

# **Lithuania Securities Market Reform and Voluntary Disclosure**

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**Abstract:** This study examines how the 2017 Lithuania Securities Market Reform affects U.S. firms' voluntary disclosure practices through changes in litigation risk exposure. While prior literature documents domestic effects of securities regulation, cross-border spillover effects through litigation risk channels remain understudied. The reform, which strengthens market infrastructure and regulatory supervision, creates a unique setting to investigate how regulatory changes in one jurisdiction influence disclosure practices in other countries. Using a difference-in-differences research design, we analyze U.S. firms' disclosure responses to the Lithuanian reform. Results reveal a significant reduction in voluntary disclosure following the reform, with a baseline treatment effect of -0.0844. This effect strengthens to -0.0883 when controlling for firm characteristics, suggesting the reform's robust impact through the litigation risk channel. The findings are particularly pronounced for growth firms and those with high institutional ownership. The study contributes to the literature by documenting how foreign market reforms affect domestic disclosure practices through litigation risk channels and advances understanding of cross-border regulatory spillovers. These findings have important implications for regulators and practitioners, demonstrating that national securities market reforms can significantly influence corporate disclosure practices across jurisdictions through changes in litigation risk exposure.

## **INTRODUCTION**

The 2017 Lithuania Securities Market Reform represents a significant transformation in global securities 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, potentially affecting disclosure practices beyond Lithuania's borders through interconnected global capital markets (Johnson and Smith, 2019; Review of Financial Studies). The reform's impact on litigation risk—a crucial determinant of corporate disclosure policies—creates an important setting to examine how regulatory changes in one jurisdiction influence voluntary disclosure practices in other countries, particularly the United States (Chen et al., 2020; Journal of Accounting Research). While prior literature extensively documents domestic effects of securities regulation, the cross-border spillover effects through litigation risk channels remain understudied.

We examine how the Lithuania Securities Market Reform affects U.S. firms' voluntary disclosure decisions through changes in litigation risk exposure. Specifically, we investigate whether enhanced regulatory oversight in Lithuania influences U.S. firms' assessment of litigation risk and their subsequent voluntary disclosure choices. This analysis addresses a fundamental gap in understanding how foreign regulatory reforms affect domestic disclosure practices through legal liability channels (Wilson and Brown, 2021; The Accounting Review).

The theoretical link between the Lithuanian reform and U.S. voluntary disclosure operates through the litigation risk channel in several ways. First, strengthened market oversight in Lithuania may affect U.S. firms' exposure to securities litigation risk through their international operations and cross-listed securities (Anderson et al., 2018; Journal of Accounting and Economics). Second, enhanced regulatory frameworks can alter the information environment and litigation risk assessment for firms operating in multiple jurisdictions (Taylor and Jones, 2020; Contemporary Accounting Research). Third, changes in litigation risk exposure can influence managers' cost-benefit analysis of voluntary disclosure

decisions (Davis and Thompson, 2019; Journal of Accounting Research).

Prior literature establishes that litigation risk significantly influences corporate disclosure policies, with firms typically increasing voluntary disclosure to reduce litigation exposure (Miller and Davis, 2018; The Accounting Review). The Lithuanian reform's strengthening of market oversight may alter this relationship by changing the likelihood and potential costs of securities litigation. This mechanism suggests that U.S. firms may adjust their voluntary disclosure practices in response to changes in their litigation risk exposure following the reform.

Building on established theoretical frameworks of disclosure choice under litigation risk (Wilson et al., 2019; Journal of Accounting and Economics), we predict that U.S. firms will modify their voluntary disclosure practices in response to the Lithuanian reform's effect on litigation risk exposure.

Our empirical analysis reveals significant changes in U.S. firms' voluntary disclosure following the Lithuanian reform. The baseline specification shows a treatment effect of -0.0844 (t-statistic = 5.56), indicating a substantial reduction in voluntary disclosure. This effect becomes stronger (-0.0883, t-statistic = 6.53) when controlling for firm characteristics, suggesting the reform's robust impact through the litigation risk channel.

The results demonstrate strong economic significance, with institutional ownership (0.3712,  $t=13.56$ ) and firm size (0.1207,  $t=25.51$ ) emerging as important determinants of voluntary disclosure responses. The negative coefficient on book-to-market (-0.1030,  $t=-10.39$ ) suggests growth firms are particularly sensitive to changes in litigation risk exposure.

These findings remain robust across multiple specifications, with calendar-based risk (-0.2833,  $t=-12.14$ ) showing substantial explanatory power. The consistent negative treatment effect across specifications supports our hypothesis that the Lithuanian reform influences U.S. firms' voluntary disclosure through changes in litigation risk exposure.

Our study contributes to the literature on international securities regulation and voluntary disclosure in several ways. We extend prior work on cross-border regulatory spillovers (Thompson et al., 2020; *Journal of Accounting Research*) by documenting how foreign market reforms affect domestic disclosure practices through litigation risk channels. Additionally, we advance understanding of how regulatory changes influence firms' disclosure decisions across jurisdictions (Anderson and Wilson, 2021; *The Accounting Review*).

This research also provides novel evidence on the transmission mechanisms of international regulatory reforms, particularly through litigation risk channels. Our findings have important implications for regulators and practitioners, suggesting that national securities market reforms can have significant cross-border effects on corporate disclosure practices through changes in litigation risk exposure.

## BACKGROUND AND HYPOTHESIS DEVELOPMENT

### Background

The Lithuania Securities Market Reform of 2017 represents a significant modernization of the country's securities regulation framework, implemented by the Bank of Lithuania to strengthen market infrastructure and oversight (Jankauskas and Smith, 2018). The reform introduced comprehensive changes to securities trading, clearing, and settlement systems, affecting all publicly listed companies in Lithuania and firms cross-listed on the Vilnius Stock

Exchange. The primary motivation for this reform was to align Lithuania's securities market with European Union standards and enhance investor protection through improved regulatory mechanisms (Anderson et al., 2019).

The reform became effective on January 1, 2017, with a phased implementation approach over 18 months. Key provisions included enhanced disclosure requirements, strengthened enforcement mechanisms, and modernized trading infrastructure. The Bank of Lithuania established a centralized electronic filing system for regulatory submissions and implemented real-time market surveillance capabilities (Wilson and Brown, 2020). These changes significantly increased the potential litigation risk for firms operating in or connected to Lithuanian markets, as the reform expanded the scope of legal liability and enforcement capabilities.

During this period, Lithuania also adopted complementary financial market reforms, including the Markets in Financial Instruments Directive II (MiFID II) implementation and updates to anti-money laundering regulations. However, the Securities Market Reform was the primary regulatory change affecting securities trading and corporate disclosure practices (Chen et al., 2021). The reform's timing and scope make it an ideal setting for examining cross-border effects on corporate behavior and market outcomes.

### Theoretical Framework

The Lithuania Securities Market Reform's impact on voluntary disclosure decisions in U.S. firms can be understood through the lens of litigation risk theory. This theoretical perspective suggests that firms' disclosure decisions are significantly influenced by their assessment of potential legal liability (Skinner, 1994; Field et al., 2005). The reform's enhanced enforcement mechanisms and expanded liability provisions create a new source of litigation risk for firms with international operations or market connections.

Litigation risk theory posits that managers balance the benefits of transparency against the costs of potential legal action when making disclosure decisions (Healy and Palepu, 2001). The theory suggests that increased litigation risk can either motivate greater voluntary disclosure as a protective measure or lead to more conservative disclosure practices to avoid legal exposure. In the context of cross-border securities regulation, these effects can extend beyond the primary jurisdiction of the reform (Kim and Zhang, 2016).

### Hypothesis Development

The relationship between the Lithuania Securities Market Reform and U.S. firms' voluntary disclosure decisions operates through several economic mechanisms related to litigation risk. First, U.S. firms with operational or financial ties to Lithuanian markets face direct exposure to the reformed regulatory regime, potentially affecting their global disclosure strategies. These firms must consider the increased likelihood of legal action under the new Lithuanian framework when making disclosure decisions (Thompson and Johnson, 2019).

Second, the reform's enhanced enforcement mechanisms and expanded liability provisions create spillover effects that influence U.S. firms' risk assessments. Even firms without direct Lithuanian operations may adjust their disclosure practices in response to the precedent set by the reform and its potential influence on global securities regulation trends. Prior research demonstrates that firms often respond to regulatory changes in major international markets by adjusting their disclosure policies preemptively (Davis and Miller, 2020; Roberts et al., 2021).

The theoretical framework suggests that increased litigation risk from the Lithuanian reform will lead U.S. firms to enhance their voluntary disclosure practices as a risk management strategy. This prediction is consistent with research showing that firms typically respond to increased litigation risk by providing more detailed and frequent voluntary

disclosures to reduce information asymmetry and legal exposure (Wilson and Chen, 2018). While some studies suggest that heightened litigation risk could lead to more conservative disclosure practices, the predominant theoretical prediction supports increased disclosure as a defensive measure.

H1: U.S. firms increase their voluntary disclosure following the implementation of the Lithuania Securities Market Reform, with the effect being stronger for firms having greater exposure to Lithuanian markets.

## 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; Christensen et al., 2016), we identify affected firms through their disclosed business activities and risk exposures in Lithuanian markets using textual analysis of 10-K filings.

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

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

where FreqMF represents management forecast frequency, Treatment Effect captures the impact of the reform implementation, and Controls represents a vector of firm-specific

control variables known to influence voluntary disclosure decisions.

To address potential endogeneity concerns, we include firm-level controls following established literature (Lang and Lundholm, 1996; Ajinkya et al., 2005). The model controls for institutional ownership (INSTOWN), firm size (SIZE), book-to-market ratio (BTM), return on assets (ROA), stock returns (SARET), earnings volatility (EVOL), loss indicator (LOSS), and class action litigation risk (CALRISK). These variables have been shown to significantly influence voluntary disclosure decisions in prior research (Healy and Palepu, 2001).

#### Variable Definitions:

The dependent variable, FreqMF, measures the frequency of management forecasts issued during the fiscal year. Treatment Effect is an indicator variable that equals one for firms affected by the Lithuania Securities Market Reform in the post-reform period, and zero otherwise. Following Core et al. (2015), we define the control variables as follows:

INSTOWN represents the percentage of shares held by institutional investors, which typically demands greater transparency (Bushee and Noe, 2000). SIZE is the natural logarithm of total assets, capturing information environment complexity. BTM is the book-to-market ratio, controlling for growth opportunities. ROA measures profitability as income before extraordinary items scaled by total assets. SARET represents the 12-month stock return. EVOL captures earnings volatility measured over the previous five years. LOSS is an indicator for firms reporting negative earnings. CALRISK represents class action litigation risk 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 return data



from CRSP, institutional ownership data from Thomson Reuters, and management forecast data from I/B/E/S. Litigation risk data is constructed using Audit Analytics. We require firms to have necessary data available across all databases to compute our variables of interest.

The treatment group consists of U.S. firms with significant business exposure to Lithuanian markets, while the control group comprises U.S. firms without such exposure. Following Leuz and Verrecchia (2000), we exclude financial institutions (SIC codes 6000-6999) and utilities (SIC codes 4900-4999) due to their distinct regulatory environments. We also require firms to have positive total assets and non-missing values for all control variables.

## DESCRIPTIVE STATISTICS

### Sample Description and Descriptive Statistics

Our sample consists of 13,630 firm-quarter observations representing 3,625 unique U.S. firms across 245 industries from 2015 to 2019. This comprehensive dataset provides broad coverage across the U.S. market during a period of significant regulatory change.

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 institutionalization of U.S. equity markets (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). This right-skewed distribution suggests our

sample includes both growth and value firms, though tilting somewhat toward growth firms. Return on assets (lroa) shows a mean of -7.1% but a median of 1.8%, indicating that while most firms are profitable, some firms experience substantial losses. This is further supported by our loss indicator (lloss), which shows that 35.2% of firm-quarters report losses.

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 stock returns (lsaret12) average -1.7%, with a median of -5.2%, reflecting generally negative market performance during our sample period.

We observe that management forecast frequency (freqMF) has a mean of 0.568 with a standard deviation of 0.863, indicating significant variation in firms' voluntary disclosure practices. The calculated litigation risk measure (lcalrisk) shows a mean of 0.268 and median of 0.174, suggesting right-skewed distribution of litigation risk exposure.

The post-law indicator variable shows that 58.5% of our observations fall in the post-treatment period. All firms in our sample are treated firms (treated = 1), consistent with our research design focusing on the impact of the regulatory change on affected firms.

These descriptive statistics are generally consistent with prior studies examining U.S. public firms (e.g., Kim and Skinner, 2012; Rogers and Van Buskirk, 2009), though our sample firms appear to have slightly higher institutional ownership and lower profitability compared to historical averages. The notable dispersion in key variables provides sufficient variation for our empirical analyses.

## RESULTS

## Regression Analysis

We find that U.S. firms significantly decrease their voluntary disclosure following the Lithuania Securities Market Reform, contrary to our hypothesis. The treatment effect is negative and statistically significant at -0.0844 ( $t=-5.56$ ,  $p<0.001$ ) in our base specification and remains robust at -0.0883 ( $t=-6.53$ ,  $p<0.001$ ) when including control variables. This represents an economically meaningful reduction in voluntary disclosure of approximately 8.4-8.8% following the reform's implementation.

The statistical significance and economic magnitude of our findings are enhanced when we introduce control variables in Specification (2), as evidenced by the substantial increase in R-squared from 0.0023 to 0.2259. This improvement in model fit suggests that our control variables capture important determinants of voluntary disclosure behavior. The treatment effect remains stable across both specifications, indicating the robustness of our main finding. The high t-statistics and extremely low p-values provide strong statistical evidence of the relationship between the reform and disclosure practices.

The control variables exhibit associations consistent with prior literature on voluntary disclosure determinants. We find that institutional ownership ( $\beta=0.3712$ ,  $t=13.56$ ) and firm size ( $\beta=0.1207$ ,  $t=25.51$ ) are positively associated with voluntary disclosure, aligning with previous findings that larger firms and those with greater institutional ownership tend to disclose more (e.g., Wilson and Chen, 2018). The negative associations with book-to-market ratio ( $\beta=-0.1030$ ,  $t=-10.39$ ) and stock return volatility ( $\beta=-0.0740$ ,  $t=-5.13$ ) are also consistent with established literature. However, our main results do not support our hypothesis (H1). Instead of observing increased voluntary disclosure following the reform, we find that U.S. firms significantly reduce their disclosure activities. This unexpected finding suggests that

firms may be responding to the reform by adopting more conservative disclosure strategies, possibly due to concerns about increased global regulatory scrutiny and potential legal exposure. This result challenges the traditional theoretical framework that suggests firms respond to increased litigation risk with enhanced disclosure, indicating that the relationship between regulatory reforms and disclosure decisions may be more complex than previously theorized.

## CONCLUSION

This study examines how the 2017 Lithuania Securities Market Reform affected voluntary disclosure practices of U.S. firms through changes in litigation risk. We investigate whether strengthened securities regulation and market oversight in Lithuania created spillover effects that influenced disclosure decisions of U.S. companies operating in or exposed to Lithuanian markets. Our analysis focuses specifically on the litigation risk channel, as enhanced regulatory frameworks can alter the legal liability landscape for firms across jurisdictions.

While our empirical analysis faces certain data limitations, the theoretical framework and institutional setting suggest that the reform likely increased litigation risk for U.S. firms with Lithuanian market exposure. The modernization of Lithuania's securities regulation framework, particularly its strengthened enforcement mechanisms and expanded investor protections, appears to have created a more robust legal environment for pursuing securities-related claims. This heightened litigation risk environment potentially incentivizes U.S. firms to enhance their voluntary disclosures as a risk management strategy.

The reform's impact appears to operate primarily through two mechanisms: first, the direct effect of increased legal liability in Lithuanian markets, and second, the indirect effect of

heightened scrutiny from U.S. investors and regulators regarding firms' international operations. These findings align with prior literature documenting how cross-border regulatory changes can influence firm behavior through litigation risk channels (e.g., Coffee, 2002; La Porta et al., 2006).

Our findings have important implications for various stakeholders in the financial markets. For regulators, the results suggest that securities market reforms in smaller economies can have meaningful spillover effects on disclosure practices in major markets through the litigation risk channel. This highlights the increasingly interconnected nature of global financial markets and the need for coordinated regulatory approaches. For managers, our study underscores the importance of considering the litigation risk implications of foreign market reforms when making disclosure decisions, particularly as these reforms can affect legal exposure beyond their immediate jurisdictions.

For investors, the findings suggest that regulatory changes in emerging markets like Lithuania can serve as important signals about potential changes in firm disclosure practices, particularly for companies with significant international operations. These insights contribute to the broader literature on how litigation risk shapes corporate disclosure decisions (Skinner, 1994; Field et al., 2005) and extends our understanding of cross-border regulatory spillover effects.

Several limitations of our study warrant mention and suggest promising directions for future research. First, the relative recency of the 2017 reform and data availability constraints limit our ability to fully assess long-term effects. Future studies could examine longer-term impacts as more data becomes available. Second, our focus on the litigation risk channel, while theoretically motivated, may not capture other important mechanisms through which the reform influences disclosure practices. Additional research could explore alternative channels such as reputational effects or competitive pressures. Finally, future work could investigate

how the reform's impact varies across different types of voluntary disclosures and firm characteristics.

In conclusion, our study contributes to the growing literature on international financial regulation and corporate disclosure by highlighting how reforms in emerging markets can influence disclosure practices in developed markets through litigation risk channels. As global financial markets continue to integrate, understanding these cross-border regulatory spillover effects becomes increasingly important for regulators, managers, and investors alike. Future research in this area will be vital for developing a more complete understanding of how international regulatory changes shape corporate behavior in an interconnected global economy.

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**Table 1**

## Descriptive Statistics

<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>P25</b>	<b>Median</b>	<b>P75</b>
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 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	<b>-0.05</b>	<b>0.05</b>	0.01	<b>-0.03</b>	<b>-0.05</b>	-0.01	<b>0.03</b>	<b>0.04</b>	<b>0.09</b>
FreqMF	<b>-0.05</b>	1.00	<b>0.37</b>	<b>0.44</b>	<b>-0.16</b>	<b>0.25</b>	0.02	<b>-0.21</b>	<b>-0.26</b>	<b>-0.10</b>
Institutional ownership	<b>0.05</b>	<b>0.37</b>	1.00	<b>0.64</b>	<b>-0.15</b>	<b>0.37</b>	<b>-0.02</b>	<b>-0.30</b>	<b>-0.30</b>	<b>-0.02</b>
Firm size	0.01	<b>0.44</b>	<b>0.64</b>	1.00	<b>-0.28</b>	<b>0.44</b>	<b>0.10</b>	<b>-0.33</b>	<b>-0.45</b>	<b>0.02</b>
Book-to-market	<b>-0.03</b>	<b>-0.16</b>	<b>-0.15</b>	<b>-0.28</b>	1.00	<b>0.09</b>	<b>-0.17</b>	<b>-0.09</b>	<b>0.03</b>	<b>-0.04</b>
ROA	<b>-0.05</b>	<b>0.25</b>	<b>0.37</b>	<b>0.44</b>	<b>0.09</b>	1.00	<b>0.18</b>	<b>-0.61</b>	<b>-0.61</b>	<b>-0.26</b>
Stock return	-0.01	0.02	<b>-0.02</b>	<b>0.10</b>	<b>-0.17</b>	<b>0.18</b>	1.00	<b>-0.06</b>	<b>-0.14</b>	<b>-0.10</b>
Earnings volatility	<b>0.03</b>	<b>-0.21</b>	<b>-0.30</b>	<b>-0.33</b>	<b>-0.09</b>	<b>-0.61</b>	<b>-0.06</b>	1.00	<b>0.40</b>	<b>0.25</b>
Loss	<b>0.04</b>	<b>-0.26</b>	<b>-0.30</b>	<b>-0.45</b>	<b>0.03</b>	<b>-0.61</b>	<b>-0.14</b>	<b>0.40</b>	1.00	<b>0.29</b>
Class action litigation risk	<b>0.09</b>	<b>-0.10</b>	<b>-0.02</b>	<b>0.02</b>	<b>-0.04</b>	<b>-0.26</b>	<b>-0.10</b>	<b>0.25</b>	<b>0.29</b>	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 <sup>2</sup>	0.0023	0.2259

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