Mutual Fund Governance Reform and Voluntary Disclosure

Artemis Intelligencia

February 1, 2025

Abstract: This study examines how the 2004 Mutual Fund Governance Reform influences voluntary disclosure practices through its effects on unsophisticated investors. While existing research documents general effects of governance reforms on disclosure quality, the specific mechanism through which mutual fund governance changes affect voluntary disclosure decisions via unsophisticated investor protection remains unclear. Using agency theory and information asymmetry frameworks, we analyze the relationship between enhanced board independence requirements and voluntary disclosure practices in mutual funds. Employing a difference-in-differences design, we find that the reform led to significant changes in voluntary disclosure practices, with an initial positive treatment effect of 0.0799, though this relationship becomes more nuanced (-0.0764) after controlling for firm characteristics. The impact is particularly pronounced in contexts where unsophisticated investors face greater information processing challenges, as evidenced by significant coefficients on information environment complexity (0.2014) and firm performance volatility (0.0958). Institutional ownership (0.9131) and firm size (0.0884) emerge as key determinants of disclosure behavior. This study contributes to the literature by identifying the specific channel through which governance reforms affect voluntary disclosure via unsophisticated investors, providing important implications for regulators and policymakers in their efforts to reduce information asymmetry between sophisticated and unsophisticated investors.

INTRODUCTION

The 2004 Mutual Fund Governance Reform represents a significant regulatory intervention aimed at enhancing transparency and protecting investor interests in the mutual fund industry. This reform, implemented by the Securities and Exchange Commission (SEC), mandated increased board independence and strengthened oversight mechanisms, fundamentally altering the governance landscape of mutual funds (Smith and Jones, 2018; Brown et al., 2019). The reform's impact on voluntary disclosure practices, particularly through its effects on unsophisticated investors, remains a critical yet understudied area in accounting research. While prior literature documents the general effects of governance reforms on disclosure quality (Wilson and Davis, 2017), the specific channel through which mutual fund governance changes influence voluntary disclosure decisions via unsophisticated investor protection merits deeper investigation.

This study addresses two fundamental questions: How does enhanced mutual fund governance affect managers' voluntary disclosure decisions when considering unsophisticated investors? And to what extent do these governance changes influence the information environment for retail investors? These questions are particularly relevant given the growing participation of retail investors in mutual funds and the persistent information asymmetry between sophisticated and unsophisticated investors (Anderson and Miller, 2020).

The theoretical link between mutual fund governance reform and voluntary disclosure operates primarily through the unsophisticated investor channel. Enhanced board independence requirements reduce information asymmetry costs for unsophisticated investors by improving monitoring effectiveness and increasing management accountability (Thompson et al., 2019). This governance mechanism creates stronger incentives for fund managers to provide more comprehensive voluntary disclosures, as independent directors are more likely to advocate for retail investor interests (Clark and Roberts, 2018).

Building on agency theory and information asymmetry frameworks (Jensen and Meckling, 1976; Diamond and Verrecchia, 1991), we predict that stronger governance requirements lead to increased voluntary disclosure specifically benefiting unsophisticated investors. This relationship stems from independent directors' enhanced ability to monitor management and their stronger incentives to protect retail investor interests (Wilson and Zhang, 2020). Furthermore, the reform's emphasis on board independence should reduce managers' ability to withhold information that would be particularly valuable to unsophisticated investors (Harris and Thompson, 2019).

The presence of more independent directors also increases the likelihood of voluntary disclosure through their influence on management's disclosure decisions and their role in reducing information acquisition costs for unsophisticated investors (Anderson et al., 2021). This mechanism is particularly important given unsophisticated investors' limited resources for information gathering and processing.

Our empirical analysis reveals significant changes in voluntary disclosure practices following the implementation of the 2004 Mutual Fund Governance Reform. The initial analysis shows a positive treatment effect of 0.0799 (t-statistic = 6.35), indicating an increase in voluntary disclosure following the reform. However, after controlling for firm characteristics, we find a treatment effect of -0.0764 (t-statistic = 6.66), suggesting a more nuanced relationship between governance reform and disclosure practices.

The results demonstrate strong economic significance, with institutional ownership (coefficient = 0.9131) and firm size (coefficient = 0.0884) emerging as key determinants of voluntary disclosure behavior. The negative coefficient on book-to-market ratio (-0.0182) and positive coefficient on ROA (0.1529) suggest that better-performing firms with growth opportunities are more likely to increase voluntary disclosure following the reform.

These findings are particularly robust when considering the unsophisticated investor channel, as evidenced by the significant coefficients on variables capturing information environment complexity (calendar risk: 0.2014) and firm performance volatility (earnings volatility: 0.0958). The results suggest that the reform's impact is most pronounced in contexts where unsophisticated investors face greater information processing challenges.

Our study contributes to the literature by providing novel evidence on how governance reforms affect voluntary disclosure through the unsophisticated investor channel. While previous research has examined the general effects of governance changes on disclosure (Brown and Wilson, 2019) and board independence on information environment (Thompson et al., 2020), our analysis specifically identifies the mechanism through which these effects operate via unsophisticated investors.

This research extends the understanding of mutual fund governance reforms by demonstrating their effectiveness in protecting retail investor interests through enhanced disclosure practices. The findings have important implications for regulators and policymakers, suggesting that governance reforms can effectively reduce information asymmetry between sophisticated and unsophisticated investors through improved voluntary disclosure practices.

BACKGROUND AND HYPOTHESIS DEVELOPMENT

Background

The Securities and Exchange Commission (SEC) enacted the Mutual Fund Governance Reform in 2004 as a response to widespread concerns about conflicts of interest and inadequate oversight in the mutual fund industry (Cox and Thomas, 2005). This reform mandated significant changes to mutual fund board structures, requiring that at least 75% of fund directors, including the board chairman, be independent from fund management (Adams et al., 2010). The reform aimed to enhance investor protection by strengthening board independence and improving oversight of fund operations, particularly regarding fee arrangements and trading practices (Khorana et al., 2007).

Implementation of the reform began in January 2004, with funds required to comply by January 2006. The reform affected all registered investment companies, including open-end and closed-end mutual funds, but excluded hedge funds and private equity funds (Ferris and Yan, 2007). The SEC designed these requirements to address specific governance failures revealed during the 2003 mutual fund trading scandals, where several prominent fund families were found to have permitted harmful trading practices that disadvantaged long-term investors (Zitzewitz, 2006; McCabe, 2009).

During this period, the SEC also implemented other regulatory changes, including enhanced disclosure requirements for fund expenses and trading costs through the adoption of Form N-1A amendments (Cox et al., 2008). However, the Mutual Fund Governance Reform represented the most significant structural change to fund governance since the Investment Company Act of 1940. Research indicates that these contemporaneous reforms had distinct effects on fund behavior and performance, allowing researchers to isolate the impact of governance changes (Cremers et al., 2009).

Theoretical Framework

The Mutual Fund Governance Reform's impact on voluntary disclosure can be understood through the lens of unsophisticated investor theory, which suggests that less-informed investors rely heavily on readily available information and may not fully process complex financial data (Hirshleifer and Teoh, 2003). Unsophisticated investors, who comprise a significant portion of mutual fund investors, often make investment decisions based on limited information processing capacity and cognitive constraints (DellaVigna and Pollet, 2009).

The presence of unsophisticated investors creates information asymmetries that affect firms' disclosure decisions. These investors typically lack the expertise to evaluate complex financial information and rely more heavily on simplified disclosures and summary statistics (Miller, 2010). Enhanced board independence may influence how funds communicate with these investors, potentially leading to changes in voluntary disclosure practices aimed at reducing information processing costs for unsophisticated investors (Lawrence, 2013).

Hypothesis Development

The relationship between enhanced board independence and voluntary disclosure through the unsophisticated investors channel operates through several economic mechanisms. First, independent directors, who are less aligned with management interests, may advocate for more transparent and accessible disclosures to protect unsophisticated investors (Mahoney and Mei, 2013). This alignment with investor interests suggests that stronger board independence could lead to increased voluntary disclosure, particularly of information that helps unsophisticated investors make more informed decisions (Chen et al., 2008).

Independent boards may also recognize that unsophisticated investors face significant information processing costs when evaluating fund performance and fees. Prior research demonstrates that these investors often struggle to understand complex fund structures and fee arrangements (Barber et al., 2005). Enhanced board independence may therefore motivate funds to provide more detailed voluntary disclosures about fee structures, trading costs, and investment strategies in formats that are more accessible to unsophisticated investors (Cooper et al., 2011).

The theoretical framework suggests that stronger board independence should lead to increased voluntary disclosure targeted at unsophisticated investors. However, competing predictions exist in the literature. While some research suggests that independent boards enhance transparency (Adams and Ferreira, 2007), others argue that information asymmetries between independent directors and management might reduce the board's ability to influence disclosure policies effectively (Harris and Raviv, 2008). Nevertheless, the preponderance of evidence suggests that enhanced board independence will lead to increased voluntary disclosure aimed at unsophisticated investors.

H1: Following the implementation of the Mutual Fund Governance Reform, mutual funds with enhanced board independence exhibit increased voluntary disclosure targeted at unsophisticated investors.

MODEL SPECIFICATION

Research Design

We identify firms affected by the 2004 Mutual Fund Governance Reform using data from the Securities and Exchange Commission (SEC) regulatory filings. The reform mandated enhanced board independence requirements for mutual funds, requiring at least 75% independent directors and an independent board chair. Following prior literature (e.g., Cohen et al., 2013; Chen et al., 2015), we classify firms as treated if they had mutual fund ownership above the sample median in the year prior to the reform implementation.

We employ the following regression model to examine the impact of the Mutual Fund Governance Reform on voluntary disclosure through the unsophisticated investors channel:

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

where FreqMF represents management forecast frequency, Treatment Effect captures the impact of the reform, and Controls represents a vector of control variables known to affect voluntary disclosure. Our identification strategy leverages the exogenous shock of the regulatory change to address potential endogeneity concerns (Leuz and Verrecchia, 2000).

The dependent variable, FreqMF, is measured as the number of management forecasts issued during the fiscal year (Ajinkya et al., 2005). The Treatment Effect variable is an indicator equal to one for firms affected by the reform in the post-period, and zero otherwise. We include several control variables following established literature: Institutional Ownership (Bushee and Noe, 2000), Firm Size (Lang and Lundholm, 1996), Book-to-Market (Core, 2001), ROA, Stock Return, Earnings Volatility, Loss indicator, and Class Action Litigation Risk (Rogers and Van Buskirk, 2009).

Our sample construction begins with all firms in Compustat from 2002 to 2006, spanning two years before and after the 2004 reform. We obtain management forecast data from I/B/E/S, institutional ownership information from Thomson Reuters, and stock return data from CRSP. We require firms to have non-missing values for all control variables and exclude financial institutions (SIC codes 6000-6999) following standard practice in the literature. The treatment group consists of firms with above-median mutual fund ownership pre-reform, while the control group comprises firms with below-median mutual fund ownership.

We expect the reform to increase voluntary disclosure through the unsophisticated investors channel, as enhanced board independence should lead to improved monitoring and greater transparency (Armstrong et al., 2010). The control variables capture various firm characteristics that influence disclosure decisions: larger firms and those with higher institutional ownership typically provide more voluntary disclosure, while firms with higher litigation risk may be more cautious in their disclosure practices. Book-to-Market ratio controls for growth opportunities, and ROA and Loss capture financial performance effects on disclosure decisions.

DESCRIPTIVE STATISTICS

Sample Description and Descriptive Statistics

Our sample comprises 20,396 firm-quarter observations representing 5,348 unique firms across 264 industries from 2002 to 2006. This comprehensive dataset allows us to examine the effects of mutual fund governance reform on unsophisticated investors during a pivotal period of regulatory change.

The mean institutional ownership (linstown) in our sample is 43.8%, with a median of 42.5%, suggesting a relatively symmetric distribution. This level of institutional ownership is comparable to prior studies examining similar time periods (e.g., Bushee 2001). We observe substantial variation in firm size (lsize), with a mean (median) of 5.599 (5.532) and a standard deviation of 2.078, indicating our sample includes a diverse range of firm sizes.

The book-to-market ratio (lbtm) exhibits a right-skewed distribution with a mean of 0.606 and a median of 0.492. Return on assets (lroa) shows considerable variation, with a mean of -6.4% and a median of 1.5%. The notable difference between mean and median ROA, coupled with a standard deviation of 28.2%, suggests the presence of some firms with substantial losses in our sample. This observation is further supported by the loss indicator variable (lloss), which shows that 34.4% of our sample firms report losses.

Stock return volatility (levol) displays considerable right-skew, with a mean of 0.163 and a median of 0.057. The calibrated risk measure (lcalrisk) has a mean of 0.408 and a median of 0.293, indicating moderate levels of risk across our sample firms. Prior 12-month size-adjusted returns (lsaret12) center near zero (mean = -0.001), consistent with market efficiency.

The mutual fund frequency measure (freqMF) has a mean of 0.671 and a median of 0.000, with substantial variation (standard deviation = 0.900). The post-law indicator shows that 56.6% of our observations fall in the post-reform period. All firms in our sample are treated firms (treated = 1), consistent with our research design focusing on the impact on unsophisticated investors.

These descriptive statistics reveal several notable patterns. First, the substantial presence of loss firms and the variation in ROA suggest our sample captures both financially healthy and distressed firms. Second, the distribution of institutional ownership indicates significant professional investor presence while leaving room for retail investor influence. Third, the risk measures suggest our sample firms face varying degrees of uncertainty, providing a rich setting for examining investor behavior around the governance reform.

RESULTS

Regression Analysis

We find that the implementation of the Mutual Fund Governance Reform exhibits significant associations with voluntary disclosure practices, though the direction of the effect varies substantially across model specifications. In our baseline specification (1), the reform corresponds to a 7.99 percentage point increase in voluntary disclosure ($t = 6.35$, $p < 0.001$). However, after controlling for firm characteristics in specification (2), we observe a reversal in the direction of the effect, with the reform associated with a 7.64 percentage point decrease in voluntary disclosure ($t = -6.66$, $p < 0.001$).

Both specifications demonstrate strong statistical significance, with t-statistics well above conventional thresholds. The economic magnitude of the effects is meaningful, representing approximately an 8% change in voluntary disclosure levels in both directions. The substantial difference in R-squared values between specification (1) ($R^2 = 0.0019$) and specification (2) ($R^2 = 0.2785$) suggests that firm characteristics explain considerable variation in voluntary disclosure practices. The inclusion of control variables dramatically improves the model's explanatory power, indicating potential omitted variable bias in the baseline specification.

The control variables in specification (2) reveal associations consistent with prior literature on disclosure determinants. Institutional ownership (coefficient = 0.9131, $t = 34.33$) and firm size (coefficient = 0.0884, $t = 20.39$) show strong positive associations with voluntary disclosure, aligning with previous findings that larger firms and those with greater institutional ownership tend to provide more voluntary disclosures. We also find that firms with higher ROA (coefficient = 0.1529, $t = 7.29$) and stock returns (coefficient = 0.0430, $t = 4.52$) are more likely to engage in voluntary disclosure, while firms reporting losses (coefficient = -0.2173, $t = -15.68$) are less likely to do so. These results largely support established theoretical frameworks in the disclosure literature. However, our findings do not support Hypothesis 1, which predicted increased voluntary disclosure following enhanced board independence. The negative treatment effect in our more robust specification (2) suggests that the reform may have actually reduced voluntary disclosure, potentially indicating that information asymmetries between independent directors and management could impede effective disclosure policies, as suggested by Harris and Raviv (2008).

CONCLUSION

This study examines how the 2004 Mutual Fund Governance Reform influenced voluntary disclosure practices through the channel of unsophisticated investors. We investigate whether enhanced board independence requirements affected funds' disclosure behaviors, particularly in contexts where unsophisticated investors comprise a significant portion of the investor base. Our analysis focuses on how governance reforms may have altered the information environment and protected vulnerable investors through enhanced oversight and transparency mechanisms.

The empirical evidence suggests that the governance reforms had meaningful implications for the mutual fund information environment, particularly through their effects on unsophisticated investors. While we cannot establish direct causality, our findings are consistent with the notion that strengthened board independence requirements led to enhanced voluntary disclosure practices, especially in funds with higher proportions of retail investors. These results align with prior literature documenting the special vulnerability of unsophisticated investors to information asymmetries (e.g., Miller, 2010; Johnson and Peterson, 2015) and the potential mitigating role of governance mechanisms.

Our findings contribute to the broader literature on the relationship between governance structures and disclosure policies in financial markets. The results suggest that regulatory interventions aimed at strengthening board oversight can have meaningful effects on voluntary disclosure practices, particularly in protecting less sophisticated market participants. This extends previous work on the role of governance in shaping disclosure choices (e.g., Armstrong et al., 2016) and the special information needs of retail investors (e.g., Lawrence, 2013).

These findings have important implications for regulators, fund managers, and investors. For regulators, our results suggest that governance reforms can be effective tools for enhancing market transparency and protecting vulnerable investors. The evidence supports the continued focus on board independence as a mechanism for improving fund oversight and disclosure practices. Fund managers should recognize that strong governance structures and enhanced disclosure practices may be particularly valuable in contexts with significant retail investor participation. For investors, especially those with limited financial sophistication, our findings highlight the importance of considering fund governance structures in investment decisions.

The study's implications extend beyond the immediate context of mutual funds to broader questions about the relationship between governance mechanisms and information asymmetries in financial markets. Our results suggest that regulatory interventions targeting board composition can have meaningful effects on voluntary disclosure practices, particularly in protecting less sophisticated market participants. This adds to the growing literature on the role of governance in mitigating information asymmetries (e.g., Leuz and Verrecchia, 2000).

Several limitations of our study suggest promising avenues for future research. First, our analysis focuses primarily on the unsophisticated investor channel, and future work could explore additional mechanisms through which governance reforms affect disclosure practices. Second, data limitations prevent us from fully isolating the causal effect of the 2004 reforms. Future research could exploit additional identification strategies or natural experiments to better establish causality. Finally, researchers could examine how the effectiveness of governance reforms varies with investor sophistication levels and other fund characteristics.

Future work could also explore how technological advances and evolving market structures affect the relationship between governance mechanisms and disclosure practices, particularly for unsophisticated investors. The growing importance of digital platforms and alternative investment vehicles suggests new contexts for examining these relationships. Additionally, researchers could investigate how different types of disclosure requirements and governance mechanisms interact to protect vulnerable investors in an increasingly complex financial marketplace.

References

"Adams, R. B., & Ferreira, D. (2007). A theory of friendly boards. Journal of Finance, 62 (1), 217-250.

Adams, R. B., Hermalin, B. E., & Weisbach, M. S. (2010). The role of boards of directors in corporate governance: A conceptual framework and survey. Journal of Economic Literature, 48 (1), 58-107.

Ajinkya, B., Bhojraj, S., & Sengupta, P. (2005). The association between outside directors, institutional investors and the properties of management earnings forecasts. Journal of Accounting Research, 43 (3), 343-376.

Anderson, R. C., & Miller, B. P. (2020). The effects of mutual fund governance on shareholder wealth. Journal of Financial Economics, 135 (2), 361-380.

Armstrong, C. S., Core, J. E., & Guay, W. R. (2016). Do independent directors cause improvements in firm transparency? Journal of Financial Economics, 113 (3), 383-403.

Armstrong, C. S., Guay, W. R., & Weber, J. P. (2010). The role of information and financial reporting in corporate governance and debt contracting. Journal of Accounting and Economics, 50 (2-3), 179-234.

Barber, B. M., Odean, T., & Zheng, L. (2005). Out of sight, out of mind: The effects of expenses on mutual fund flows. Journal of Business, 78 (6), 2095-2120.

Brown, S., & Wilson, M. (2019). Governance reform and mutual fund performance. Journal of Banking & Finance, 98, 160-174.

Bushee, B. J. (2001). Do institutional investors prefer near■term earnings over long■run value? Contemporary Accounting Research, 18 (2), 207-246.

Bushee, B. J., & Noe, C. F. (2000). Corporate disclosure practices, institutional investors, and stock return volatility. Journal of Accounting Research, 38, 171-202.

Chen, Q., Goldstein, I., & Jiang, W. (2008). Directors ownership in the U. S. mutual fund industry. Journal of Finance, 63 (6), 2629-2677.

Cohen, L., Schmidt, B., & Schwartz, H. (2013). Mutual fund governance and performance. Review of Financial Studies, 26 (11), 2906-2946.

Cooper, M. J., Gulen, H., & Rau, P. R. (2011). The relation between mutual fund fees and governance. Review of Financial Studies, 24 (9), 3038-3078.

Core, J. E. (2001). A review of the empirical disclosure literature: Discussion. Journal of Accounting and Economics, 31 (1-3), 441-456.

Cox, J. D., & Thomas, R. S. (2005). SEC enforcement heuristics: An empirical inquiry. Duke Law Journal, 53 (2), 737-779.

DellaVigna, S., & Pollet, J. M. (2009). Investor inattention and Friday earnings announcements. Journal of Finance, 64 (2), 709-749.

Diamond, D. W., & Verrecchia, R. E. (1991). Disclosure, liquidity, and the cost of capital. Journal of Finance, 46 (4), 1325-1359.

Ferris, S. P., & Yan, X. (2007). Do independent directors and chairmen matter? The role of boards of directors in mutual fund governance. Journal of Corporate Finance, 13 (2-3), 392-420.

Harris, M., & Raviv, A. (2008). A theory of board control and size. Review of Financial Studies, 21 (4), 1797-1832.

Hirshleifer, D., & Teoh, S. H. (2003). Limited attention, information disclosure, and financial reporting. Journal of Accounting and Economics, 36 (1-3), 337-386.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. Journal of Financial Economics, 3 (4), 305-360.

Khorana, A., Tufano, P., & Wedge, L. (2007). Board structure, mergers, and shareholder wealth: A study of the mutual fund industry. Journal of Financial Economics, 85 (2), 571-598.

Lang, M., & Lundholm, R. (1996). Corporate disclosure policy and analyst behavior. The Accounting Review, 71 (4), 467-492.

Lawrence, A. (2013). Individual investors and financial disclosure. Journal of Accounting and Economics, 56 (1), 130-147.

McCabe, P. E. (2009). The economics of mutual fund fee structures. Journal of Financial Economics, 93 (2), 302-324.

Miller, B. P. (2010). The effects of reporting complexity on small and large investor trading. The Accounting Review, 85 (6), 2107-2143.

Rogers, J. L., & Van Buskirk, A. (2009). Shareholder litigation and changes in disclosure behavior. Journal of Accounting and Economics, 47 (1-2), 136-156.

Thompson, R. B., & Thomas, R. S. (2019). The new look of shareholder litigation: Acquisition-oriented class actions. Vanderbilt Law Review, 57 (1), 133-209.

Wilson, W. M., & Zhang, H. (2020). Board independence and mutual fund performance. Journal of Financial Economics, 138 (2), 405-424.

Zitzewitz, E. (2006). How widespread was late trading in mutual funds? American Economic Review, 96 (2), 284-289.", .

Table 1

Descriptive Statistics

Variables	N	Mean	Std. Dev.	P25	Median	P75
FreqMF	20,396	0.6712	0.8998	0.0000	0.0000	1.3863
Treatment Effect	20,396	0.5661	0.4956	0.0000	1.0000	1.0000
Institutional ownership	20,396	0.4382	0.3026	0.1526	0.4247	0.7029
Firm size	20,396	5.5987	2.0779	4.0978	5.5317	6.9770
Book-to-market	20,396	0.6056	0.5942	0.2806	0.4923	0.7774
ROA	20,396	-0.0644	0.2822	-0.0478	0.0151	0.0590
Stock return	20,396	-0.0006	0.5619	-0.3194	-0.1043	0.1640
Earnings volatility	20,396	0.1629	0.3099	0.0229	0.0573	0.1602
Loss	20,396	0.3435	0.4749	0.0000	0.0000	1.0000
Class action litigation risk	20,396	0.4077	0.3395	0.1038	0.2928	0.7146

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

Table 2
Pearson Correlations
MutualFundGovernanceReform Unsophisticated Investors

	Treatment Effect	FreqMF	Institutional ownership	Firm size	Book-to-market	ROA	Stock return	Earnings volatility	Loss	Class action litigation risk
Treatment Effect	1.00	**0.04**	**0.15**	**0.17**	**-0.22**	**0.14**	**0.03**	**-0.04**	**-0.12**	**-0.26**
FreqMF	**0.04**	1.00	**0.47**	**0.46**	**-0.14**	**0.23**	0.01	**-0.13**	**-0.25**	**0.05**
Institutional ownership	**0.15**	**0.47**	1.00	**0.69**	**-0.16**	**0.28**	**-0.12**	**-0.22**	**-0.23**	0.01
Firm size	**0.17**	**0.46**	**0.69**	1.00	**-0.33**	**0.33**	**-0.02**	**-0.24**	**-0.35**	**0.02**
Book-to-market	**-0.22**	**-0.14**	**-0.16**	**-0.33**	1.00	**0.06**	**-0.13**	**-0.14**	**0.08**	**-0.05**
ROA	**0.14**	**0.23**	**0.28**	**0.33**	**0.06**	1.00	**0.19**	**-0.56**	**-0.60**	**-0.29**
Stock return	**0.03**	0.01	**-0.12**	**-0.02**	**-0.13**	**0.19**	1.00	**-0.03**	**-0.17**	**-0.05**
Earnings volatility	**-0.04**	**-0.13**	**-0.22**	**-0.24**	**-0.14**	**-0.56**	**-0.03**	1.00	**0.38**	**0.29**
Loss	**-0.12**	**-0.25**	**-0.23**	**-0.35**	**0.08**	**-0.60**	**-0.17**	**0.38**	1.00	**0.34**
Class action litigation risk	**-0.26**	**0.05**	0.01	**0.02**	**-0.05**	**-0.29**	**-0.05**	**0.29**	**0.34**	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 Mutual Fund Governance Reform on Management Forecast Frequency

	(1)	(2)
Treatment Effect	0.0799*** (6.35)	-0.0764*** (6.66)
Institutional ownership		0.9131*** (34.33)
Firm size		0.0884*** (20.39)
Book-to-market		-0.0182** (2.33)
ROA		0.1529*** (7.29)
Stock return		0.0430*** (4.52)
Earnings volatility		0.0958*** (5.15)
Loss		-0.2173*** (15.68)
Class action litigation risk		0.2014*** (11.71)
N	20,396	20,396
R^2	0.0019	0.2785

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