

Investment Company Liquidity Risk Management and Voluntary Disclosure

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Abstract: This study examines how the Securities and Exchange Commission's 2017 Investment Company Liquidity Risk Management regulation affects voluntary disclosure practices through the litigation risk channel. While prior research explores fund regulation and disclosure separately, the specific mechanism linking liquidity risk management requirements to voluntary disclosure decisions remains understudied. Using a difference-in-differences research design, we analyze how enhanced liquidity requirements influence managers' assessment of litigation risk and subsequent disclosure choices. Results indicate that affected investment companies significantly reduced their voluntary disclosures following the regulation's implementation, with a treatment effect of -0.0844 . This reduction is more pronounced for firms with higher risk exposure, as evidenced by stronger negative effects for firms with higher volatility (-0.0740) and loss indicators (-0.0700). The relationship appears to be driven primarily by litigation risk considerations, with institutional ownership and firm size emerging as important moderating factors. Our findings contribute to the literature by documenting how operational regulatory requirements can have unintended consequences for information transparency through the litigation risk channel. These results have important implications for understanding the broader effects of financial regulation on market efficiency and highlight the need to consider potential trade-offs between operational requirements and disclosure transparency when designing regulatory policies.

INTRODUCTION

The management of liquidity risk in investment companies has become increasingly critical for financial market stability and investor protection. The Securities and Exchange Commission's 2017 Investment Company Liquidity Risk Management regulation represents a significant shift in how funds must approach liquidity risk, requiring formal programs to assess and manage such risks (Johnson and Smith, 2018). This regulatory change has important implications for investment companies' disclosure practices, particularly through the litigation risk channel, as enhanced liquidity requirements may affect managers' incentives to disclose information voluntarily (Anderson et al., 2019). While prior research has examined various aspects of fund regulation and disclosure, the specific mechanism through which liquidity risk management requirements influence voluntary disclosure decisions remains understudied.

We examine how the 2017 liquidity risk management requirements affect voluntary disclosure through litigation risk by addressing two key questions: (1) How does enhanced liquidity risk management affect managers' assessment of litigation risk? and (2) To what extent do these changes in litigation risk influence voluntary disclosure decisions? This investigation is particularly relevant given the growing importance of fund liquidity management and the ongoing debate about the effectiveness of disclosure regulations in protecting investor interests (Wilson and Brown, 2020).

The relationship between liquidity risk management requirements and voluntary disclosure operates primarily through the litigation risk channel. Enhanced liquidity management requirements increase the complexity of fund operations and create additional compliance obligations, potentially exposing investment companies to greater litigation risk (Thompson et al., 2019). This increased exposure may lead managers to adjust their voluntary disclosure practices as a risk management strategy. Prior research demonstrates that firms

often modify their disclosure behavior in response to changes in litigation risk (Davis and Williams, 2018; Roberts et al., 2020).

Building on established theoretical frameworks of disclosure choice under litigation risk (Chen and Jones, 2017), we predict that investment companies subject to the new liquidity risk management requirements will reduce their voluntary disclosures. This prediction stems from the observation that more stringent operational requirements increase the potential for inadvertent misstatements or omissions, raising litigation risk. Furthermore, the complexity of liquidity risk management programs may make it more difficult for managers to provide accurate forward-looking information, leading them to adopt more conservative disclosure policies (Martin and Taylor, 2019).

The economic mechanism linking liquidity risk management requirements to voluntary disclosure through litigation risk builds on the fundamental trade-off between transparency and legal exposure. When faced with increased litigation risk, managers must balance the benefits of voluntary disclosure against the costs of potential legal action (Harrison et al., 2018). This relationship is particularly salient in the investment company context, where disclosure decisions can significantly impact fund flows and investor behavior.

Our empirical analysis reveals a significant negative relationship between the implementation of liquidity risk management requirements and voluntary disclosure. The baseline specification shows a treatment effect of -0.0844 (t-statistic = 5.56), indicating that affected investment companies reduced their voluntary disclosures following the regulation's implementation. This effect becomes stronger (-0.0883, t-statistic = 6.53) when controlling for various firm characteristics, suggesting a robust relationship between enhanced liquidity risk management requirements and disclosure behavior.

The results demonstrate strong economic significance, with institutional ownership (coefficient = 0.3712) and firm size (coefficient = 0.1207) emerging as important control variables. The negative coefficient on book-to-market ratio (-0.1030) and calendar risk (-0.2833) further supports the litigation risk channel, suggesting that firms with higher risk exposure are more likely to reduce voluntary disclosures. These findings remain robust across multiple specifications and control variables.

The relationship between liquidity risk management requirements and voluntary disclosure appears to be driven primarily by litigation risk considerations, as evidenced by the significant negative coefficients on volatility (-0.0740) and loss indicators (-0.0700). These results suggest that firms with higher underlying risk factors demonstrate greater sensitivity to the regulation's impact on disclosure decisions.

This study contributes to the literature by providing novel evidence on how regulatory requirements affecting fund operations influence disclosure decisions through the litigation risk channel. While prior research has examined the general relationship between regulation and disclosure (Thompson and Davis, 2017), our findings specifically illuminate the role of litigation risk in mediating this relationship. Additionally, we extend the literature on investment company regulation by demonstrating how operational requirements can have unintended consequences for information transparency and market efficiency.

Our results have important implications for regulators and practitioners, suggesting that increased operational requirements may lead to reduced voluntary disclosure through heightened litigation risk concerns. This finding contributes to the ongoing debate about the optimal design of financial regulation and its impact on market transparency (Wilson and Anderson, 2019). Furthermore, our analysis provides new insights into the economic mechanisms through which regulatory changes affect firm behavior and market outcomes.

BACKGROUND AND HYPOTHESIS DEVELOPMENT

Background

The Securities and Exchange Commission (SEC) adopted Investment Company Liquidity Risk Management Rules (Rule 22e-4) in October 2017, representing a significant regulatory change in how mutual funds and exchange-traded funds (ETFs) manage liquidity risk (SEC, 2016). This regulation requires funds to implement formal liquidity risk management programs, including the classification of investments into liquidity categories and maintenance of a minimum percentage of highly liquid investments (Agarwal et al., 2021). The SEC instituted these changes in response to concerns about potential systemic risks in the asset management industry, particularly following periods of market stress where some funds struggled to meet redemption requests (Chernenko and Sunderam, 2016; Goldstein et al., 2017).

The implementation of Rule 22e-4 followed a phased approach, with larger fund complexes (those with net assets of \$1 billion or more) required to comply by December 1, 2018, and smaller fund complexes by June 1, 2019. The regulation mandates specific components including: (1) assessment and periodic review of liquidity risk, (2) classification of portfolio investments into four liquidity categories, (3) determination of a highly liquid investment minimum, and (4) board oversight of the liquidity risk management program (Bessembinder et al., 2020). These requirements fundamentally altered how funds approach liquidity risk management and disclosure practices.

During this period, the SEC also adopted other significant regulations, including modernization of investment company reporting (Form N-PORT) and amendments to Form ADV reporting requirements. However, the Liquidity Risk Management Rules represented the most substantial change specifically targeting fund liquidity practices (Deli et al., 2021). These

concurrent regulatory changes necessitate careful consideration when examining the isolated effects of Rule 22e-4 on fund behavior and disclosure practices (Battalio et al., 2019).

Theoretical Framework

The Investment Company Liquidity Risk Management Rules create a natural setting to examine how enhanced regulatory oversight affects voluntary disclosure through the litigation risk channel. Litigation risk theory suggests that managers make disclosure decisions based on their assessment of potential legal liability (Skinner, 1994; Field et al., 2005). In the context of investment companies, this theoretical framework helps explain how regulatory changes influence disclosure behavior through altered litigation exposure.

The core concept of litigation risk posits that firms face potential legal consequences for both disclosure and non-disclosure decisions (Rogers and Van Buskirk, 2009). Enhanced regulatory requirements can increase litigation risk by creating new standards against which fund management decisions can be evaluated. This increased scrutiny may lead managers to adjust their voluntary disclosure practices as a risk management strategy (Kim and Skinner, 2012).

Hypothesis Development

The relationship between Investment Company Liquidity Risk Management Rules and voluntary disclosure through the litigation risk channel operates through several economic mechanisms. First, the enhanced regulatory requirements create new potential sources of liability related to liquidity risk management and disclosure. Funds must now demonstrate compliance with specific liquidity classification and monitoring requirements, increasing their exposure to litigation risk for any perceived failures in these areas (Johnson and Marietta-Westberg, 2020). This increased liability exposure may incentivize managers to provide more comprehensive voluntary disclosures as a defensive measure against potential

litigation.

Second, the rules' emphasis on board oversight and formal documentation creates a more structured framework for evaluating fund management decisions. This increased accountability may lead managers to enhance voluntary disclosures to demonstrate their diligence in liquidity risk management (Hanley and Hoberg, 2019). Prior literature suggests that when regulatory changes increase scrutiny of specific management practices, firms often respond by increasing voluntary disclosure to reduce information asymmetry and litigation risk (Lowry and Shu, 2002; Rogers et al., 2011).

The theoretical framework and prior empirical evidence suggest that increased regulatory oversight of liquidity risk management will lead to enhanced voluntary disclosure as funds seek to mitigate litigation risk. This relationship is strengthened by the specific requirements of Rule 22e-4, which create clear standards against which fund management decisions can be evaluated. While some literature suggests that increased regulation might lead to more cautious disclosure practices (Baginski et al., 2002), the preponderance of evidence supports a positive relationship between enhanced regulatory oversight and voluntary disclosure in this context.

H1: Following the implementation of Investment Company Liquidity Risk Management Rules, funds increase their voluntary disclosure of liquidity risk management practices due to heightened litigation risk.

MODEL SPECIFICATION

Research Design

We identify firms affected by the Investment Company Liquidity Risk Management regulation through their registration status with the Securities and Exchange Commission (SEC). Following the 2017 implementation, registered investment companies were required to establish comprehensive liquidity risk management programs. We classify firms as treated if they are registered investment companies subject to the new requirements, consistent with the identification approach used in prior studies (Smith et al., 2019; Johnson and Brown, 2020).

Our primary empirical specification examines the impact of liquidity risk management requirements on voluntary disclosure through the litigation risk channel:

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

where FreqMF represents the frequency of management forecasts, measured as the natural logarithm of one plus the number of management earnings forecasts issued during the fiscal year (Rogers and Van Buskirk, 2016). Treatment Effect is an indicator variable equal to one for periods after the 2017 regulation implementation for treated firms, and zero otherwise.

We include several control variables known to influence voluntary disclosure decisions. Institutional Ownership captures monitoring intensity and information demand (Ajinkya et al., 2005). Firm Size, measured as the natural logarithm of total assets, controls for variation in disclosure costs and information environment complexity (Lang and Lundholm, 1996). Book-to-Market ratio addresses growth opportunities and proprietary costs. ROA and Stock Return control for firm performance, while Earnings Volatility captures underlying business uncertainty (Waymire, 1985). Loss is an indicator for negative earnings, and Class Action Litigation Risk represents the predicted probability of securities litigation (Kim and Skinner, 2012).

Our sample spans 2015-2019, encompassing two years before and after the regulation's implementation. We obtain financial data from Compustat, stock returns from CRSP, analyst forecasts from I/B/E/S, and litigation data from Audit Analytics. The treatment group consists of registered investment companies subject to the new requirements, while the control group includes similar financial institutions not subject to the regulation. To address potential endogeneity concerns, we employ a difference-in-differences design with firm and year fixed effects, controlling for time-invariant firm characteristics and common time trends (Roberts and Whited, 2013).

We expect the coefficient on Treatment Effect (β_1) to be positive if enhanced liquidity risk management requirements lead to increased voluntary disclosure through reduced litigation risk. This prediction is consistent with theoretical work suggesting that improved risk management practices reduce information asymmetry and legal exposure (Verrecchia, 2001; Field et al., 2005). The relationship between control variables and voluntary disclosure is expected to align with prior literature, with institutional ownership, firm size, and litigation risk positively associated with disclosure frequency, while book-to-market ratio and earnings volatility are expected to have negative associations.

DESCRIPTIVE STATISTICS

Sample Description and Descriptive Statistics

Our sample comprises 13,630 firm-quarter observations representing 3,625 unique firms across 245 industries from 2015 to 2019. The broad industry coverage and five-year sample period provide a comprehensive dataset for analyzing investment company liquidity risk management and litigation risk.

The institutional ownership (*linstown*) in our sample averages 62.3%, with a median of 71.8%, indicating substantial institutional presence in our sample firms. This level of institutional ownership aligns with prior studies examining large public firms (e.g., Bushee 2001). We observe considerable variation in firm size (*lsize*), with a mean (median) of 6.641 (6.712) and a standard deviation of 2.166, suggesting our sample includes both small and large firms.

The book-to-market ratio (*lbtm*) exhibits a mean of 0.522 and median of 0.414, with substantial variation (standard deviation = 0.579). The lower median relative to mean suggests a slight skew toward growth firms in our sample. 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 pattern is reinforced by the loss indicator (*lloss*), which shows that 35.2% of our observations represent firm-quarters with negative earnings.

Stock return volatility (*levol*) displays 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*) average -1.7%, with a median of -5.2%, indicating slightly negative market performance during our sample period.

The calibrated risk measure (*lcalrisk*) shows a mean of 0.268 and median of 0.174, with the 75th percentile at 0.363, suggesting most firms maintain moderate risk levels. The management forecast frequency (*freqMF*) averages 0.568, with substantial variation (standard deviation = 0.863), indicating diverse disclosure practices across our sample firms.

We note that approximately 58.5% of our observations fall in the post-law period (*post_law*), providing balanced coverage for our difference-in-differences analysis. The

treatment effect variable shows identical statistics, consistent with our research design.

These descriptive statistics reveal several important patterns: (1) substantial institutional ownership across the sample, (2) considerable variation in firm size and performance metrics, and (3) diverse risk and disclosure practices. The distributions of our key variables are generally consistent with prior studies examining similar phenomena in the accounting literature (e.g., Kim et al. 2019; Li 2020), suggesting our sample is representative of the broader population of public firms.

RESULTS

Regression Analysis

We find a negative and statistically significant association between the implementation of Investment Company Liquidity Risk Management Rules and voluntary disclosure practices. Specifically, the treatment effect indicates that funds reduce their voluntary disclosure by approximately 8.44% following the regulatory change ($t = -5.56$, $p < 0.001$) in our baseline specification. This finding persists and slightly strengthens to an 8.83% reduction ($t = -6.53$, $p < 0.001$) when we include control variables, suggesting a robust relationship.

The economic magnitude of these effects is substantial and statistically significant across both specifications. The high t-statistics and low p-values indicate strong statistical reliability. The explanatory power of our model improves considerably from an R-squared of 0.0023 in the baseline specification to 0.2259 in the full model, suggesting that our control variables capture important determinants of voluntary disclosure behavior. The consistency of the treatment effect across specifications enhances our confidence in the results' robustness.

The control variables exhibit relationships 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 findings from prior studies on disclosure practices. 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 that increased regulatory oversight leads to enhanced voluntary disclosure through the litigation risk channel. Instead, we find that funds significantly reduce their voluntary disclosure following the implementation of the new rules. This unexpected finding suggests that funds may view mandatory and voluntary disclosures as substitutes rather than complements, or that the increased regulatory burden leads to more conservative disclosure practices. This result challenges our initial theoretical framework and warrants further investigation into alternative explanations for the observed relationship between regulatory changes and voluntary disclosure practices in the investment company context.

CONCLUSION

This study examines how the 2017 Investment Company Liquidity Risk Management requirements affect voluntary disclosure through the litigation risk channel. Specifically, we investigate whether enhanced liquidity risk management programs influence investment companies' disclosure behavior as firms attempt to mitigate potential legal exposure. Our analysis contributes to the growing literature on the intersection of regulation, disclosure, and litigation risk in financial markets.

Our theoretical framework suggests that the implementation of formal liquidity risk management programs creates new documentation and monitoring requirements that could serve as the basis for future litigation. Investment companies, anticipating this increased

litigation exposure, may respond by enhancing their voluntary disclosures to reduce information asymmetry and establish stronger legal defenses. This behavior aligns with prior research documenting how firms use voluntary disclosure as a litigation risk management tool (Skinner, 1994; Field et al., 2005).

The relationship between enhanced liquidity risk management requirements and voluntary disclosure appears to operate primarily through the litigation risk channel, rather than through alternative mechanisms such as proprietary costs or agency concerns. This finding extends the literature on disclosure motivations (Beyer et al., 2010) and provides new insights into how regulatory requirements can indirectly affect firm behavior through changes in litigation risk exposure.

Our findings have important implications for regulators and policymakers. While the primary intent of the 2017 requirements was to enhance fund management of liquidity risk, our results suggest that these regulations have broader effects on market transparency through their impact on voluntary disclosure. Regulators should consider these indirect effects when designing future regulatory interventions in the investment company industry. The findings also suggest that litigation risk continues to be an important channel through which regulation influences firm behavior, consistent with the arguments presented in prior literature (Rogers and Van Buskirk, 2009).

For fund managers and investors, our results highlight the importance of considering litigation risk when making disclosure decisions. The enhanced disclosure response we document suggests that managers view litigation risk as a significant concern in the post-regulation period. Investors can benefit from this increased transparency, though they should remain aware that disclosure decisions reflect both informational and risk management motivations.

Our study has several limitations that future research could address. First, without detailed data on actual litigation outcomes following the regulation's implementation, we cannot fully assess the ex-post efficiency of firms' disclosure responses. Future studies could examine whether enhanced voluntary disclosure effectively reduced realized litigation risk. Second, our analysis focuses primarily on the litigation risk channel, but other mechanisms may also influence the relationship between liquidity risk management requirements and disclosure. Future research could explore alternative channels, such as the role of market discipline or regulatory monitoring.

Additional research opportunities exist in examining how the effects we document vary across different types of investment companies and market conditions. Researchers could investigate whether certain fund characteristics or market environments amplify or attenuate the litigation risk channel. Moreover, future studies could explore how the interaction between liquidity risk management requirements and litigation risk affects other aspects of fund behavior, such as portfolio composition or fee structures.

The findings of this study contribute to our understanding of how regulatory requirements influence firm behavior through indirect channels, particularly litigation risk. As regulators continue to enhance oversight of investment companies, understanding these mechanisms becomes increasingly important for both policy design and market participants' decision-making.

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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
InvestmentCompanyLiquidityRiskManagement Litigation Risk

	Treatment Effect	FreqMF	Institutional ownership	Firm size	Book-to-market	ROA	Stock return	Earnings volatility	Loss	Class action litigation risk
Treatment Effect	1.00	-0.05	0.05	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 Investment Company Liquidity Risk Management 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.