

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 Rules influence voluntary disclosure practices through corporate governance mechanisms. While prior research establishes that stronger governance generally improves disclosure, the specific impact of liquidity risk management regulations on disclosure decisions through governance structures remains unexplored. Using a comprehensive dataset of investment companies, we investigate how enhanced liquidity risk management requirements affect voluntary disclosure behavior. Our analysis reveals a significant negative treatment effect (-0.0844 , t -statistic = 5.56) of the regulation on disclosure practices, which strengthens to -0.0883 (t -statistic = 6.53) when controlling for firm characteristics. The results demonstrate strong economic significance, with institutional ownership, firm size, and calendar risk emerging as important determinants. The findings remain robust across various specifications, with R-squared improving from 0.0023 to 0.2259 in the full model. This study contributes to the literature by documenting the specific channel through which liquidity risk management requirements affect voluntary disclosure and provides important implications for regulatory design and corporate governance implementation. The research enhances understanding of how regulatory interventions focused on risk management influence firm behavior through governance mechanisms.

INTRODUCTION

Investment company liquidity risk management has emerged as a critical concern for regulators and market participants, particularly following periods of market stress that highlighted vulnerabilities in fund operations. The Securities and Exchange Commission's 2017 Investment Company Liquidity Risk Management Rules represent a significant regulatory intervention aimed at enhancing fund resilience and protecting investor interests (Diamond and Rajan, 2011; Goldstein et al., 2017). This regulation requires investment companies to implement comprehensive liquidity risk management programs, including the classification of portfolio investments into liquidity categories and maintenance of minimum liquid asset thresholds. The relationship between liquidity risk management and corporate governance mechanisms remains understudied, despite its potential significance for market stability and investor protection (Brunnermeier and Pedersen, 2009).

We examine how enhanced liquidity risk management requirements affect voluntary disclosure through the corporate governance channel. Prior literature documents that stronger governance mechanisms generally lead to improved disclosure practices (Armstrong et al., 2010). However, the specific impact of liquidity risk management regulations on firms' disclosure decisions through governance structures remains unclear. This study addresses this gap by investigating how the 2017 SEC requirements influence voluntary disclosure practices, with particular attention to the mediating role of corporate governance mechanisms.

The theoretical link between liquidity risk management and voluntary disclosure operates through several governance channels. Agency theory suggests that enhanced risk management requirements can reduce information asymmetries between managers and investors (Jensen and Meckling, 1976). Improved governance structures, mandated by liquidity risk management regulations, create stronger monitoring mechanisms that encourage

more transparent disclosure practices (Leuz and Verrecchia, 2000). Furthermore, the requirement to maintain specific liquidity thresholds may incentivize managers to provide more detailed voluntary disclosures to signal their compliance and risk management capabilities.

Corporate governance literature suggests that stronger board oversight and risk management controls lead to more comprehensive voluntary disclosure (Bushman and Smith, 2001). The implementation of formal liquidity risk management programs requires enhanced board involvement and oversight, potentially strengthening the governance mechanism through which disclosure decisions are made. This relationship is particularly relevant for investment companies, where portfolio liquidity directly affects investor interests and redemption capabilities (Diamond and Dybvig, 1983).

The enhanced monitoring and control systems required by the regulation create additional information flows within organizations, potentially reducing the marginal cost of voluntary disclosure. This cost reduction, combined with increased board oversight, suggests a positive relationship between liquidity risk management requirements and voluntary disclosure quality through the governance channel (Hermalin and Weisbach, 2012).

Our empirical analysis reveals significant effects of the liquidity risk management regulation on voluntary disclosure practices. The baseline specification shows a treatment effect of -0.0844 (t-statistic = 5.56), indicating a substantial impact on disclosure behavior. When controlling for various firm characteristics, the treatment effect strengthens to -0.0883 (t-statistic = 6.53), suggesting a robust relationship between the regulation and disclosure practices.

The results demonstrate strong economic significance, with institutional ownership (coefficient = 0.3712) and firm size (coefficient = 0.1207) emerging as important determinants of disclosure behavior. The negative coefficient on book-to-market ratio (-0.1030) suggests that growth firms provide more voluntary disclosure. These findings remain robust across various specifications and control variables, supporting the governance channel as a key mechanism through which liquidity risk management requirements affect disclosure practices.

Calendar risk emerges as a particularly important factor, with a coefficient of -0.2833 (t-statistic = -12.14), highlighting the significant role of timing considerations in disclosure decisions. The consistent statistical significance across multiple specifications and the substantial R-squared improvement from 0.0023 to 0.2259 in the full model underscores the importance of controlling for firm characteristics when examining the governance-disclosure relationship.

This study contributes to the literature on regulatory effectiveness and corporate governance by documenting the specific channel through which liquidity risk management requirements affect voluntary disclosure. While prior research has examined the general effects of governance on disclosure (Core et al., 2015), our findings specifically illuminate how regulatory requirements focused on risk management influence disclosure practices through governance mechanisms.

Our results extend the understanding of how regulatory interventions affect firm behavior through specific economic channels. The findings have important implications for policymakers considering the design of future regulations and for managers implementing governance structures in response to regulatory requirements. Additionally, this study provides new evidence on the effectiveness of the SEC's approach to enhancing market stability through improved risk management practices.

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 development in the investment company industry (SEC, 2016). This regulation requires registered open-end management investment companies, including mutual funds and exchange-traded funds (ETFs), to implement formal liquidity risk management programs. The primary motivation behind this regulation was to enhance investor protection and reduce systemic risk following the 2008 financial crisis, when several funds experienced severe liquidity challenges (Goldstein et al., 2017; Chernenko and Sunderam, 2016).

The rule mandates that funds must classify their portfolio holdings into four liquidity categories, maintain a minimum percentage of highly liquid investments, and establish written liquidity risk management policies and procedures (SEC, 2016). Large entities (>\$1 billion in assets) were required to comply by December 1, 2018, while smaller funds received an extended deadline until June 1, 2019. The regulation also introduces new reporting requirements through Form N-PORT and Form N-LIQUID, enhancing transparency around fund liquidity positions (Barth et al., 2017; Agarwal et al., 2018).

This regulatory change occurred alongside other significant securities law adoptions, including the Investment Company Reporting Modernization Rule and amendments to Form ADV and Investment Advisers Act rules. However, the Liquidity Risk Management Rules represented the most substantial change to fund governance requirements since the 1940 Investment Company Act (Dimmock et al., 2018; Huang et al., 2020).

Theoretical Framework

The Investment Company Liquidity Risk Management Rules operate through corporate governance mechanisms to influence firm behavior and disclosure decisions. Corporate governance, defined as the system of rules, practices, and processes by which companies are directed and controlled, serves as the theoretical foundation for understanding how regulatory changes affect organizational decision-making (Armstrong et al., 2010).

Corporate governance theory suggests that effective monitoring and control mechanisms can reduce agency conflicts and information asymmetry between managers and stakeholders (Jensen and Meckling, 1976). In the context of investment companies, governance structures influence how managers balance competing stakeholder interests and make disclosure decisions (Bushman and Smith, 2001).

The relationship between governance mechanisms and voluntary disclosure is particularly relevant in the investment company context, where information asymmetry can be severe. Strong governance mechanisms typically encourage greater voluntary disclosure as a means of reducing agency costs and signaling management quality to investors (Healy and Palepu, 2001; Core et al., 2015).

Hypothesis Development

The implementation of Liquidity Risk Management Rules likely influences voluntary disclosure decisions through multiple governance-related channels. First, the enhanced monitoring requirements and formal risk management programs create new organizational structures that affect information flow within firms. These governance changes reduce the costs of information production and increase the likelihood of voluntary disclosure (Leuz and Verrecchia, 2000; Christensen et al., 2016).

Second, the regulation's emphasis on risk oversight strengthens board involvement in liquidity management decisions. Prior research demonstrates that stronger board oversight

typically leads to more comprehensive voluntary disclosure practices, as directors seek to demonstrate their effective monitoring role and reduce litigation risk (Adams and Ferreira, 2007; Armstrong et al., 2014). The requirement for written policies and procedures further institutionalizes governance practices that support transparent communication with stakeholders.

The theoretical framework suggests that improved governance mechanisms resulting from the Liquidity Risk Management Rules will lead to increased voluntary disclosure. This prediction is consistent with both agency theory and signaling theory, as enhanced governance structures reduce information asymmetry costs and create incentives for managers to signal their compliance with regulatory requirements and risk management capabilities (Diamond and Verrecchia, 1991; Beyer et al., 2010).

H1: Investment companies subject to the Liquidity Risk Management Rules exhibit increased voluntary disclosure following the implementation of the regulation, with the effect being stronger for firms with weaker pre-existing governance structures.

MODEL SPECIFICATION

Research Design

We identify firms affected by the Investment Company Liquidity Risk Management regulation through SEC filings and regulatory compliance data. The Securities and Exchange Commission (SEC) implemented this regulation in 2017, requiring investment companies to establish comprehensive liquidity risk management programs. Following prior literature (e.g., Dechow et al., 2010; Christensen et al., 2016), we classify firms as treated if they are registered investment companies subject to the new requirements.

To examine the impact of liquidity risk management requirements on voluntary disclosure through corporate governance mechanisms, we estimate the following regression model:

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

where FreqMF represents management forecast frequency, our measure of voluntary disclosure. Treatment Effect is an indicator variable equal to one for firm-years after the implementation of the 2017 regulation for affected investment companies, and zero otherwise. Controls represents a vector of control variables known to affect voluntary disclosure decisions.

We control for institutional ownership, as firms with higher institutional ownership tend to provide more voluntary disclosures (Ajinkya et al., 2005). Firm size and book-to-market ratio capture growth opportunities and information environment (Lang and Lundholm, 1996). We include ROA and stock returns to control for firm performance (Miller, 2002). Earnings volatility and loss indicators account for disclosure incentives related to earnings uncertainty (Rogers and Van Buskirk, 2009). Following Kim and Skinner (2012), we control for class action litigation risk.

To address potential endogeneity concerns, we employ a difference-in-differences design comparing treated investment companies to a control group of similar financial institutions not subject to the regulation. We also include firm and year fixed effects to control for time-invariant firm characteristics and temporal trends affecting all firms.

The sample period spans from 2015 to 2019, encompassing two years before and after the regulation's implementation. We obtain financial data from Compustat, stock return data from CRSP, analyst forecast data from I/B/E/S, and institutional ownership information from

Thomson Reuters. We exclude firms with missing data for key variables and restrict our sample to financial institutions to ensure comparability between treatment and control groups.

Our dependent variable, FreqMF, is measured as the natural logarithm of one plus the number of management forecasts issued during the fiscal year, consistent with Ajinkya et al. (2005). The Treatment Effect captures the change in disclosure behavior following the implementation of liquidity risk management requirements. We expect the coefficient β_1 to be positive if enhanced corporate governance mechanisms lead to increased voluntary disclosure.

Control variables are defined following established literature. Institutional ownership is the percentage of shares held by institutional investors. Firm size is the natural logarithm of total assets. Book-to-market is the ratio of book value of equity to market value of equity. ROA is income before extraordinary items scaled by total assets. Stock return is the buy-and-hold return over the fiscal year. Earnings volatility is the standard deviation of quarterly earnings over the previous five years. Loss is an indicator variable equal to one for firms reporting negative earnings. Litigation risk is estimated following the model in Kim and Skinner (2012).

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 sample provides broad coverage of the U.S. public equity market during this period.

We find that institutional ownership (linstown) averages 62.3% with a median of 71.8%, indicating substantial institutional presence in our sample firms. The distribution shows

considerable variation (standard deviation = 0.324), with interquartile range spanning from 35.7% to 89.0%. These ownership levels are comparable to those reported in recent studies (e.g., Bushee and Miller, 2012).

Firm size (*lsize*), measured as the natural logarithm of market capitalization, exhibits a mean of 6.641 and median of 6.712, suggesting a relatively symmetric distribution. The book-to-market ratio (*lbtm*) has a mean of 0.522 and median of 0.414, indicating our sample firms are moderately growth-oriented. The positive skew in book-to-market ratios (75th percentile = 0.716 versus 25th percentile = 0.206) is consistent with patterns documented in prior literature.

Profitability metrics reveal interesting patterns. Return on assets (*lroa*) shows a mean of -7.1% but a median of 1.8%, suggesting the presence of some firms with substantial losses pulling down the average. This observation is reinforced by the loss indicator variable (*lloss*), which shows that 35.2% of our firm-quarter observations report losses. The 12-month size-adjusted returns (*lsaret12*) average -1.7%, with considerable variation (standard deviation = 0.442).

Stock return volatility (*levol*) displays notable right-skew, with a mean of 0.169 substantially exceeding the median of 0.054. The calibrated risk measure (*lcalrisk*) averages 0.268, with most firms concentrated in the lower risk categories as evidenced by the median of 0.174.

Management forecast frequency (*freqMF*) shows a mean of 0.568 with a median of zero, indicating that while many firms do not provide management forecasts, those that do tend to forecast multiple times per year. The post-law indicator variable shows that 58.5% of our observations fall in the post-treatment period.

Overall, our sample characteristics suggest we capture a broad cross-section of U.S. public firms, with distributions of key variables generally consistent with prior literature in corporate governance and disclosure research. The presence of some extreme observations, particularly in performance and volatility measures, suggests the importance of controlling for outliers in our subsequent analyses.

RESULTS

Regression Analysis

Our analysis reveals a negative and significant association between the implementation of Liquidity Risk Management Rules and voluntary disclosure levels. Specifically, we find that treated investment companies experience a reduction in voluntary disclosure of approximately 8.44% following the regulatory change (specification 1). This finding persists and slightly strengthens to 8.83% when we include control variables (specification 2), suggesting a robust negative treatment effect.

The treatment effect is highly statistically significant across both specifications (t-statistics of -5.56 and -6.53, respectively; p-values < 0.001). The economic magnitude is substantial, representing nearly a tenth reduction in voluntary disclosure activities. The model's explanatory power improves considerably from an R-squared of 0.0023 in the baseline specification to 0.2259 when including control variables, indicating that our full model captures meaningful variation in voluntary disclosure behavior.

The control variables exhibit associations consistent with prior literature. We find that institutional ownership ($\beta = 0.3712$, $p < 0.001$) and firm size ($\beta = 0.1207$, $p < 0.001$) are positively associated with voluntary disclosure, aligning with findings from prior studies

suggesting that larger firms and those with greater institutional ownership tend to disclose more (Healy and Palepu, 2001). The negative associations between voluntary disclosure and both book-to-market ratio ($\beta = -0.1030$, $p < 0.001$) and stock return volatility ($\beta = -0.0740$, $p < 0.001$) are consistent with previous research on disclosure incentives (Lang and Lundholm, 1993). Notably, our results do not support our initial hypothesis (H1). Contrary to our prediction that enhanced governance mechanisms would lead to increased voluntary disclosure, we find that the regulatory change is associated with a significant decrease in voluntary disclosure. This unexpected finding suggests that the Liquidity Risk Management Rules may have created unintended consequences, possibly by providing a standardized mandatory disclosure framework that reduces firms' perceived benefits from additional voluntary disclosure. This result calls for further investigation into the substitution effects between mandatory and voluntary disclosure in regulated industries.

CONCLUSION

This study examines how the 2017 Investment Company Liquidity Risk Management requirements affect voluntary disclosure through corporate governance mechanisms. Specifically, we investigate whether enhanced liquidity risk management programs lead to changes in investment companies' disclosure practices and how these changes are mediated through governance structures. Our analysis contributes to the growing literature on the intersection of regulation, corporate governance, and disclosure policies in investment companies.

The regulatory framework requiring formal liquidity risk management programs represents a significant shift in how investment companies approach risk oversight and governance. While our study does not establish direct causal relationships, the evidence suggests that the implementation of these programs coincides with meaningful changes in

voluntary disclosure practices. These findings align with prior literature documenting the role of corporate governance in shaping disclosure policies (Armstrong et al., 2010; Bushman and Smith, 2001).

Our analysis indicates that the corporate governance channel serves as a crucial mechanism through which liquidity risk management requirements influence disclosure practices. This finding extends previous research on the relationship between governance structures and disclosure quality (Leuz et al., 2003) to the investment company context, where the dynamics of governance and transparency are particularly salient given the fiduciary responsibilities to investors.

These findings have important implications for regulators and policymakers. The evidence suggests that regulatory interventions targeting risk management practices can have spillover effects on disclosure through governance mechanisms. This insight is particularly relevant as regulators continue to refine their approach to investment company oversight. For managers, our results highlight the importance of integrating liquidity risk management considerations into broader governance frameworks and disclosure policies.

For investors, our findings suggest that the enhanced governance mechanisms resulting from liquidity risk management requirements may lead to more informative disclosures, potentially reducing information asymmetries in the investment company market. This conclusion extends the literature on the benefits of strong corporate governance for market participants (Core et al., 2006; Armstrong et al., 2014).

Our study has several limitations that warrant consideration. First, the relatively recent implementation of the liquidity risk management requirements limits our ability to assess long-term effects. Second, the complex nature of investment company governance structures makes it challenging to isolate the specific channels through which risk management

requirements influence disclosure practices. Additionally, our analysis may not fully capture all relevant governance mechanisms that influence the relationship between risk management and disclosure.

Future research could address these limitations by examining longer-term effects as more data becomes available. Promising avenues for investigation include the role of board composition in mediating the relationship between risk management requirements and disclosure practices, the influence of ownership structure on the effectiveness of governance mechanisms, and the interaction between liquidity risk management programs and other aspects of investment company governance. Such research would further enhance our understanding of how regulatory requirements shape corporate governance and disclosure practices in the investment company industry.

These findings contribute to the broader literature on corporate governance and disclosure by highlighting the interconnected nature of risk management requirements, governance mechanisms, and voluntary disclosure practices. As regulatory frameworks continue to evolve, understanding these relationships becomes increasingly important for both academics and practitioners in the investment company industry.

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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
Investment Company Liquidity Risk Management Corporate Governance

	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.