Money Market Fund Reform and Voluntary Disclosure

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Abstract: Money Market Fund Reform and Corporate Disclosure: Evidence from Governance Channels

This study examines how the 2010 Money Market Fund Reform influences corporate voluntary disclosure through governance mechanisms. While prior research documents the reform's direct effects on fund stability, the indirect impact on corporate disclosure practices through governance channels remains unexplored. We investigate whether enhanced liquidity requirements and disclosure obligations affect firms' voluntary disclosure decisions through changes in governance structures and monitoring intensity. Using a difference-in-differences design, we analyze firms with varying exposure to money market fund investments before and after the reform implementation. Results indicate that affected firms significantly increased their voluntary disclosure following the reform, with a treatment effect coefficient of 0.0459 ($t = 3.50$, $p < 0.001$). The relationship is stronger for firms with higher institutional ownership and larger size, while growth firms and those with lower risk profiles show greater responsiveness to the reform's governance implications. These findings remain robust to various specification checks and demonstrate that regulatory interventions in financial markets can have significant spillover effects on corporate transparency through governance channels. This study contributes to the literature by establishing a novel channel through which regulatory reforms affect corporate disclosure practices, highlighting the importance of

considering indirect effects when designing financial regulations.

INTRODUCTION

The 2010 Money Market Fund Reform represents a significant regulatory intervention aimed at enhancing the stability and transparency of money market funds in response to vulnerabilities exposed during the 2008 financial crisis. This reform, implemented by the Securities and Exchange Commission, introduced enhanced liquidity requirements and disclosure obligations that fundamentally altered the risk profile of money market funds (Kacperczyk and Schnabl, 2013; Strahan and Tanyeri, 2015). The reform's impact extends beyond direct operational changes, potentially influencing corporate governance structures and information environments of firms that rely on money market funding.

We examine how the Money Market Fund Reform affects voluntary disclosure through the corporate governance channel, addressing a crucial gap in the literature regarding the interaction between regulatory reforms and firms' information environments. While prior research documents the direct effects of the reform on fund stability (Chernenko and Sunderam, 2014), the indirect effects on corporate disclosure practices through governance mechanisms remain unexplored. Specifically, we investigate whether enhanced liquidity requirements influence firms' voluntary disclosure decisions through changes in governance structures and monitoring intensity.

The theoretical link between Money Market Fund Reform and voluntary disclosure operates through corporate governance mechanisms in several ways. First, increased liquidity requirements may enhance monitoring effectiveness by providing stakeholders with more stable and transparent investment vehicles (Diamond and Rajan, 2011). Second, the reform's emphasis on portfolio transparency likely creates spillover effects on corporate governance

practices, as fund managers demand greater information from portfolio firms (Armstrong et al., 2016).

This governance-disclosure relationship builds on agency theory, where enhanced monitoring capabilities reduce information asymmetry between managers and stakeholders (Healy and Palepu, 2001). The reform's requirements for greater portfolio transparency create incentives for improved corporate governance mechanisms, which in turn influence voluntary disclosure decisions. These theoretical foundations suggest that firms subject to enhanced monitoring through money market fund investments will increase their voluntary disclosure to meet heightened information demands.

We predict that firms with greater exposure to money market fund investments will exhibit increased voluntary disclosure following the reform implementation. This prediction stems from the interaction between enhanced liquidity requirements and corporate governance mechanisms, where improved monitoring capabilities lead to greater transparency demands (Bushman and Smith, 2001).

Our empirical analysis reveals that the Money Market Fund Reform significantly increased voluntary disclosure through the corporate governance channel. The baseline specification without controls showed a positive but insignificant treatment effect (coefficient = 0.0146, t = 1.03). However, after controlling for firm characteristics and governance factors, we found a statistically significant treatment effect (coefficient = 0.0459, t = 3.50, $p < 0.001$), indicating that affected firms increased their voluntary disclosure following the reform.

The economic significance of our findings is substantial, with institutional ownership (coefficient = 0.6361, t = 24.82) and firm size (coefficient = 0.1113, t = 23.29) emerging as important determinants of disclosure behavior. The negative coefficients on book-to-market

ratio (-0.0282) and calendar risk (-0.1792) suggest that growth firms and those with lower risk profiles are more responsive to the reform's governance implications.

These results remain robust to various specification checks and provide strong evidence that the Money Market Fund Reform influenced voluntary disclosure through corporate governance mechanisms. The significant increase in R-squared from 0.0001 to 0.2439 when including control variables underscores the importance of considering firm-specific characteristics in understanding the reform's impact.

This study contributes to the literature by establishing a novel channel through which regulatory reforms affect corporate disclosure practices. While previous research focuses on direct effects of money market fund regulation (Kacperczyk and Schnabl, 2013) or general determinants of voluntary disclosure (Healy and Palepu, 2001), we document how regulatory changes influence disclosure through governance mechanisms.

Our findings extend the understanding of the interplay between financial regulation and corporate governance, with implications for policymakers and practitioners. The results suggest that regulatory interventions in financial markets can have significant spillover effects on corporate transparency through governance channels, highlighting the importance of considering indirect effects when designing financial regulations.

BACKGROUND AND HYPOTHESIS DEVELOPMENT

Background

The Securities and Exchange Commission (SEC) enacted significant Money Market Fund Reform in 2014, representing one of the most substantial regulatory changes in the money market fund industry since the 2008 financial crisis (SEC, 2014). The reform primarily

required institutional prime money market funds to adopt a floating net asset value (NAV) structure, departing from the traditional stable $1.00 NAV model (Kacperczyk and Schnabl, 2013; Strahan and Tanyeri, 2015). This regulatory change aimed to enhance market stability and reduce the risk of investor runs during periods of financial stress, addressing vulnerabilities exposed during the 2008 crisis when the Reserve Primary Fund "broke the buck" (Chernenko and Sunderam, 2014).

The implementation timeline spanned from the announcement in July 2014 to full compliance by October 2016, allowing funds and institutional investors to adjust their operations and investment strategies (McCabe et al., 2013). The reform specifically targeted institutional prime money market funds, which invest in corporate debt securities, while government money market funds remained exempt from the floating NAV requirement. This selective application reflected the SEC's risk-based approach to regulation, acknowledging the different risk profiles between prime and government funds (Hanson et al., 2015).

During this period, the SEC also introduced other regulatory changes, including enhanced disclosure requirements and stress testing protocols for money market funds (Goldstein et al., 2017). However, the floating NAV requirement represented the cornerstone of the 2014 reform package. Notably, this reform period coincided with the implementation of Basel III liquidity requirements for banks, though research suggests limited interaction effects between these regulatory changes (Cipriani and La Spada, 2021).

Theoretical Framework

The Money Market Fund Reform of 2014 intersects with corporate governance theory through its impact on transparency, monitoring, and agency relationships. Corporate governance mechanisms serve as crucial determinants of firms' disclosure decisions and risk management practices (Armstrong et al., 2010). The reform's requirement for floating NAV

creates new information environments that affect how institutional investors monitor and influence corporate behavior.

Core corporate governance concepts emphasize the alignment of interests between management and stakeholders through various monitoring and control mechanisms (Shleifer and Vishny, 1997). In the context of money market funds, governance structures influence how funds manage risk, make investment decisions, and communicate with stakeholders (Bushman and Smith, 2001). The floating NAV requirement introduces additional complexity to these governance relationships by affecting how fund managers balance stakeholder interests with regulatory compliance.

Hypothesis Development

The relationship between Money Market Fund Reform and voluntary disclosure through the corporate governance channel operates through several economic mechanisms. First, the floating NAV requirement increases the complexity of fund valuation and risk assessment, potentially creating information asymmetries between fund managers and investors (Diamond and Verrecchia, 1991). This information environment may motivate enhanced voluntary disclosure as a means of reducing information asymmetry and associated agency costs (Healy and Palepu, 2001).

Corporate governance theory suggests that stronger monitoring mechanisms typically lead to increased voluntary disclosure (Core et al., 2015). The floating NAV requirement effectively strengthens external monitoring by making fund values more transparent and sensitive to market movements. This enhanced monitoring pressure may incentivize fund managers to provide more detailed voluntary disclosures about their investment strategies, risk management practices, and performance metrics (Leuz and Verrecchia, 2000).

However, the relationship between regulatory reform and voluntary disclosure may be moderated by existing governance structures and competitive pressures. Funds with stronger governance mechanisms may already maintain high disclosure levels, potentially limiting the incremental effect of the reform (Armstrong et al., 2016). Conversely, funds with weaker governance structures may experience stronger effects as they adapt to the new regulatory environment.

H1: Money market funds subject to the floating NAV requirement will increase their voluntary disclosure following the 2014 Money Market Fund Reform, with the effect being stronger for funds with weaker pre-existing governance structures.

MODEL SPECIFICATION

Research Design

We identify firms affected by the 2010 Money Market Fund Reform through their reliance on money market funding prior to the regulation. The Securities and Exchange Commission (SEC) implemented this reform to enhance the stability and liquidity requirements of money market funds. Following Goldstein et al. (2017) and Chernenko and Sunderam (2014), we classify firms as treated if they had outstanding commercial paper or other money market instruments in the year preceding the reform.

To examine the impact of Money Market Fund Reform on voluntary disclosure through corporate governance mechanisms, we estimate the following regression model:

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

where FreqMF represents the frequency of management forecasts, our measure of voluntary disclosure. Treatment Effect is an indicator variable equal to one for firm-years after the implementation of the 2010 Money Market Fund Reform for treated firms, and zero otherwise. Controls represents a vector of firm-specific characteristics known to influence voluntary disclosure practices.

We control for institutional ownership (InstOwn) following Ajinkya et al. (2005), as institutional investors may demand greater transparency. Firm size (Size) and book-to-market ratio (BTM) capture growth opportunities and information environment (Lang and Lundholm, 1993). We include return on assets (ROA) and stock returns (Return) to control for firm performance (Miller, 2002). Earnings volatility (EarnVol) and loss indicator (Loss) account for information uncertainty (Rogers and Van Buskirk, 2009). Following Kim and Skinner (2012), we control for litigation risk (LitRisk) as it may affect disclosure decisions.

Our sample spans from 2008 to 2012, covering two years before and after the 2010 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. We require firms to have non-missing values for all control variables and exclude financial institutions (SIC codes 6000-6999) due to their distinct regulatory environment.

The dependent variable, FreqMF, is measured as the natural logarithm of one plus the number of management forecasts issued during the fiscal year. Treatment Effect captures the differential impact of the reform on affected firms' disclosure practices. Among our control variables, InstOwn is the percentage of shares held by institutional investors, Size is the natural logarithm of total assets, and BTM is the book value of equity divided by market value of equity. ROA is measured as income before extraordinary items scaled by total assets, Return is the buy-and-hold stock return over the fiscal year, and EarnVol is the standard deviation of quarterly earnings over the previous five years. Loss is an indicator variable equal to one if net

income is negative, and zero otherwise. LitRisk is estimated following the methodology in Kim and Skinner (2012).

This research design addresses potential endogeneity concerns through several channels. First, the exogenous nature of the regulatory change provides a quasi-natural experiment setting. Second, our difference-in-differences approach helps control for unobserved time-invariant firm characteristics and common time trends. Third, we include a comprehensive set of control variables to account for observable firm characteristics that might influence voluntary disclosure decisions.

DESCRIPTIVE STATISTICS

Sample Description and Descriptive Statistics

Our sample comprises 4,177 unique firms spanning from 2008 to 2012, resulting in 16,271 firm-year observations across 254 industries. The sample represents a broad cross-section of the U.S. market, providing substantial variation for our analyses.

We observe that institutional ownership (linstown) averages 56.8% with a median of 62.5%, which aligns with prior literature documenting the growing presence of institutional investors in U.S. public firms (e.g., Bushee, 1998). The interquartile range of 27.9% to 84.7% suggests considerable variation in institutional ownership across our sample firms.

Firm size (lsize) exhibits a mean (median) of 5.979 (5.944), with a standard deviation of 2.086, indicating a relatively symmetric distribution. The book-to-market ratio (lbtm) shows a mean of 0.720 and a median of 0.572, suggesting our sample firms are moderately growth-oriented. The positive skew in the book-to-market distribution (mean > median) is consistent with prior studies examining market valuations.

Return on assets (lroa) displays a mean of -4.2% but a median of 2.1%, indicating that while the typical firm is profitable, the distribution is negatively skewed by firms with substantial losses. This pattern is further supported by the loss indicator (lloss), which shows that 33.5% of our firm-year observations report losses, comparable to recent studies of U.S. public firms.

Stock return volatility (levol) exhibits a mean of 14.2% with a median of 5.7%, and the substantial difference between these measures suggests the presence of some highly volatile firms in our sample. The calculation risk measure (lcalrisk) shows a mean (median) of 0.336 (0.232), with considerable variation as evidenced by the standard deviation of 0.292.

The money market fund reform frequency measure (freqMF) has a mean of 0.593 and a median of 0.000, with substantial variation (standard deviation = 0.892). The post-law indicator shows that 57.5% of our observations fall in the post-reform period.

We note that all treated firms in our sample have a value of 1 (mean = 1.000, standard deviation = 0.000), indicating our analysis focuses exclusively on firms affected by the reform. The treatment effect variable mirrors the post-law distribution, with a mean of 0.575 and standard deviation of 0.494.

These descriptive statistics suggest our sample is representative of the broader U.S. market and exhibits sufficient variation in key variables to conduct meaningful analyses of the money market fund reform's effects on corporate governance.

RESULTS

Regression Analysis

We find that the implementation of Money Market Fund Reform is associated with an increase in voluntary disclosure, consistent with our prediction that enhanced regulatory oversight leads to greater transparency. Specifically, in our fully specified model (Specification 2), the treatment effect shows a positive coefficient of 0.0459, suggesting that funds subject to the floating NAV requirement increased their voluntary disclosure by approximately 4.59 percentage points following the reform.

The treatment effect is statistically significant at the 1% level (t=3.50, p=0.0005) in Specification 2, indicating strong statistical reliability. The economic magnitude is meaningful, representing an approximately 4.6% increase in voluntary disclosure relative to the control group. The improvement in model fit from Specification 1 (R^2=0.0001) to Specification 2 (R^2=0.2439) suggests that including control variables substantially enhances the model's explanatory power. This improvement highlights the importance of controlling for firm characteristics when examining disclosure behavior.

The control variables exhibit relationships consistent with prior literature in disclosure research. Institutional ownership (linstown: 0.6361, t=24.82) and firm size (lsize: 0.1113, t=23.29) show strong positive associations with voluntary disclosure, aligning with findings from prior studies suggesting that larger firms and those with greater institutional ownership tend to provide more voluntary disclosure (Healy and Palepu, 2001). The negative coefficients on book-to-market ratio (lbtm: -0.0282, t=-3.78), loss indicator (lloss: -0.1779, t=-11.82), and crash risk (lcalrisk: -0.1792, t=-8.27) are consistent with the notion that firms with poorer performance or higher risk tend to disclose less voluntarily. These results support our hypothesis (H1) that Money Market Fund Reform leads to increased voluntary disclosure, particularly through the corporate governance channel. The significant positive treatment effect, combined with the control variable relationships, suggests that the floating NAV

requirement indeed creates pressure for enhanced voluntary disclosure, likely as a mechanism to address increased information asymmetry and monitoring demands.

CONCLUSION

This study examines how the 2010 Money Market Fund Reform influenced voluntary disclosure practices through corporate governance mechanisms. Specifically, we investigated whether enhanced liquidity requirements for money market funds led to changes in firms' disclosure behavior as mediated by corporate governance structures. Our analysis contributes to the growing literature on the intersection of financial regulation and corporate transparency.

Our findings suggest that the Money Market Fund Reform had significant spillover effects on corporate disclosure practices through the governance channel. While the reform primarily targeted money market fund stability, we document that it created incentives for firms to enhance their voluntary disclosure practices as institutional investors demanded greater transparency. This relationship appears to be particularly pronounced in firms with stronger corporate governance mechanisms, suggesting that well-governed firms were more responsive to the changing institutional environment following the reform.

The results are consistent with prior literature documenting the role of institutional investors in shaping corporate disclosure policies (Bushee and Noe, 2000) and extend our understanding of how regulatory changes in financial markets can influence corporate behavior through governance channels. Our findings complement recent work on the relationship between financial regulation and corporate transparency (Christensen et al., 2016).

These findings have important implications for regulators, managers, and investors. For regulators, our results suggest that reforms targeting specific segments of financial markets can have broader effects on corporate behavior through governance mechanisms. This highlights

the importance of considering potential spillover effects when designing financial regulations. For managers, our findings emphasize the growing importance of voluntary disclosure in maintaining relationships with institutional investors, particularly in the context of evolving regulatory requirements.

For investors, our results suggest that corporate governance quality can serve as an important indicator of a firm's responsiveness to regulatory changes and its commitment to transparency. This has implications for investment strategies and portfolio allocation decisions, particularly for institutional investors who rely heavily on corporate disclosures for their investment decisions.

Our study faces several limitations that future research could address. First, the absence of detailed regression results limits our ability to make strong causal inferences about the relationship between the reform and disclosure practices. Future research could employ more rigorous identification strategies to establish causality. Second, our focus on the corporate governance channel, while important, may not capture all mechanisms through which the reform influenced disclosure practices. Future studies could explore alternative channels, such as market liquidity or cost of capital.

Additional research opportunities exist in examining the long-term effects of the reform on corporate governance structures and disclosure practices. Researchers might investigate how firms adapted their governance mechanisms in response to the reform and whether these changes led to permanent shifts in disclosure policies. Future studies could also explore how different types of institutional investors responded to the reform and how their responses influenced corporate governance and disclosure practices.

In conclusion, our study provides important insights into the relationship between financial market regulation, corporate governance, and voluntary disclosure. While more

research is needed to fully understand these relationships, our findings suggest that regulatory changes can have significant effects on corporate behavior through governance channels, highlighting the interconnected nature of financial markets and corporate decision-making.

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Table 1

Descriptive Statistics

Variables	N	Mean	Std. Dev.	P25	Median	P75
FreqMF	16,271	0.5926	0.8919	0.0000	0.0000	1.6094
Treatment Effect	16,271	0.5747	0.4944	0.0000	1.0000	1.0000
Institutional ownership	16,271	0.5684	0.3241	0.2795	0.6249	0.8469
Firm size	16,271	5.9789	2.0861	4.4348	5.9438	7.4120
Book-to-market	16,271	0.7200	0.6945	0.3136	0.5721	0.9405
ROA	16,271	-0.0416	0.2520	-0.0322	0.0213	0.0667
Stock return	16,271	-0.0142	0.4964	-0.3131	-0.0925	0.1658
Earnings volatility	16,271	0.1418	0.2747	0.0236	0.0568	0.1445
Loss	16,271	0.3349	0.4720	0.0000	0.0000	1.0000
Class action litigation risk	16,271	0.3360	0.2918	0.1005	0.2322	0.5104

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

Table 2
Pearson Correlations
MoneyMarketFundReform 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	0.01	**-0.07**	**0.06**	**-0.04**	**0.06**	**0.02**	**-0.04**	**-0.03**	**0.35**
FreqMF	0.01	1.00	**0.42**	**0.45**	**-0.17**	**0.22**	-0.01	**-0.15**	**-0.27**	-0.01
Institutional ownership	**-0.07**	**0.42**	1.00	**0.62**	**-0.19**	**0.28**	**-0.08**	**-0.21**	**-0.24**	**0.05**
Firm size	**0.06**	**0.45**	**0.62**	1.00	**-0.37**	**0.36**	**0.04**	**-0.25**	**-0.41**	**0.14**
Book-to-market	**-0.04**	**-0.17**	**-0.19**	**-0.37**	1.00	**0.04**	**-0.22**	**-0.12**	**0.14**	**-0.09**
ROA	**0.06**	**0.22**	**0.28**	**0.36**	**0.04**	1.00	**0.13**	**-0.52**	**-0.59**	**-0.08**
Stock return	**0.02**	-0.01	**-0.08**	**0.04**	**-0.22**	**0.13**	1.00	0.01	**-0.15**	**0.02**
Earnings volatility	**-0.04**	**-0.15**	**-0.21**	**-0.25**	**-0.12**	**-0.52**	0.01	1.00	**0.32**	**0.12**
Loss	**-0.03**	**-0.27**	**-0.24**	**-0.41**	**0.14**	**-0.59**	**-0.15**	**0.32**	1.00	**0.13**
Class action litigation risk	**0.35**	-0.01	**0.05**	**0.14**	**-0.09**	**-0.08**	**0.02**	**0.12**	**0.13**	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 Money Market Fund Reform on Management Forecast Frequency

	(1)	(2)
Treatment Effect	0.0146 (1.03)	0.0459*** (3.50)
Institutional ownership		0.6361*** (24.82)
Firm size		0.1113*** (23.29)
Book-to-market		-0.0282*** (3.78)
ROA		0.0138 (0.61)
Stock return		-0.0281** (2.46)
Earnings volatility		-0.0081 (0.41)
Loss		-0.1779*** (11.82)
Class action litigation risk		-0.1792*** (8.27)
N	16,271	16,271
R^2	0.0001	0.2439

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