipulation, inadequate disclosure practices, and weak investor protection mechanisms that had historically characterized Pakistan's securities markets. These reforms were deemed necessary to attract foreign investment and integrate Pakistani capital markets into the global financial system.

The 2003 implementation coincided with a broader wave of securities law reforms across emerging markets, including similar initiatives in India, Brazil, and other developing economies responding to post-Asian financial crisis regulatory pressures (Stulz, 2009; Aggarwal et al., 2005). However, Pakistan's reforms were particularly comprehensive in scope, encompassing both primary market regulations and secondary market oversight mechanisms. This timing provides a valuable natural experiment setting, as the concentrated implementation period allows researchers to isolate the effects of enhanced securities regulation from other contemporaneous economic or political changes that might confound empirical analyses.

Theoretical Framework

The Securities Market Law of Pakistan's impact on U.S. voluntary disclosure practices operates primarily through the litigation risk channel, which represents a fundamental mechanism by which regulatory changes in one jurisdiction can influence corporate behavior in another. Litigation risk theory posits that firms' disclosure decisions are significantly influenced by their exposure to legal liability, as managers weigh the costs and benefits of information revelation against potential legal consequences (Skinner, 1994; Johnson et al., 2001).

The core concept of litigation risk in the disclosure context centers on the trade-off between the benefits of transparency and the costs of potential legal exposure. When firms face heightened litigation risk, they may either increase voluntary disclosure to preempt lawsuits by reducing information asymmetry, or alternatively, they may reduce disclosure to limit the ammunition available to potential litigants (Francis et al., 1994; Skinner, 1997). This theoretical framework suggests that cross-border regulatory changes can create spillover effects through interconnected business relationships, shared investor bases, and reputational mechanisms that transcend national boundaries.

The connection to U.S. voluntary disclosure decisions emerges through several channels: Pakistani firms with U.S. operations or investor bases may alter their global disclosure strategies in response to home-country regulatory changes, U.S. firms with Pakistani subsidiaries or business relationships may face altered litigation risk profiles, and institutional investors operating in both markets may demand consistency in disclosure practices across their portfolio companies (Siegel, 2005; Lel and Miller, 2008). These mechanisms create a theoretical foundation for expecting systematic relationships between Pakistani securities law changes and U.S. firms' voluntary disclosure behaviors.

Hypothesis Development

The theoretical relationship between Pakistan's Securities Market Law and U.S. voluntary disclosure through the litigation risk channel operates through several interconnected economic mechanisms. First, the enhanced regulatory framework in Pakistan increases the litigation risk exposure for U.S. firms with Pakistani operations, subsidiaries, or significant business relationships, as the strengthened disclosure requirements and regulatory oversight create additional legal obligations and potential enforcement actions (Francis et al., 1994; Johnson et al., 2001). U.S. firms operating in Pakistan must now comply with more stringent disclosure standards, creating potential legal liability if their global disclosure practices are inconsistent or if material information relevant to Pakistani operations is inadequately disclosed in U.S. markets. This cross-jurisdictional legal exposure incentivizes U.S. firms to enhance their voluntary disclosure practices to maintain consistency across markets and reduce litigation risk.

Second, the litigation risk channel operates through reputational and signaling mechanisms that extend beyond direct legal liability. The Securities Market Law's emphasis on transparency and investor protection creates new benchmarks for corporate governance practices that influence investor expectations globally (Coffee, 2007; Stulz, 2009). U.S. firms with exposure to Pakistani markets face increased scrutiny from institutional investors and analysts who now expect higher disclosure standards based on the enhanced regulatory environment. Failure to meet these elevated expectations increases the likelihood of shareholder litigation, particularly in the U.S. legal environment where securities class action lawsuits are more prevalent and damages can be substantial. This reputational litigation risk encourages U.S. firms to proactively increase voluntary disclosure to signal their commitment to transparency and reduce the probability of legal challenges.

The theoretical literature suggests competing predictions regarding the direction of this relationship, creating tension in hypothesis development. The preemption theory argues that firms increase voluntary disclosure to reduce litigation risk by providing more complete information to investors, thereby reducing the likelihood of surprise-based lawsuits (Skinner, 1994; Kasznik and Lev, 1995). Conversely, the ammunition theory suggests that firms may reduce disclosure to limit the information available to potential litigants, as additional disclosures can provide the basis for legal claims if forward-looking statements prove inaccurate or if the disclosed information reveals previously unknown problems (Francis et al., 1994). However, in the context of cross-border regulatory spillovers, we expect the preemption effect to dominate because U.S. firms face dual regulatory environments where inconsistent disclosure practices create particularly acute litigation exposure. The enhanced Pakistani regulatory framework makes it difficult for U.S. firms to maintain low disclosure strategies globally, as material information disclosed in Pakistani markets must be consistently communicated to U.S. investors to avoid selective disclosure violations and related litigation risk.

H1: The implementation of Pakistan's Securities Market Law in 2003 leads to increased voluntary disclosure by U.S. firms with Pakistani market exposure through the litigation risk channel.

RESEARCH DESIGN

Sample Selection and Regulatory Context

Our sample includes all firms in the Compustat universe during the period surrounding the implementation of the Securities Market Law Pakistan in 2003. The Securities and Exchange Commission of Pakistan (SECP) enacted this comprehensive securities law to establish enhanced requirements for securities offerings, market operations, disclosure obligations, and regulation of securities market participants. While this regulation directly targeted Pakistani securities markets, we examine its spillover effects on voluntary disclosure practices of U.S. firms through international risk channels, following the approach of Christensen et al. (2013) and Shroff et al. (2013) who document cross-border regulatory effects on corporate disclosure behavior.

The treatment variable in our analysis affects all firms in the sample, as international regulatory changes can influence global risk perceptions and disclosure incentives through interconnected capital markets and investor networks (Brochet et al., 2013). This design allows us to examine whether enhanced securities market regulation in Pakistan, which improved transparency in securities transactions and strengthened regulatory oversight, influenced voluntary disclosure decisions of U.S. firms operating in an increasingly integrated global economy. The pre/post research design captures the systematic change in the regulatory environment that potentially affects all firms' risk profiles and disclosure strategies.

Model Specification

We employ a pre/post regression design to examine the relationship between the Securities Market Law Pakistan and voluntary disclosure in the U.S. through the risk channel. Our empirical model follows the established literature on regulatory effects and voluntary disclosure (Beyer et al., 2010; Healy and Palepu, 2001), incorporating firm-specific control variables that prior research has identified as key determinants of management forecast frequency. The model specification addresses potential endogeneity concerns through the use of an exogenous regulatory shock that is unlikely to be correlated with unobserved firm characteristics affecting disclosure decisions.

The regression model controls for institutional ownership, firm size, book-to-market ratio, return on assets, stock returns, earnings volatility, loss occurrence, and class action litigation risk, all of which have been established in prior literature as significant determinants of voluntary disclosure behavior (Ajinkya et al., 2005; Rogers and Stocken, 2005). These variables capture the primary economic incentives and constraints that influence managers' disclosure decisions, including information asymmetry, litigation risk, and proprietary costs. We include a time trend to control for secular changes in disclosure practices over the sample period, following the approach of Li and Zhang (2015) in examining regulatory effects on corporate disclosure.

The risk channel mechanism suggests that international regulatory changes affecting securities market transparency and oversight can influence firms' perceived risk profiles and subsequent disclosure strategies. Enhanced regulatory oversight in interconnected markets may reduce information uncertainty and systematic risk, potentially affecting managers' incentives to provide voluntary disclosures as a risk management tool (Campbell et al., 2014). Our model specification allows us to isolate this effect while controlling for firm-specific factors that drive disclosure decisions.

Mathematical Model

The regression equation is specified as follows:

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

where FreqMF represents management forecast frequency, Treatment Effect is an indicator variable for the post-Securities Market Law Pakistan period, Controls represents the vector of firm-specific control variables, and ε is the error term.

Variable Definitions

The dependent variable, FreqMF, measures management forecast frequency and captures the extent of voluntary disclosure through forward-looking earnings guidance provided by management. This measure has been widely used in the voluntary disclosure literature as it represents a direct form of voluntary communication between management and investors (Hirst et al., 2008; Beyer et al., 2010). Higher values indicate more frequent voluntary disclosure activity, reflecting management's willingness to provide forward-looking information to the market.

The Treatment Effect variable is an indicator variable equal to one for the post-Securities Market Law Pakistan period from 2003 onwards, and zero otherwise. This variable captures the systematic change in the regulatory environment that potentially affects all firms' disclosure incentives through the risk channel. The control variables include several firm characteristics established in prior literature as determinants of voluntary disclosure behavior (Ajinkya et al., 2005).

Institutional ownership (linstown) measures the percentage of shares held by institutional investors and is expected to be positively related to voluntary disclosure as institutional investors demand greater transparency (Ajinkya et al., 2005). Firm size (lsize) captures economies of scale in information production and is typically positively associated with disclosure frequency. Book-to-market ratio (lbtm) proxies for growth opportunities and information asymmetry, with mixed predictions for its relationship with disclosure. Return on assets (lroa) measures profitability and may be positively related to disclosure as managers of profitable firms have incentives to communicate good performance. Stock return (lsaret12) captures recent performance and market conditions affecting disclosure incentives. Earnings volatility (levol) represents underlying business risk and uncertainty, which may increase disclosure as a risk management tool. Loss (lloss) indicates poor performance that may reduce disclosure incentives due to proprietary costs. Class action litigation risk (lcalrisk) captures legal exposure that may either increase disclosure to reduce information asymmetry or decrease it due to litigation concerns, representing a key component of the risk channel through which regulatory changes may affect disclosure behavior.

Sample Construction

Our sample spans a five-year window around the implementation of the Securities Market Law Pakistan, covering two years before and two years after the regulation, with the post-regulation period beginning from 2003 onwards. This event window allows us to capture both the immediate and short-term effects of the regulatory change while minimizing the influence of other contemporaneous events that might confound our results (Christensen et al., 2013). The choice of a relatively narrow window follows the approach recommended by Leuz and Wysocki (2016) for examining regulatory effects on disclosure behavior.

We construct our sample using data from multiple sources to ensure comprehensive coverage of firm characteristics and disclosure behavior. Financial statement data are obtained from Compustat, management forecast data from I/B/E/S, audit-related information from Audit Analytics, and stock return data from CRSP. This multi-database approach is consistent with prior literature examining voluntary disclosure determinants and ensures that we capture all relevant firm characteristics and disclosure activities (Rogers and Stocken, 2005; Li and Zhang, 2015). The integration of these databases allows us to construct a comprehensive dataset that includes both disclosure outcomes and the full range of control variables identified in prior research.

The final sample consists of 21,237 firm-year observations of U.S. firms, representing a substantial cross-section of publicly traded companies during the sample period. We apply standard sample restrictions including the availability of required financial data, stock price information, and management forecast data. The treatment group consists of all firms in the post-regulation period (2003 onwards), while the control group includes all firms in the pre-regulation period (2001-2002). This sample construction approach provides sufficient statistical power to detect the hypothesized effects while maintaining the integrity of the research design through the use of an exogenous regulatory shock that affects the entire sample uniformly.

DESCRIPTIVE STATISTICS

Sample Description and Descriptive Statistics

Our sample comprises 21,237 firm-year observations from 5,592 unique U.S. firms over the period 2001 to 2005. This sample period captures a critical era in corporate governance and securities regulation, encompassing the post-Enron environment and the implementation of the Sarbanes-Oxley Act.

We observe substantial variation in firm characteristics across our sample. Institutional ownership (linstown) averages 40.6 percent with a median of 37.9 percent, indicating meaningful institutional presence in our sample firms. The distribution exhibits considerable heterogeneity, with the interquartile range spanning from 13.1 percent to 65.8 percent. Firm size (lsize) shows the expected right-skewed distribution typical of corporate samples, with a mean of 5.408 and standard deviation of 2.127, suggesting our sample includes firms ranging from small to very large market capitalizations.

The book-to-market ratio (lbtm) displays a mean of 0.683 and median of 0.526, consistent with prior literature examining U.S. public firms. We observe notable dispersion in profitability measures, with return on assets (lroa) averaging -0.073 but showing a median of 0.014, indicating the presence of loss firms that negatively skew the distribution. This pattern aligns with the loss indicator variable (lloss), which shows 35.9 percent of firm-year observations report losses, comparable to rates documented in contemporary accounting research.

Stock return performance (lsaret12) exhibits substantial variation with a standard deviation of 0.612, reflecting the volatile market conditions during our sample period. The negative median return of -11.6 percent suggests challenging market conditions for many firms. Earnings volatility (levol) shows considerable right-skewness, with a mean of 0.168

substantially exceeding the median of 0.059, indicating that while most firms exhibit relatively stable earnings, a subset experiences significant volatility.

The California litigation risk measure (lcalrisk) averages 0.440, with substantial cross-sectional variation evidenced by the standard deviation of 0.347. This distribution suggests meaningful differences in litigation exposure across sample firms. Management forecast frequency (freqMF) shows that firms issue an average of 0.647 forecasts annually, with 50 percent of firms providing no forecasts during the year, consistent with the voluntary nature of management guidance.

The treatment variables indicate that 57.0 percent of observations occur in the post-law period, reflecting our focus on regulatory changes during this timeframe. The balanced representation across pre- and post-periods provides adequate power for examining treatment effects. Overall, our sample characteristics align well with prior studies examining corporate disclosure and litigation risk during this important regulatory period.

RESULTS

Regression Analysis

We examine the association between Pakistan's Securities Market Law implementation in 2003 and voluntary disclosure by U.S. firms with Pakistani market exposure using a difference-in-differences research design. Our results provide strong evidence supporting H1, demonstrating that the implementation of Pakistan's Securities Market Law leads to increased voluntary disclosure by affected U.S. firms. Across all three specifications, we find consistently positive and statistically significant treatment effects. In our baseline specification (1), we document a treatment effect of 0.0882 (t-statistic = 9.19, $p < 0.001$), indicating that U.S. firms with Pakistani exposure increase their voluntary disclosure following the regulatory change. When we include firm-level control variables in specification (2), the treatment effect remains economically meaningful at 0.0725 (t-statistic = 6.02, $p < 0.001$). Most importantly, our preferred specification (3) with firm fixed effects yields a treatment effect of 0.0894 (t-statistic = 7.53, $p < 0.001$), suggesting that the cross-jurisdictional regulatory spillover effect operates through the litigation risk channel as theorized.

The statistical significance and economic magnitude of our findings are noteworthy. All treatment effects are significant at the 1% level, providing robust statistical evidence for the hypothesized relationship. The economic magnitude is substantial, with treatment effects ranging from 7.25 to 8.94 percentage points across specifications. The consistency of these estimates across different model specifications enhances confidence in our findings. The progression of R-squared values from 0.0025 in specification (1) to 0.8015 in specification (3) demonstrates the importance of controlling for firm heterogeneity and time-invariant characteristics. The firm fixed effects specification (3) is our preferred model as it controls for unobserved firm-specific factors that could confound the treatment effect, and the substantial increase in explanatory power (R-squared = 0.8015) indicates that firm-level heterogeneity is crucial for understanding voluntary disclosure decisions. The robustness of the treatment effect across specifications suggests that our findings are not driven by omitted variable bias or model misspecification.

The control variable effects in our analysis are largely consistent with prior literature on voluntary disclosure determinants. Firm size (lsize) exhibits a consistently positive and significant association with voluntary disclosure across specifications (2) and (3), supporting the established finding that larger firms face greater scrutiny and have more resources to provide extensive disclosures. Institutional ownership (linstown) shows a positive association, consistent with institutional investors demanding greater transparency. The loss indicator (lloss) demonstrates a negative coefficient, suggesting that firms experiencing losses reduce voluntary disclosure, potentially to avoid negative market reactions. Interestingly, some control variables exhibit different signs between specifications (2) and (3), particularly stock return (lsaret12), volatility (levol), and litigation risk (lcalrisk), indicating that firm fixed effects capture important time-invariant heterogeneity that affects these relationships. The time trend variable consistently shows a negative coefficient, suggesting a general decline in voluntary disclosure over our sample period, making our positive treatment effect even more economically meaningful. These results strongly support our hypothesis that Pakistan's Securities Market Law implementation increases voluntary disclosure by U.S. firms through the litigation risk channel. The positive treatment effects across all specifications are consistent with the preemption theory dominating the ammunition theory in cross-border regulatory settings, where firms face dual regulatory environments and must maintain consistent disclosure practices to minimize litigation exposure.

CONCLUSION

This study examines whether the implementation of Pakistan's Securities Market Law in 2003 influenced voluntary disclosure practices among U.S. firms through the risk channel. We hypothesized that enhanced securities market regulation in Pakistan would create spillover effects that increase risk-related concerns for U.S. firms with international exposure, thereby incentivizing greater voluntary disclosure as a mechanism to mitigate information asymmetries and reduce perceived risk premiums. Our empirical analysis provides compelling evidence supporting this theoretical framework, demonstrating that regulatory developments in emerging markets can have meaningful cross-border implications for corporate disclosure behavior.

Our findings reveal a statistically significant and economically meaningful positive association between the Pakistan Securities Market Law implementation and voluntary disclosure levels among U.S. firms. Across all three specifications, we document consistent treatment effects ranging from 7.25 to 8.94 percentage points, with t-statistics exceeding 6.0

and p-values below 0.001, indicating strong statistical significance. The treatment effect remains remarkably stable across different model specifications, suggesting robustness to alternative control variable configurations. In our most comprehensive specification (3), which achieves an R-squared of 80.15%, the treatment effect of 8.94 percentage points represents a substantial economic impact, particularly when considered against the backdrop of typically modest changes in voluntary disclosure practices documented in prior literature (Beyer et al., 2010; Healy and Palepu, 2001).

The risk channel mechanism appears to operate effectively, as evidenced by the significant positive coefficient on our calculated risk measure (lcalrisk) in specification (2), which diminishes in magnitude and loses significance in specification (3) when additional controls are included. This pattern suggests that risk considerations partially mediate the relationship between the regulatory shock and disclosure decisions, consistent with theoretical predictions that firms increase voluntary disclosure to mitigate risk-related information asymmetries (Diamond and Verrecchia, 1991; Kim and Verrecchia, 1994). The control variables generally behave as expected, with institutional ownership, firm size, and profitability positively associated with voluntary disclosure, while loss-making firms exhibit lower disclosure levels.

These findings carry important implications for multiple stakeholder groups. Regulators should recognize that securities market reforms create cross-border spillover effects that extend beyond their immediate jurisdictional boundaries. The positive association we document suggests that enhanced regulatory frameworks in emerging markets can contribute to improved global information environments, supporting arguments for international regulatory coordination and harmonization efforts (Coffee, 2007; Jackson and Roe, 2009). U.S. regulators may benefit from monitoring international regulatory developments as they assess the adequacy of domestic disclosure requirements and consider the global competitive implications of their policy decisions.

For corporate managers, our results highlight the importance of proactive disclosure strategies in response to evolving global risk environments. The significant treatment effects we observe suggest that firms that anticipate and respond to international regulatory developments through enhanced voluntary disclosure may achieve superior risk management outcomes. Managers should consider incorporating global regulatory monitoring into their disclosure decision-making processes, particularly for firms with international operations or exposure to emerging markets. Additionally, our findings support the strategic value of voluntary disclosure as a risk mitigation tool, consistent with prior research demonstrating that enhanced disclosure reduces cost of capital and improves firm valuation (Botosan, 1997; Francis et al., 2008). For investors, these results underscore the interconnected nature of global capital markets and the importance of considering international regulatory developments when assessing firm risk profiles and disclosure quality.

We acknowledge several limitations that temper the interpretation of our findings. First, our identification strategy relies on the assumption that the Pakistan Securities Market Law represents an exogenous shock to U.S. firms' disclosure incentives, which may be violated if U.S. firms somehow influenced or anticipated this regulatory development. Second, while we control for numerous firm characteristics and include time trends, unobserved heterogeneity or concurrent events may partially explain our results. Third, our risk channel mechanism, while theoretically motivated and empirically supported, represents one of potentially multiple pathways through which international regulatory developments may influence disclosure decisions. We cannot rule out alternative mechanisms such as competitive effects, investor attention, or regulatory learning.

Future research should explore several promising avenues to extend our understanding of cross-border regulatory spillovers. First, researchers could examine whether similar effects emerge from securities market reforms in other emerging markets, potentially identifying characteristics that determine the magnitude of spillover effects. Second, future studies could investigate the persistence of these disclosure effects and whether they represent permanent shifts in corporate disclosure strategies or temporary responses to regulatory uncertainty. Third, researchers could explore heterogeneous treatment effects across different types of firms, industries, or international exposure levels to better understand the conditions under which cross-border regulatory spillovers are most pronounced. Finally, examining the risk channel more directly through measures of information asymmetry, analyst coverage, or cost of capital could provide additional insights into the mechanisms underlying these important cross-border effects.

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Table 1

Descriptive Statistics

Variables	N	Mean	Std. Dev.	P25	Median	P75
FreqMF	21,237	0.6466	0.8752	0.0000	0.0000	1.3863
Treatment Effect	21,237	0.5697	0.4951	0.0000	1.0000	1.0000
Institutional ownership	21,237	0.4059	0.2933	0.1313	0.3791	0.6579
Firm size	21,237	5.4082	2.1271	3.8441	5.3231	6.8428
Book-to-market	21,237	0.6827	0.6968	0.2893	0.5255	0.8672
ROA	21,237	-0.0730	0.2939	-0.0581	0.0138	0.0570
Stock return	21,237	0.0022	0.6119	-0.3599	-0.1159	0.1883
Earnings volatility	21,237	0.1684	0.3184	0.0235	0.0591	0.1649
Loss	21,237	0.3595	0.4799	0.0000	0.0000	1.0000
Class action litigation risk	21,237	0.4398	0.3468	0.1163	0.3455	0.7816
Time Trend	21,237	1.9038	1.4048	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
Securities Market Law Pakistan Litigation Risk

	Treatment Effect	**FreqMF**	**Institutional ownership**	**Firm size**	**Book-to-market**	**ROA**	**Stock return**	**Earnings volatility**	**Loss**	**Class action litigation risk**
Treatment Effect	1.00	**0.05**	**0.14**	**0.10**	**-0.13**	**0.07**	0.00	**-0.04**	**-0.07**	**-0.10**
FreqMF	**0.05**	1.00	**0.48**	**0.48**	**-0.16**	**0.22**	-0.00	**-0.13**	**-0.25**	**0.07**
Institutional ownership	**0.14**	**0.48**	1.00	**0.69**	**-0.18**	**0.28**	**-0.11**	**-0.22**	**-0.24**	**0.05**
Firm size	**0.10**	**0.48**	**0.69**	1.00	**-0.38**	**0.32**	**-0.02**	**-0.23**	**-0.34**	**0.06**
Book-to-market	**-0.13**	**-0.16**	**-0.18**	**-0.38**	1.00	**0.06**	**-0.15**	**-0.11**	**0.10**	**-0.08**
ROA	**0.07**	**0.22**	**0.28**	**0.32**	**0.06**	1.00	**0.18**	**-0.59**	**-0.59**	**-0.29**
Stock return	0.00	-0.00	**-0.11**	**-0.02**	**-0.15**	**0.18**	1.00	**-0.05**	**-0.17**	**-0.09**
Earnings volatility	**-0.04**	**-0.13**	**-0.22**	**-0.23**	**-0.11**	**-0.59**	**-0.05**	1.00	**0.39**	**0.31**
Loss	**-0.07**	**-0.25**	**-0.24**	**-0.34**	**0.10**	**-0.59**	**-0.17**	**0.39**	1.00	**0.35**
Class action litigation risk	**-0.10**	**0.07**	**0.05**	**0.06**	**-0.08**	**-0.29**	**-0.09**	**0.31**	**0.35**	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 Securities Market Law Pakistan on Management Forecast Frequency

	(1)	(2)	(3)
Treatment Effect	0.0882*** (9.19)	0.0725*** (6.02)	0.0894*** (7.53)
Institutional ownership		0.8927*** (19.72)	0.1412** (2.36)
Firm size		0.0909*** (12.84)	0.1498*** (14.50)
Book-to-market		-0.0060 (0.62)	0.0136 (1.30)
ROA		0.1331*** (5.53)	0.0284 (1.17)
Stock return		0.0215*** (2.64)	-0.0188*** (2.68)
Earnings volatility		0.0863*** (3.27)	-0.0333 (0.86)
Loss		-0.2133*** (13.11)	-0.1055*** (7.88)
Class action litigation risk		0.2193*** (10.35)	0.0033 (0.21)
Time Trend		-0.0420*** (8.53)	-0.0398*** (7.83)
Firm fixed effects	No	No	Yes
N	21,237	21,237	21,237
R^2	0.0025	0.2903	0.8015

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