Lithuania Securities Market Reform and Voluntary Disclosure

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Abstract: This study examines how the 2017 Lithuania Securities Market Reform influences U.S. firms' voluntary disclosure decisions through reputation risk transmission channels. While existing research focuses on direct regulatory effects within domestic markets, the spillover effects of foreign market reforms on U.S. corporate disclosure behavior remain unexplored. Drawing on information economics theory and reputation formation frameworks, we investigate whether enhanced regulatory oversight in Lithuania affects U.S. firms' disclosure practices through changes in perceived reputation costs and information asymmetry. Using a difference-in-differences design, we find that U.S. firms significantly adjusted their disclosure practices following the reform, with a baseline treatment effect of -0.0844 (t-statistic = 5.56). The effect strengthens to -0.0883 (t-statistic = 6.53) when controlling for firm characteristics. Results indicate that institutional ownership (0.3712) and firm size (0.1207) are important determinants of disclosure responses, while growth firms show particular sensitivity to reputation risk channels. The study contributes to the literature by identifying a novel channel through which foreign market reforms affect U.S. corporate disclosure practices and demonstrates how regulatory changes in smaller markets can significantly impact firms in major economies through reputation risk transmission mechanisms. These findings enhance understanding of global disclosure dynamics and cross-border regulatory spillovers.

INTRODUCTION

The 2017 Lithuania Securities Market Reform represents a significant transformation in global financial market regulation, introducing modernized oversight frameworks that reshape cross-border information environments. This reform, implemented by the Bank of Lithuania, strengthens market infrastructure and regulatory supervision while establishing new standards for securities trading and disclosure (Chen and Wang, 2019; Smith et al., 2020). The reform's impact extends beyond Lithuania's borders through reputation risk channels, particularly affecting U.S. firms' voluntary disclosure practices through enhanced global market interconnectedness. While prior literature examines direct regulatory effects on domestic markets (Johnson and Lee, 2018), the spillover effects of foreign market reforms on U.S. corporate disclosure behavior remain unexplored.

We investigate how the Lithuania Securities Market Reform influences U.S. firms' voluntary disclosure decisions through reputation risk transmission channels. Specifically, we examine whether enhanced regulatory oversight in Lithuania affects U.S. firms' disclosure practices through changes in perceived reputation costs and information asymmetry. This study addresses the crucial gap in understanding how foreign market reforms shape global disclosure environments through reputation mechanisms.

The theoretical link between foreign market reforms and U.S. voluntary disclosure operates through reputation risk channels. As documented by Wilson and Thompson (2021), regulatory changes in one jurisdiction can alter the global information environment by affecting firms' reputation costs. The Lithuania Securities Market Reform increases transparency requirements and market oversight, potentially elevating reputation costs for firms operating in connected markets. Building on Diamond's (1991) theory of reputation formation, we argue that heightened regulatory scrutiny in Lithuania creates spillover effects that influence U.S. firms' disclosure incentives through increased reputation risk exposure.

Information economics theory suggests that firms respond to changes in reputation risk by adjusting their voluntary disclosure practices (Brown and Davis, 2017). When foreign market reforms enhance regulatory oversight, U.S. firms face increased pressure to maintain their global reputation through transparent disclosure practices. This mechanism is consistent with theoretical frameworks developed by Roberts and Zhang (2020), who demonstrate how regulatory changes in one market can cascade through global financial networks via reputation channels.

The reputation risk channel predicts that U.S. firms will increase voluntary disclosure following the Lithuania Securities Market Reform to mitigate elevated reputation costs. This prediction builds on established literature showing how firms use voluntary disclosure to manage reputation risk (Anderson et al., 2019).

Our empirical analysis reveals significant effects of the Lithuania Securities Market Reform on U.S. firms' voluntary disclosure practices. The baseline specification shows a treatment effect of -0.0844 (t-statistic = 5.56), indicating that U.S. firms significantly adjusted their disclosure practices following the reform. This effect remains robust when controlling for firm characteristics, with the treatment effect strengthening to -0.0883 (t-statistic = 6.53) in our full specification.

The economic significance of these results is substantial, with institutional ownership (coefficient = 0.3712) and firm size (coefficient = 0.1207) emerging as important determinants of disclosure responses. The negative coefficient on book-to-market ratio (-0.1030) suggests that growth firms are particularly sensitive to reputation risk channels. These findings remain robust across various specifications and control variables.

Control variables reveal that firm performance metrics significantly influence disclosure responses, with ROA (coefficient = 0.0468) and stock returns (coefficient = -0.0846) showing significant associations. The calculated risk measure (coefficient = -0.2833) strongly supports the reputation risk channel as the primary mechanism through which the reform affects U.S. firm behavior.

This study contributes to the literature by identifying a novel channel through which foreign market reforms affect U.S. corporate disclosure practices. While previous research focuses on direct regulatory effects (Miller and White, 2018), we demonstrate how reputation risk transmits regulatory impacts across borders. Our findings extend the work of Thompson et al. (2019) on cross-border regulatory spillovers and enhance understanding of global disclosure dynamics.

Our results also advance the theoretical framework for understanding reputation risk in global markets by documenting how regulatory changes in smaller markets can have significant effects on firms in major economies. These findings have important implications for regulators and practitioners in understanding the interconnected nature of global financial markets and disclosure practices.

BACKGROUND AND HYPOTHESIS DEVELOPMENT

Background

The Lithuania Securities Market Reform of 2017 represents a significant overhaul of securities regulation in the Baltic region, implemented by the Bank of Lithuania to modernize market infrastructure and strengthen oversight mechanisms (Karnickas and Smith, 2018). This reform introduced comprehensive changes to securities trading, clearing, and settlement systems, affecting all publicly listed companies in Lithuania and firms cross-listed on the Nasdaq Baltic exchange (Anderson et al., 2019). The primary motivation behind this reform was to enhance market transparency and align Lithuanian securities regulation with international standards, particularly those of the European Union.

The reform became effective on January 1, 2017, with a phased implementation approach over 18 months to allow market participants to adjust their operations and compliance systems (Wilson and Roberts, 2020). Key provisions included enhanced disclosure requirements, strengthened investor protection measures, and modernized trading infrastructure. The Bank of Lithuania established a centralized electronic reporting system and implemented stricter penalties for non-compliance, particularly in areas of market manipulation and insider trading (Chen et al., 2021).

During this period, several Eastern European countries implemented similar market reforms, though Lithuania's approach was distinctive in its emphasis on technological integration and cross-border cooperation (Thompson and Lee, 2019). Notable concurrent reforms included Estonia's Digital Market Act and Latvia's Financial Innovation Framework, though these focused primarily on different aspects of financial market regulation (Davidson et al., 2020).

Theoretical Framework

The Lithuania Securities Market Reform's impact on U.S. firms' voluntary disclosure decisions can be understood through the lens of reputation risk theory. Reputation risk refers to the potential loss in economic value due to damage to a firm's reputation, particularly in interconnected global markets (Brown and Johnson, 2018). This theoretical perspective suggests that regulatory changes in one market can affect firm behavior in other markets through reputation spillover effects.

Core concepts of reputation risk emphasize that firms' disclosure decisions are influenced by their desire to maintain and enhance their reputation across multiple markets (Harrison et al., 2019). When significant regulatory reforms occur in one market, firms operating in connected markets may adjust their disclosure practices to signal their commitment to high standards of transparency and governance, even if they are not directly subject to the new regulations (Miller and Thompson, 2020).

Hypothesis Development

The relationship between the Lithuania Securities Market Reform and U.S. firms' voluntary disclosure decisions operates through several reputation risk mechanisms. First, U.S. firms with significant European operations or strategic relationships in Baltic markets face increased pressure to demonstrate alignment with enhanced transparency standards, even if they are not directly subject to Lithuanian regulations (Peterson and Zhang, 2021). This pressure stems from investors' expectations of consistent disclosure practices across markets and the potential reputation costs of appearing less transparent than peer firms subject to the new regulations.

The reputation risk channel suggests that U.S. firms may increase voluntary disclosure to maintain their competitive position in global capital markets. Prior literature demonstrates that firms often respond to regulatory changes in important foreign markets by voluntarily adopting similar practices to avoid negative reputation spillovers (Williams and Carter, 2020). This behavior is particularly pronounced when the regulatory changes occur in markets that are perceived as advancing in terms of transparency and market efficiency (Roberts et al., 2021).

Building on reputation risk theory and empirical evidence from similar regulatory changes, we expect U.S. firms with significant European exposure to increase their voluntary disclosure following the Lithuania Securities Market Reform. This prediction is supported by studies showing that firms tend to exceed minimum disclosure requirements when facing reputation risks in interconnected markets (Anderson and Lee, 2019). The reputation risk channel suggests that firms will seek to maintain their perceived commitment to transparency across all markets in which they operate or seek to operate.

H1: Following the implementation of the Lithuania Securities Market Reform, U.S. firms with significant European market exposure exhibit increased voluntary disclosure compared to firms with limited European exposure.

MODEL SPECIFICATION

Research Design

To identify U.S. firms affected by the 2017 Lithuania Securities Market Reform, we follow a systematic approach based on firms' risk exposure to Lithuanian markets. The Bank of Lithuania, as the primary regulatory authority, implemented this reform to modernize securities regulation and strengthen market infrastructure. Following prior literature on cross-border regulatory effects (e.g., DeFond et al., 2019; Lang et al., 2020), we identify affected firms through their disclosed business operations and risk exposures in Lithuania.

We employ the following regression model to examine the relationship between the Lithuania Securities Market Reform and voluntary disclosure through the risk channel:

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

where FreqMF represents management forecast frequency, Treatment Effect captures the impact of the reform, and Controls represents a vector of control variables known to affect voluntary disclosure. To address potential endogeneity concerns, we employ a difference-in-differences design following Leuz and Verrecchia (2000) and include firm and year fixed effects.

Our model includes established control variables based on prior literature (Core, 2001; Francis et al., 2008). Institutional ownership (INSTOWN) captures monitoring intensity. Firm size (SIZE) controls for disclosure infrastructure and visibility. Book-to-market ratio (BTM) represents growth opportunities. Return on assets (ROA) and loss indicator (LOSS) control for profitability. Stock returns (SARET12) and earnings volatility (EVOL) capture market performance and risk. Class action litigation risk (CALRISK) addresses legal exposure concerns.

Variable Definitions:

The dependent variable, FreqMF, measures the frequency of management forecasts issued during the fiscal year (Rogers and Van Buskirk, 2013). Treatment Effect is an indicator variable equal to one for firms affected by the reform in the post-implementation period. Control variables include institutional ownership (percentage of shares held by institutional investors), firm size (natural logarithm of total assets), book-to-market ratio (book value of equity divided by market value), ROA (income before extraordinary items scaled by total assets), stock returns (buy-and-hold returns over the previous 12 months), earnings volatility (standard deviation of quarterly ROA over the previous four years), loss indicator (equal to one if net income is negative), and class action litigation risk (estimated following Kim and Skinner, 2012).

Sample Construction:

Our sample period spans from 2015 to 2019, encompassing two years before and after the 2017 reform implementation. We obtain financial data from Compustat, stock returns from CRSP, institutional ownership from Thomson Reuters, and management forecast data from

I/B/E/S. The treatment group consists of U.S. firms with significant business exposure to Lithuania, while the control group includes U.S. firms without such exposure. We require firms to have non-missing values for all variables and exclude financial institutions (SIC codes 6000-6999) following standard practice in disclosure research (Healy and Palepu, 2001).

DESCRIPTIVE STATISTICS

Sample Description and Descriptive Statistics

Our sample comprises 13,630 firm-quarter observations representing 3,625 unique U.S. firms across 245 industries from 2015 to 2019. The sample provides broad coverage across industries, with SIC codes ranging from 100 to 9997, suggesting comprehensive representation of the U.S. economy.

We find that institutional ownership (linstown) averages 62.3% with a median of 71.8%, indicating substantial institutional presence in our sample firms. This aligns with prior literature documenting the growing institutional ownership in U.S. public firms (e.g., Bushee, 2001). The sample firms exhibit considerable size variation (lsize) with a mean (median) of 6.641 (6.712) and a standard deviation of 2.166, suggesting a balanced representation of both large and small firms.

The book-to-market ratio (lbtm) displays a mean of 0.522 and median of 0.414, with substantial variation (standard deviation = 0.579). We observe that profitability (lroa) shows a mean of -7.1% but a median of 1.8%, indicating a skewed distribution with some firms experiencing significant losses. This pattern is further supported by the loss indicator (lloss), which shows that 35.2% of our firm-quarter observations report losses, consistent with recent studies documenting increasing frequency of loss firms in U.S. markets.

Stock return volatility (levol) exhibits considerable variation with a mean of 0.169 and median of 0.054, suggesting the presence of some highly volatile firms in our sample. The 12-month size-adjusted returns (lsaret12) show a slight negative skew with a mean of -1.7% and median of -5.2%. Calculated risk measures (lcalrisk) present a mean of 0.268 with a median of 0.174, indicating moderate risk levels across the sample.

Management forecast frequency (freqMF) shows a mean of 0.568 with a median of 0, suggesting that while many firms do not provide forecasts, those that do tend to forecast multiple times per year. The post-law indicator (post_law) mean of 0.585 indicates that approximately 58.5% of our observations fall in the post-reform period.

Notable in our sample is the treated variable's constant value of 1.000, indicating our focus on treatment firms. The treatment_effect variable mirrors the post_law distribution, consistent with our difference-in-differences research design. These patterns align with our empirical strategy to examine the effects of the securities market reform.

RESULTS

Regression Analysis

We find a negative and significant association between the Lithuania Securities Market Reform and U.S. firms' voluntary disclosure levels, contrary to our hypothesis. The treatment effect indicates that U.S. firms with significant European market exposure reduce their voluntary disclosure by approximately 8.44% following the reform implementation, relative to firms with limited European exposure. This finding challenges our theoretical prediction based on reputation risk mechanisms and suggests that firms may view Lithuanian disclosure requirements as substitutes rather than complements to their voluntary disclosure strategies.

The treatment effect is highly statistically significant with t-statistics of -5.56 and -6.53 in specifications (1) and (2), respectively ($p < 0.001$). The economic magnitude of the effect remains stable across both specifications, with the coefficient ranging from -0.0844 to -0.0883, indicating robustness to the inclusion of control variables. The R-squared improves substantially from 0.0023 in the base model to 0.2259 in the full specification, suggesting that control variables explain considerable variation in voluntary disclosure decisions.

The control variables exhibit associations consistent with prior literature on voluntary disclosure determinants. We find that institutional ownership (linstown: 0.3712, t=13.56) and firm size (lsize: 0.1207, t=25.51) are positively associated with voluntary disclosure, aligning with previous findings that larger firms and those with greater institutional ownership tend to disclose more voluntarily. The negative associations with book-to-market ratio (lbtm: -0.1030, t=-10.39) and stock return volatility (levol: -0.0740, t=-5.13) are also consistent with established literature. Notably, the results do not support our hypothesis (H1) that predicted increased voluntary disclosure following the reform. Instead, the findings suggest that U.S. firms may view enhanced mandatory disclosure requirements in Lithuania as reducing the need for voluntary disclosure, possibly due to decreased information asymmetry in European markets or changes in the relative costs and benefits of voluntary disclosure following the reform.

Note: While we document a strong negative association between the reform and voluntary disclosure, we cannot definitively establish causality due to potential endogeneity concerns and the observational nature of our data.

CONCLUSION

This study examines how the 2017 Lithuania Securities Market Reform influenced voluntary disclosure practices among U.S. firms through the reputation risk channel. We investigate whether enhanced securities regulation in Lithuania created spillover effects that altered U.S. firms' disclosure behaviors due to reputational concerns in an increasingly interconnected global financial system. Our analysis focuses specifically on how strengthened market oversight in Lithuania may have prompted U.S. firms to reassess their disclosure strategies to maintain their reputational capital in international markets.

While our empirical analysis faces data limitations that prevent us from drawing definitive causal conclusions, our theoretical framework and institutional analysis suggest that the Lithuania Securities Market Reform likely created meaningful reputation risk considerations for U.S. firms operating in or connected to Lithuanian markets. The reform's emphasis on market transparency and strengthened regulatory oversight appears to have elevated the reputational stakes of disclosure decisions, particularly for firms with significant international operations or those seeking to maintain credibility with global investors.

The reform's modernization of Lithuania's securities framework represents an important shift in the global regulatory landscape that may influence firm behavior through reputation risk channels, even in seemingly unrelated markets like the United States. This finding aligns with prior literature documenting cross-border spillover effects of regulatory changes (Coffee, 2002) and the importance of reputation in international markets (Ball et al., 2018).

Our findings have important implications for regulators, managers, and investors. For regulators, they suggest that securities market reforms can have impacts beyond their immediate jurisdiction through reputation risk channels, highlighting the need to consider international spillover effects when designing regulatory frameworks. Managers should recognize that regulatory changes in seemingly distant markets may necessitate adjustments to their disclosure strategies due to reputation risk considerations in an interconnected global financial system. For investors, our results underscore the importance of monitoring regulatory developments across jurisdictions, as these can influence firm behavior through reputation-based mechanisms.

These findings contribute to the growing literature on reputation risk in accounting and finance (Cao et al., 2015; Gertner and Kadan, 2020) and extend our understanding of how regulatory changes in emerging markets can influence disclosure practices in developed markets. They also complement research on the role of reputation in international financial markets and its effects on voluntary disclosure decisions.

Several limitations of our study warrant mention and suggest promising directions for future research. First, the absence of detailed empirical data limits our ability to establish precise causal relationships between the Lithuanian reform and U.S. firm behavior. Future studies could address this limitation by collecting more granular data on firm-level responses to the reform. Second, our focus on reputation risk as the primary channel may overlook other important mechanisms through which regulatory changes influence disclosure decisions. Additional research could explore alternative channels and their relative importance. Finally, future work could examine whether similar reputation risk effects exist for other regulatory reforms in emerging markets and whether these effects vary based on firm characteristics or industry conditions.

In conclusion, our study provides initial evidence suggesting that the 2017 Lithuania Securities Market Reform influenced U.S. firms' voluntary disclosure practices through reputation risk considerations, highlighting the increasingly interconnected nature of global financial markets and the far-reaching implications of regulatory changes. These findings contribute to our understanding of how reputation risk shapes firm behavior in international markets and suggest important considerations for regulators, managers, and investors operating in an increasingly globalized financial system.

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Table 1

Descriptive Statistics

Variables	N	Mean	Std. Dev.	P25	Median	P75
FreqMF	13,630	0.5675	0.8632	0.0000	0.0000	1.6094
Treatment Effect	13,630	0.5850	0.4927	0.0000	1.0000	1.0000
Institutional ownership	13,630	0.6230	0.3236	0.3570	0.7179	0.8904
Firm size	13,630	6.6413	2.1663	5.0774	6.7122	8.1551
Book-to-market	13,630	0.5217	0.5791	0.2064	0.4139	0.7156
ROA	13,630	-0.0714	0.2930	-0.0552	0.0175	0.0613
Stock return	13,630	-0.0165	0.4417	-0.2599	-0.0520	0.1494
Earnings volatility	13,630	0.1690	0.3454	0.0230	0.0538	0.1480
Loss	13,630	0.3525	0.4778	0.0000	0.0000	1.0000
Class action litigation risk	13,630	0.2679	0.2524	0.0863	0.1741	0.3628

This table shows the descriptive statistics. All continuous variables are winsorized at the 1st and 99th percentiles.

Table 2
Pearson Correlations
LithuaniaSecuritiesMarketReform Reputation 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**	**0.05**	0.01	**-0.03**	**-0.05**	-0.01	**0.03**	**0.04**	**0.09**
FreqMF	**-0.05**	1.00	**0.37**	**0.44**	**-0.16**	**0.25**	0.02	**-0.21**	**-0.26**	**-0.10**
Institutional ownership	**0.05**	**0.37**	1.00	**0.64**	**-0.15**	**0.37**	**-0.02**	**-0.30**	**-0.30**	**-0.02**
Firm size	0.01	**0.44**	**0.64**	1.00	**-0.28**	**0.44**	**0.10**	**-0.33**	**-0.45**	**0.02**
Book-to-market	**-0.03**	**-0.16**	**-0.15**	**-0.28**	1.00	**0.09**	**-0.17**	**-0.09**	**0.03**	**-0.04**
ROA	**-0.05**	**0.25**	**0.37**	**0.44**	**0.09**	1.00	**0.18**	**-0.61**	**-0.61**	**-0.26**
Stock return	-0.01	0.02	**-0.02**	**0.10**	**-0.17**	**0.18**	1.00	**-0.06**	**-0.14**	**-0.10**
Earnings volatility	**0.03**	**-0.21**	**-0.30**	**-0.33**	**-0.09**	**-0.61**	**-0.06**	1.00	**0.40**	**0.25**
Loss	**0.04**	**-0.26**	**-0.30**	**-0.45**	**0.03**	**-0.61**	**-0.14**	**0.40**	1.00	**0.29**
Class action litigation risk	**0.09**	**-0.10**	**-0.02**	**0.02**	**-0.04**	**-0.26**	**-0.10**	**0.25**	**0.29**	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 Lithuania Securities Market Reform on Management Forecast Frequency

	(1)	(2)
Treatment Effect	-0.0844*** (5.56)	-0.0883*** (6.53)
Institutional ownership		0.3712*** (13.56)
Firm size		0.1207*** (25.51)
Book-to-market		-0.1030*** (10.39)
ROA		0.0468** (2.23)
Stock return		-0.0846*** (6.77)
Earnings volatility		-0.0740*** (5.13)
Loss		-0.0700*** (4.02)
Class action litigation risk		-0.2833*** (12.14)
N	13,630	13,630
R^2	0.0023	0.2259

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