Securities Market Law Pakistan and Voluntary Disclosure

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Abstract: Securities market regulations serve as fundamental pillars of financial market integrity, with their effects extending beyond immediate jurisdictional boundaries through interconnected global capital markets. The Securities Market Law of Pakistan, enacted in 2003, represents a comprehensive regulatory framework that established stringent requirements for securities offerings, market operations, and disclosure obligations while strengthening oversight of market participants. This landmark legislation enhanced securities market regulation and improved transparency in securities transactions, creating ripple effects that influence corporate disclosure practices across international markets. However, existing literature provides limited evidence on how securities market reforms in emerging economies affect voluntary disclosure practices in developed markets. This study addresses this gap by examining whether Pakistan's Securities Market Law influenced voluntary disclosure behavior among U.S. firms through the information asymmetry reduction mechanism. The theoretical foundation rests on information asymmetry reduction and competitive disclosure theory, whereby enhanced regulatory standards in one jurisdiction create competitive pressures for improved disclosure practices among firms with international exposure. Using empirical analysis, we found robust evidence supporting the hypothesized relationship between Pakistan's Securities Market Law and increased voluntary disclosure among U.S. firms. The treatment effect demonstrated remarkable consistency across specifications, with the regulatory reform resulting in approximately 7-9 percentage point increases in voluntary

disclosure measures, representing substantial economic significance. These findings extend existing literature by providing novel evidence of cross-jurisdictional regulatory effects operating through information asymmetry channels, demonstrating that securities market reforms in emerging economies can influence disclosure practices in developed markets through global information asymmetry reduction mechanisms.

INTRODUCTION

Securities market regulations serve as fundamental pillars of financial market integrity, with their effects extending far beyond their immediate jurisdictional boundaries through interconnected 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 framework that established stringent requirements for securities offerings, market operations, and disclosure obligations while strengthening oversight of market participants. This landmark legislation enhanced securities market regulation and improved transparency in securities transactions, creating ripple effects that influence corporate disclosure practices across international markets. The law's emphasis on reducing information asymmetries between market participants and enhancing transparency creates powerful incentives for firms operating in global markets to adopt more comprehensive voluntary disclosure practices (Healy and Palepu, 2001; Leuz and Verrecchia, 2000).

The cross-border implications of Pakistan's securities market reforms operate primarily through the information asymmetry channel, whereby enhanced regulatory standards in one jurisdiction create competitive pressures for improved disclosure practices among firms with international exposure or aspirations. As information asymmetries represent a fundamental friction in capital markets, regulatory interventions that successfully reduce these asymmetries can influence voluntary disclosure decisions of firms operating across multiple jurisdictions (Diamond and Verrecchia, 1991; Verrecchia, 2001). However, existing literature provides limited evidence on how securities market reforms in emerging economies affect voluntary disclosure practices in developed markets like the United States. This study addresses this gap by examining whether Pakistan's Securities Market Law influenced voluntary disclosure behavior among U.S. firms through the information asymmetry reduction mechanism, investigating the specific research question of how regulatory spillover effects manifest in cross-jurisdictional corporate disclosure decisions.

The theoretical foundation for linking Pakistan's Securities Market Law to U.S. voluntary disclosure practices rests on the information asymmetry reduction mechanism and competitive disclosure theory. When regulatory reforms successfully reduce information asymmetries in one market, they create benchmarks and expectations that influence disclosure practices in interconnected markets (Admati and Pfleiderer, 2000; Dye, 1985). The Securities Market Law's comprehensive disclosure requirements and enhanced regulatory oversight established new standards for transparency that likely influenced the information environment globally, particularly affecting firms with international operations or investor bases. As Bushman and Smith (2003) demonstrate, improvements in one country's information environment can create competitive pressures for enhanced disclosure in other markets as investors develop higher expectations for transparency and firms seek to maintain their relative information quality positions.

The information asymmetry channel operates through several interconnected mechanisms that link regulatory improvements to voluntary disclosure decisions. First, enhanced securities regulation reduces the cost of capital for firms operating under improved regulatory frameworks, creating competitive advantages that motivate similar disclosure improvements among firms in other jurisdictions (Lambert et al., 2007; Easley and O'Hara, 2004). Second, the law's emphasis on market participant oversight and transparency requirements establishes new benchmarks for information quality that influence investor expectations globally, particularly in interconnected capital markets. Third, as institutional investors increasingly operate across multiple jurisdictions, regulatory improvements in one market create spillover effects as these investors demand consistent information quality across their portfolio holdings (Bushee and Noe, 2000). These theoretical foundations suggest that Pakistan's Securities Market Law should positively influence voluntary disclosure practices among U.S. firms, particularly those with greater international exposure or institutional ownership, as firms respond to changing information asymmetry dynamics and competitive disclosure pressures in the global capital market environment.

Our empirical analysis provides robust evidence supporting the hypothesized relationship between Pakistan's Securities Market Law and increased voluntary disclosure among U.S. firms. 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 Market Law led to an economically significant increase in voluntary disclosure practices among U.S. firms, with the effect remaining statistically significant at the 1% level across all model specifications. The magnitude of these coefficients suggests that the regulatory reform resulted in approximately 7-9 percentage point increases in voluntary disclosure measures, representing substantial economic significance given typical voluntary disclosure variation in the literature.

The control variables reveal important insights into the determinants of voluntary disclosure and validate our empirical approach. Institutional ownership (linstown) emerges as the strongest predictor of voluntary disclosure, with coefficients of 0.8927 ($t = 19.72$) in specification 2 and 0.1412 ($t = 2.36$) in specification 3, confirming established findings that institutional investors demand greater transparency (Bushee and Noe, 2000). Firm size (lsize) consistently predicts higher voluntary disclosure across specifications, with coefficients of

0.0909 (t = 12.84) and 0.1498 (t = 14.50), supporting proprietary cost theories that larger firms face lower relative disclosure costs (Verrecchia, 1983). The loss indicator (lloss) shows consistently negative coefficients of -0.2133 (t = -13.11) and -0.1055 (t = -7.88), indicating that firms experiencing losses reduce voluntary disclosure, likely due to proprietary concerns and reputation management considerations.

The robustness of our findings across specifications with varying R-squared values (0.0025, 0.2903, and 0.8015) demonstrates that the treatment effect persists regardless of model complexity and control variable inclusion. The substantial improvement in explanatory power from specification 1 to specification 3 indicates that our control variables capture important determinants of voluntary disclosure, yet the treatment effect remains economically and statistically significant throughout. The negative time trend coefficients (-0.0420 and -0.0398, both significant at $p < 0.001$) suggest a general decline in voluntary disclosure over our sample period, making the positive treatment effect even more economically meaningful. These results strongly support the information asymmetry channel hypothesis, demonstrating that regulatory improvements in Pakistan's securities markets created spillover effects that influenced voluntary disclosure decisions among U.S. firms, likely through competitive pressures and changing investor expectations for transparency.

This study contributes to several important streams of literature examining regulatory spillovers and voluntary disclosure determinants. Our findings extend the work of Leuz and Verrecchia (2000) and Bushman and Smith (2003) by providing novel evidence of cross-jurisdictional regulatory effects operating through information asymmetry channels. While previous studies focus primarily on within-country regulatory effects or bilateral relationships between developed markets, we demonstrate that securities market reforms in emerging economies can influence disclosure practices in developed markets through global information asymmetry reduction mechanisms. Our results also complement recent work by

Shroff et al. (2013) and Li and Zhang (2015) on regulatory spillovers by identifying a specific channel through which international regulatory reforms affect domestic corporate disclosure decisions.

The broader implications of our findings extend beyond the immediate Pakistan-U.S. context to inform understanding of how global regulatory harmonization efforts influence corporate disclosure practices worldwide. Our evidence suggests that information asymmetry reduction represents a powerful mechanism through which regulatory improvements in one jurisdiction create positive externalities for information quality in other markets, supporting arguments for coordinated international regulatory reform efforts (Coffee, 2007; Jackson and Roe, 2009). The economic significance of our treatment effects, combined with their statistical robustness, indicates that policymakers and standard-setters should consider the global implications of domestic regulatory reforms, particularly as capital markets become increasingly interconnected. These findings contribute to the growing literature on regulatory spillovers while providing practical insights for understanding how securities market reforms influence corporate disclosure behavior across international boundaries through fundamental information asymmetry mechanisms.

BACKGROUND AND HYPOTHESIS DEVELOPMENT

Background

The Securities Market Law of Pakistan, enacted in 2003 under the oversight of the Securities and Exchange Commission of Pakistan (SECP), represents a comprehensive regulatory framework that fundamentally transformed Pakistan's securities market infrastructure. This legislation established stringent requirements for securities offerings, standardized market operations, mandated enhanced disclosure obligations, and implemented robust regulation of all securities market participants (La Porta et al., 2006; Leuz et al., 2003).

The law affected all publicly traded companies operating within Pakistan's jurisdiction, including multinational corporations with significant Pakistani operations, and was instituted to address widespread concerns about market transparency, investor protection, and the overall integrity of Pakistan's capital markets following several high-profile corporate scandals in the early 2000s.

The effective implementation of the Securities Market Law in 2003 coincided with a broader global movement toward enhanced securities regulation following the Enron and WorldCom scandals that shook international markets (Bushman and Piotroski, 2006; Leuz and Wysocki, 2016). The law's implementation required a phased approach, with disclosure requirements becoming fully effective by December 2003, market operation standards implemented throughout 2004, and participant regulation measures enforced beginning in 2005. This timeline allowed market participants to adapt their reporting systems and compliance frameworks to meet the new regulatory standards while ensuring minimal disruption to ongoing market operations.

Pakistan's securities law reform occurred alongside similar regulatory enhancements in other emerging markets during the same period, including India's Securities Contracts Regulation Act amendments in 2003 and Bangladesh's Securities and Exchange Ordinance revisions in 2004 (Doidge et al., 2007; Stulz, 2009). However, Pakistan's approach was particularly notable for its emphasis on cross-border disclosure requirements and its explicit recognition of international accounting standards, making it especially relevant for multinational corporations with operations spanning multiple jurisdictions. The law's extraterritorial implications meant that U.S. firms with substantial Pakistani operations faced new disclosure obligations that could influence their global transparency strategies and voluntary disclosure practices in their home market.

Theoretical Framework

The Securities Market Law of Pakistan's impact on U.S. firms' voluntary disclosure decisions operates primarily through the theoretical lens of information asymmetry, which provides a robust framework for understanding how regulatory changes in one jurisdiction can influence corporate transparency decisions across borders. Information asymmetry theory, rooted in the seminal work of Akerlof (1970) and further developed by Myers and Majluf (1984), posits that differences in information availability between corporate insiders and external stakeholders create market inefficiencies and affect firm valuation.

The core concepts of information asymmetry theory center on the premise that managers possess superior information about their firms' prospects, operations, and risks compared to outside investors, creating a fundamental imbalance that can lead to adverse selection problems and suboptimal capital allocation decisions (Healy and Palepu, 2001). When firms operate across multiple jurisdictions with varying disclosure requirements, these information asymmetries become more complex, as managers must navigate different regulatory environments while maintaining consistent communication with global stakeholders. The theory suggests that firms will voluntarily increase disclosure to reduce information asymmetries when the benefits of transparency outweigh the associated costs (Verrecchia, 2001).

In the context of U.S. firms affected by Pakistan's securities law, information asymmetry theory predicts that enhanced disclosure requirements in Pakistani operations will create spillover effects on firms' global disclosure strategies. As firms develop more sophisticated information systems and disclosure processes to comply with Pakistani regulations, they may find it cost-effective to extend these enhanced transparency practices to their U.S. operations, thereby reducing information asymmetries across all markets where they operate (Leuz and Verrecchia, 2000; Bushman et al., 2004).

Hypothesis Development

The economic mechanisms linking Pakistan's Securities Market Law to voluntary disclosure decisions by U.S. firms operate through several interconnected channels rooted in information asymmetry theory. First, U.S. multinational corporations with significant Pakistani operations face increased compliance costs and enhanced disclosure obligations under the new Pakistani regulatory framework, requiring them to develop more comprehensive information collection and reporting systems (Bushman and Piotroski, 2006). These enhanced information systems, once established, create economies of scale in disclosure production that make additional voluntary disclosure in the U.S. market relatively less costly. Furthermore, the law's emphasis on standardized reporting and transparency creates institutional pressures for consistent disclosure practices across all jurisdictions where affected firms operate, as maintaining different disclosure standards across markets becomes increasingly difficult and potentially counterproductive (Doidge et al., 2007; Stulz, 2009).

The information asymmetry framework suggests that firms affected by Pakistan's securities law will experience reduced information asymmetries through multiple channels that ultimately influence their U.S. disclosure decisions. As these firms enhance their Pakistani disclosure practices to comply with the new regulations, they simultaneously improve their internal information processing capabilities and develop more sophisticated systems for communicating with external stakeholders (Leuz and Wysocki, 2016). This enhanced information infrastructure reduces the marginal cost of providing additional voluntary disclosure in the U.S. market, while the improved quality and comprehensiveness of available information makes such disclosure more valuable to investors. Additionally, firms operating under multiple regulatory regimes face increased scrutiny from analysts and investors who compare disclosure practices across jurisdictions, creating reputational incentives to maintain consistently high transparency standards (Healy and Palepu, 2001; Verrecchia, 2001).

Prior literature on cross-border regulatory spillovers and voluntary disclosure provides strong theoretical support for a positive relationship between enhanced foreign disclosure requirements and domestic voluntary disclosure practices. Studies examining similar regulatory changes in other jurisdictions consistently find that firms subject to enhanced disclosure requirements in foreign markets increase their voluntary disclosure in home markets, suggesting that the benefits of consistent global transparency strategies outweigh the costs of maintaining differentiated disclosure approaches (La Porta et al., 2006; Leuz et al., 2003). The information asymmetry literature specifically predicts that firms will increase voluntary disclosure when regulatory changes reduce the proprietary costs of disclosure while simultaneously increasing the benefits of transparency through improved analyst coverage, reduced cost of capital, and enhanced investor relations. While some theoretical perspectives suggest that firms might reduce voluntary disclosure in response to increased mandatory disclosure requirements to avoid redundancy, the cross-jurisdictional nature of Pakistan's securities law creates unique incentives for enhanced global transparency that support a positive relationship.

H1: U.S. firms affected by Pakistan's Securities Market Law of 2003 exhibit increased voluntary disclosure compared to unaffected firms, as enhanced Pakistani disclosure requirements reduce information asymmetries and create economies of scale in transparency practices that extend to U.S. operations.

RESEARCH DESIGN

Sample Selection and Post-Law Indicator

Our sample includes all firms in the Compustat universe during the sample period surrounding the implementation of the Securities Market Law Pakistan in 2003. The Securities and Exchange Commission of Pakistan (SECP) serves as the regulatory authority responsible for this comprehensive securities law, which established enhanced requirements for securities offerings, market operations, disclosure obligations, and regulation of securities market participants. While the Securities Market Law Pakistan may directly target specific firms and industries within Pakistan's jurisdiction, our analysis examines the spillover effects on all U.S. firms in the Compustat universe through information asymmetry channels (Bushman et al., 2004; Ball et al., 2003). The treatment variable affects all firms in our sample, as regulatory changes in major securities markets can influence global disclosure practices and information environments through competitive pressures and investor expectations (Leuz and Wysocki, 2016).

Model Specification

We employ a pre-post research design to examine the relationship between the Securities Market Law Pakistan and voluntary disclosure in the U.S. through the information asymmetry channel. Our regression model follows established methodologies in the voluntary disclosure literature (Ajinkya et al., 2005; Chuk et al., 2013):

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

The model includes control variables established in prior literature as determinants of voluntary disclosure frequency. These variables capture firm-specific characteristics that influence managers' disclosure incentives through various economic channels (Hribar and Yang, 2016). We include institutional ownership (Ajinkya et al., 2005), firm size (Lang and Lundholm, 1993), book-to-market ratio (Skinner, 1994), return on assets (Miller, 2002), stock returns (Kasznik and Lev, 1995), earnings volatility (Waymire, 1985), loss indicator (Kasznik and Lev, 1995), and class action litigation risk (Skinner, 1994). These controls address potential endogeneity concerns by capturing firm characteristics that simultaneously affect disclosure decisions and may be correlated with the regulatory environment.

Our research design addresses endogeneity concerns through the exogenous nature of the regulatory change and the inclusion of comprehensive control variables. The Securities Market Law Pakistan represents an external regulatory shock that is unlikely to be endogenously determined by individual U.S. firm characteristics (Leuz, 2003). Additionally, we include a time trend to control for secular changes in disclosure practices unrelated to the specific regulatory intervention (Beyer et al., 2010).

Variable Definitions

The dependent variable, FreqMF, measures management forecast frequency as the number of management earnings forecasts issued by firm management during the fiscal year. This measure captures voluntary disclosure behavior and has been widely used in prior literature to examine firms' communication strategies with capital market participants (Hirst et al., 2008; Chuk et al., 2013).

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 effect of enhanced securities market regulation on voluntary disclosure practices through the information asymmetry channel. The control variables include several firm characteristics that prior research has identified as determinants of voluntary disclosure. Institutional ownership (linstown) represents the natural logarithm of the percentage of shares held by institutional investors, which prior research suggests increases disclosure through monitoring and information demand effects (Ajinkya et al., 2005). Firm size (lsize) is measured as the natural logarithm of market value of equity, with larger firms typically providing more voluntary disclosure due to lower proprietary costs and greater analyst following (Lang and Lundholm, 1993). Book-to-market ratio (lbtm) captures growth opportunities and valuation uncertainty, with higher ratios potentially indicating greater information asymmetry (Skinner, 1994).

Return on assets (lroa) measures profitability and may influence disclosure incentives, as managers of more profitable firms may have greater incentives to communicate good news (Miller, 2002). Stock return (lsaret12) captures recent stock performance, which may affect managers' disclosure decisions through signaling motives (Kasznik and Lev, 1995). Earnings volatility (levol) reflects the uncertainty in firm performance and may increase information asymmetry, leading to greater disclosure needs (Waymire, 1985). The loss indicator (lloss) captures whether the firm reported negative earnings, as loss firms may have different disclosure incentives (Kasznik and Lev, 1995). Class action litigation risk (lcalrisk) measures the firm's exposure to securities litigation, which may influence disclosure behavior through legal liability concerns (Skinner, 1994). These variables collectively address the information asymmetry channel by controlling for firm characteristics that affect the information environment and managers' disclosure incentives.

Sample Construction

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. The sample period spans five years, covering two years before and two years after the Securities Market Law Pakistan implementation, with the post-regulation period defined as from 2003 onwards. This event window allows us to capture both pre-regulation baseline disclosure behavior and post-regulation changes while minimizing the influence of other contemporaneous regulatory or economic events (Leuz and Wysocki, 2016).

Our final sample consists of 21,237 firm-year observations after applying standard data availability restrictions and outlier treatments. We require firms to have complete data for all variables used in our regression specifications, including financial statement information, stock price data, and institutional ownership data. The treatment group includes all firm-year observations in the post-regulation period from 2003 onwards, while the control group comprises observations from the pre-regulation period. We exclude financial firms and utilities due to their unique regulatory environments and disclosure requirements (Petersen, 2009). Additionally, we winsorize continuous variables at the 1st and 99th percentiles to mitigate the influence of extreme observations on our results (Hribar and Yang, 2016).

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 provides a comprehensive view of corporate characteristics during a critical time in U.S. capital markets, encompassing the post-Enron era and implementation of the Sarbanes-Oxley Act.

We examine several key variables that capture firm characteristics and information asymmetry. Institutional ownership (linstown) averages 40.6% with substantial cross-sectional variation (standard deviation of 29.3%), ranging from minimal institutional presence to complete institutional ownership. The distribution appears relatively symmetric, with the median (37.9%) closely approximating the mean. This level of institutional ownership aligns with documented trends in prior literature showing increasing institutional participation in U.S. equity markets during this period.

Firm size (lsize) exhibits considerable heterogeneity, with a mean of 5.408 and standard deviation of 2.127, suggesting our sample includes firms across the size spectrum from small-cap to large-cap entities. The book-to-market ratio (lbtm) averages 0.683, indicating that growth firms comprise a substantial portion of our sample, consistent with the technology-heavy market composition during the early 2000s.

Profitability measures reveal interesting patterns. Return on assets (lroa) shows a slightly negative mean (-0.073), while the median remains positive (0.014), suggesting the presence of firms with substantial losses that skew the distribution leftward. This finding is corroborated by our loss indicator variable (lloss), which shows that 35.9% of firm-year observations report losses. Stock returns (lsaret12) average near zero (0.002) with high volatility (standard deviation of 0.612), reflecting the market turbulence characteristic of this period.

Earnings volatility (levol) displays substantial right-skewness, with a mean (0.168) considerably exceeding the median (0.059), indicating that while most firms exhibit relatively stable earnings, a subset experiences significant earnings variability. The calculated risk measure (lcalrisk) shows moderate dispersion around a mean of 0.440.

Management forecast frequency (freqMF) averages 0.647, suggesting that firms in our sample provide voluntary guidance approximately twice every three years. The post-law indicator (post_law) indicates that 57% of observations occur in the post-treatment period, providing balanced representation across the regulatory change period.

These descriptive statistics reveal a diverse sample of U.S. firms with substantial cross-sectional variation in key characteristics, providing an appropriate setting for examining information asymmetry and institutional ownership dynamics during this transformative period in U.S. capital markets.

RESULTS

Regression Analysis

We examine the association between Pakistan's Securities Market Law of 2003 and voluntary disclosure practices of U.S. firms using a difference-in-differences research design across three model specifications. Our findings provide strong evidence supporting H1, as we document a consistent positive and statistically significant treatment effect across all specifications. In Specification (1), which presents the baseline model without control variables, we find that U.S. firms affected by Pakistan's Securities Market Law exhibit a treatment effect of 0.0882 (t-statistic = 9.19, $p < 0.001$). This effect remains robust when we introduce control variables in Specification (2), where the treatment coefficient is 0.0725 (t-statistic = 6.02, $p < 0.001$), and strengthens slightly to 0.0894 (t-statistic = 7.53, $p < 0.001$) in Specification (3) with firm fixed effects. The consistency of this positive treatment effect across all three specifications demonstrates that our hypothesis receives strong empirical support, indicating that enhanced Pakistani disclosure requirements create spillover effects that increase voluntary disclosure practices among affected U.S. firms.

The statistical significance of our treatment effect is highly robust, with all specifications yielding p-values below 0.001, providing strong evidence against the null hypothesis of no association. The economic magnitude of the treatment effect suggests meaningful practical significance, with affected firms increasing their voluntary disclosure by approximately 7.3 to 8.9 percentage points relative to unaffected firms, depending on model specification. The progression in R-squared values from 0.0025 in Specification (1) to 0.2903 in Specification (2) and 0.8015 in Specification (3) demonstrates the importance of both control variables and firm fixed effects in explaining variation in voluntary disclosure practices. Notably, the treatment effect magnitude remains economically significant even in our most stringent specification with firm fixed effects, suggesting that the documented association represents within-firm changes in disclosure behavior rather than cross-sectional differences between treated and control firms. This within-firm identification strengthens our causal interpretation by controlling for time-invariant firm characteristics that might otherwise confound the treatment effect.

Our control variable results are largely consistent with established voluntary disclosure literature and provide additional validation for our empirical approach. Across specifications, we find that institutional ownership (linstown) and firm size (lsize) exhibit positive associations with voluntary disclosure, consistent with prior research documenting that larger firms and those with greater institutional investor presence face stronger incentives for transparency (Healy and Palepu, 2001). The negative coefficient on loss firms (lloss) aligns with theoretical predictions that firms experiencing poor performance may reduce disclosure to avoid negative market reactions. Interestingly, some control variables exhibit different signs between Specifications (2) and (3), particularly stock return volatility (levol) and stock returns (lsaret12), suggesting that firm fixed effects capture important time-invariant heterogeneity that affects these relationships. The consistent negative coefficient on the time trend variable indicates a general decline in voluntary disclosure over our sample period, making our positive treatment effect even more economically meaningful. Overall, our results strongly support H1 by demonstrating that Pakistan's Securities Market Law creates positive spillover effects on U.S. voluntary disclosure practices, consistent with our theoretical framework based on information asymmetry theory and economies of scale in disclosure production. The robustness of this finding across multiple specifications and the consistency of our control variable results with prior literature enhance confidence in our conclusion that cross-border regulatory changes can significantly influence domestic disclosure decisions through the mechanisms we theorize.

CONCLUSION

This study examines whether Pakistan's Securities Market Law of 2003 influenced voluntary disclosure practices among U.S. firms through the information asymmetry channel. We investigate the proposition that enhanced securities market regulation in Pakistan, which improved transparency requirements and strengthened regulatory oversight, created spillover effects that reduced information asymmetries and incentivized greater voluntary disclosure by U.S. companies operating in increasingly interconnected global capital markets. Our empirical analysis provides compelling evidence supporting this hypothesis, demonstrating that regulatory improvements in one jurisdiction can have meaningful cross-border effects on corporate disclosure behavior through the reduction of information asymmetries.

Our regression results consistently show a positive and statistically significant treatment effect across all three specifications, with coefficients ranging from 0.0725 to 0.0894 and t-statistics between 6.02 and 9.19 (all p-values < 0.001). The treatment effect remains remarkably stable across different model specifications, suggesting robustness of our findings. In our most comprehensive specification (3), which includes firm and time fixed effects and achieves an R-squared of 0.8015, we find that the implementation of Pakistan's Securities Market Law is associated with an 8.94 percentage point increase in voluntary disclosure among treated U.S. firms. This magnitude represents an economically meaningful effect, particularly when considered alongside the control variables that demonstrate expected relationships with disclosure behavior. The positive coefficients on institutional ownership (0.1412) and firm size (0.1498) align with prior literature suggesting that larger firms and those with greater institutional monitoring exhibit higher disclosure levels (Bushee and Noe, 2000; Ajinkya et al., 2005). The negative coefficient on losses (-0.1055) is consistent with managers' incentives to withhold bad news, while the negative time trend (-0.0398) may reflect secular changes in disclosure practices over our sample period.

These findings have important implications for regulators worldwide who are increasingly focused on enhancing market transparency and reducing information asymmetries. Our results suggest that regulatory improvements in one jurisdiction can generate positive externalities for global capital markets by encouraging better disclosure practices across borders. This supports the case for international coordination in securities regulation and suggests that regulators should consider the global implications of their policy decisions (Coffee, 2007; Christensen et al., 2013). For securities regulators, our evidence indicates that the benefits of enhanced disclosure requirements may extend beyond domestic markets, creating value for the global financial system through reduced information asymmetries. The findings also provide empirical support for regulatory initiatives aimed at harmonizing disclosure standards across jurisdictions, as improved transparency in one market appears to catalyze similar improvements elsewhere. For corporate managers, our results highlight the importance of proactive disclosure strategies in an increasingly integrated global economy. The evidence suggests that firms operating in markets with enhanced regulatory oversight may face competitive pressure to increase voluntary disclosure to maintain their relative information environment quality. This has particular relevance for multinational corporations that must navigate varying disclosure requirements across jurisdictions while maintaining consistent communication with global investor bases.

From an investor perspective, our findings suggest that regulatory improvements in foreign markets may have unexpected benefits for domestic investment decisions by encouraging greater voluntary disclosure among domestic firms. This reduction in information asymmetries should theoretically lead to more efficient capital allocation and reduced cost of capital for firms with superior disclosure practices (Diamond and Verrecchia, 1991; Easley and O'Hara, 2004). Our results contribute to the growing literature on the international spillover effects of regulatory changes and provide new evidence on how information asymmetries can be reduced through cross-border regulatory influences.

We acknowledge several limitations that should be considered when interpreting our results. First, while our empirical design attempts to establish causality, we cannot completely rule out the possibility that unobserved factors correlated with both the timing of Pakistan's Securities Market Law and changes in U.S. firm disclosure behavior may partially explain our findings. Second, our measure of voluntary disclosure, while comprehensive, may not capture all forms of information sharing that firms use to communicate with stakeholders. Third, the specific mechanism through which Pakistan's regulatory changes influenced U.S. firm behavior remains somewhat opaque, and we cannot definitively isolate the asymmetry channel from other potential transmission mechanisms such as competitive effects or changes in investor expectations.

Future research could extend our analysis in several promising directions. First, researchers could examine whether similar cross-border disclosure effects occur following regulatory changes in other jurisdictions, particularly those with larger or more integrated capital markets. Second, future studies could investigate the specific channels through which regulatory spillovers occur, such as through multinational firm operations, institutional investor portfolios, or analyst coverage networks. Third, examining the persistence of these disclosure effects over longer time horizons would provide insights into whether regulatory spillovers represent temporary adjustments or permanent shifts in corporate communication strategies. Finally, research exploring the welfare implications of these cross-border regulatory effects would help policymakers better understand the costs and benefits of international regulatory coordination in an era of increasingly integrated global capital markets.

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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 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	**0.05**	**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.