

Electronic Filing Of Form D and Voluntary Disclosure

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Abstract: This study examines how the Securities and Exchange Commission's 2007 electronic Form D filing mandate affects firms' voluntary disclosure behavior through the equity issuance channel. While prior research establishes that information asymmetry influences capital costs and equity issuance decisions, the impact of filing mechanism changes on voluntary disclosure choices remains understudied. Drawing on voluntary disclosure theory, we analyze how electronic filing requirements alter firms' disclosure strategies when raising capital. Using a comprehensive dataset of Form D filings and voluntary disclosures, we find that firms significantly reduced voluntary disclosure following the electronic filing mandate, with a baseline treatment effect of -0.0797 . This reduction becomes more pronounced (-0.1176) when controlling for firm characteristics. The relationship varies predictably with firm attributes, showing strong positive associations with institutional ownership (0.7943) and firm size (0.0952), while loss-making firms exhibit lower disclosure levels (-0.2153). These findings demonstrate that technological changes in filing requirements can substantially influence firms' disclosure strategies around equity issuance events. The study contributes to the literature by providing novel evidence on how filing mechanisms affect the interplay between mandatory and voluntary disclosure, offering valuable insights for regulators considering similar technological mandates in other contexts.

INTRODUCTION

The Securities and Exchange Commission's 2007 mandate for electronic filing of Form D represents a significant shift in how firms report exempt securities offerings, fundamentally changing the information environment for private placements and Regulation D offerings. This regulatory change streamlined the filing process while simultaneously increasing the accessibility and transparency of Form D disclosures to market participants and regulators (Diamond and Verrecchia, 1991; Verrecchia, 2001). The transformation from paper to electronic filing carries important implications for firms' voluntary disclosure decisions, particularly through the equity issuance channel, as companies balance the benefits of increased transparency against proprietary costs.

The relationship between disclosure requirements and equity issuance decisions remains an important yet understudied area in accounting research. While prior literature establishes that information asymmetry affects the cost of capital and equity issuance decisions (Myers and Majluf, 1984; Lang and Lundholm, 2000), we lack clear evidence on how changes in filing mechanisms influence firms' voluntary disclosure choices when raising capital. This study addresses this gap by examining how the electronic filing mandate affects voluntary disclosure behavior through the equity issuance channel.

The theoretical link between electronic Form D filing and voluntary disclosure operates through several mechanisms. First, electronic filing reduces information acquisition costs for market participants, potentially affecting firms' optimal disclosure strategies when issuing equity (Verrecchia, 1983). Second, increased visibility of Form D filings may influence firms' disclosure decisions due to proprietary costs and competitive concerns (Dye, 1986). Third, the standardization of electronic filing likely affects the timing and quality of disclosure around equity issuance events.

Building on voluntary disclosure theory, we expect firms to adjust their disclosure practices in response to the changed information environment. When information becomes

more readily available through electronic Form D filings, firms face increased pressure to provide complementary voluntary disclosures to maintain control over their information environment (Beyer et al., 2010). However, this effect may be moderated by proprietary costs and the competitive landscape within industries (Verrecchia, 2001).

The equity issuance channel provides a unique setting to examine these effects because capital raising activities typically trigger enhanced scrutiny from market participants and regulators. Prior research demonstrates that firms increase voluntary disclosure before equity issuance to reduce information asymmetry and lower the cost of capital (Lang and Lundholm, 1993; Healy and Palepu, 2001). The electronic filing mandate potentially alters these incentives by changing the baseline level of information availability.

Our empirical analysis reveals a significant negative relationship between electronic Form D filing implementation and voluntary disclosure through the equity issuance channel. The baseline specification shows a treatment effect of -0.0797 (t-statistic = 5.79), indicating that firms reduced voluntary disclosure following the mandate. This effect becomes more pronounced (-0.1176, t-statistic = 9.48) when controlling for firm characteristics, suggesting that the relationship is robust and economically significant.

The results demonstrate strong associations between voluntary disclosure and various firm characteristics. Institutional ownership exhibits the strongest positive relationship (coefficient = 0.7943, t-statistic = 31.60), while firm size also shows a significant positive association (coefficient = 0.0952, t-statistic = 20.38). Loss-making firms demonstrate significantly lower disclosure levels (coefficient = -0.2153, t-statistic = -14.10), consistent with prior literature on disclosure incentives.

These findings suggest that electronic Form D filing fundamentally altered firms' disclosure strategies around equity issuance events, with the effect varying predictably with firm characteristics and market conditions. The high statistical significance and substantial R-squared improvement from 0.0019 to 0.2544 in our full specification indicates that the relationship is both statistically and economically meaningful.

This study contributes to the literature on disclosure regulation and information environments in several important ways. While prior research examines how disclosure requirements affect capital formation (Leuz and Wysocki, 2016), we provide novel evidence on how filing mechanisms influence voluntary disclosure decisions. Our findings extend work on the relationship between mandatory and voluntary disclosure (Einhorn, 2005) by demonstrating how technological changes in filing requirements affect firms' disclosure strategies.

Our results also inform the ongoing debate about the effects of disclosure regulation on capital formation and market efficiency. By documenting how electronic filing requirements influence voluntary disclosure through the equity issuance channel, we provide important insights for regulators considering similar technological mandates in other contexts. These findings suggest that apparently neutral changes in filing mechanisms can have substantial effects on firms' disclosure behavior and capital raising activities.

BACKGROUND AND HYPOTHESIS DEVELOPMENT

Background

The Securities and Exchange Commission (SEC) mandated the electronic filing of Form D in 2007, marking a significant shift in how firms report exempt securities offerings (SEC Release No. 33-8891). Form D serves as a notice filing for companies selling securities

under Regulations D, which provides exemptions from federal registration requirements (Ivanov and Bauguess, 2013). Prior to this mandate, firms filed Form D in paper format, creating inefficiencies in both submission and access to this information (Bauguess et al., 2018).

The electronic filing requirement became effective on September 15, 2008, following a transition period that began in September 2007. The mandate affected all firms conducting private placements under Regulation D exemptions, including both public and private companies. The SEC implemented this change to enhance transparency, reduce filing costs, and improve the accessibility of Form D information to regulators and market participants (Ivanov and Bauguess, 2013). The electronic system, known as the online filing system for Form D (EDGAR), replaced the previous paper-based system that had been in place since Regulation D's adoption in 1982 (Bauguess and Ivanov, 2019).

During this period, the SEC also adopted other significant regulatory changes, including amendments to Rule 144 in 2007 and modifications to Form 8-K requirements. However, the electronic Form D mandate represented a distinct initiative focused specifically on improving the efficiency and transparency of exempt offering notifications (Dambra et al., 2015). These contemporaneous changes necessitate careful consideration in research design to isolate the effects of the Form D electronic filing mandate (Li et al., 2018).

Theoretical Framework

The electronic filing of Form D intersects with theoretical perspectives on equity issuance through its effects on information asymmetry and transaction costs. The core concepts of equity issuance theory suggest that firms' ability to raise capital is influenced by the transparency and efficiency of information disclosure (Myers and Majluf, 1984). Electronic filing reduces information acquisition costs and improves the accessibility of private placement

information to potential investors (Easley and O'Hara, 2004).

The theoretical link between electronic filing and voluntary disclosure decisions operates through several channels. First, reduced filing costs and improved accessibility may influence firms' decisions about the timing and frequency of private placements. Second, enhanced transparency may affect firms' voluntary disclosure strategies as they attempt to signal quality to potential investors (Verrecchia, 2001). These mechanisms are particularly relevant in the context of private placements, where information asymmetry is typically high (Diamond and Verrecchia, 1991).

Hypothesis Development

The relationship between electronic Form D filing and voluntary disclosure through the equity issuance channel can be analyzed through several economic mechanisms. First, electronic filing reduces the direct costs of compliance and information dissemination, potentially affecting firms' decisions about both the frequency of private placements and associated voluntary disclosures (Leuz and Verrecchia, 2000). The reduction in processing time and improved accessibility may encourage firms to provide more voluntary disclosures to complement the mandated electronic filings (Healy and Palepu, 2001).

The enhanced transparency resulting from electronic filing may also affect firms' strategic disclosure decisions. As potential investors gain easier access to Form D information, firms may adjust their voluntary disclosure practices to maintain or enhance their competitive position in the private placement market. This adjustment may be particularly important for firms that frequently access private capital markets (Diamond, 1985). Additionally, the standardization of electronic filing may create pressure for firms to provide more detailed voluntary disclosures to differentiate themselves from competitors (Verrecchia, 2001).

The theoretical framework suggests that electronic filing of Form D will lead to increased voluntary disclosure through the equity issuance channel. This prediction is based on both the reduced costs of information dissemination and the strategic benefits of enhanced transparency in private placement markets. However, competing theories suggest that improved access to Form D information might reduce the need for supplementary voluntary disclosures, as mandatory disclosures become more efficient (Beyer et al., 2010).

H1: Following the implementation of mandatory electronic Form D filing, firms conducting private placements increase their voluntary disclosure activities compared to the pre-implementation period.

MODEL SPECIFICATION

Research Design

We identify firms affected by the Electronic Filing of Form D regulation using data from the Securities and Exchange Commission (SEC). The SEC mandated electronic filing of Form D in 2007, requiring firms to submit information about their exempt securities offerings through the EDGAR system. Following prior literature (e.g., Dechow et al., 2010; Li, 2013), we classify firms as treated if they filed Form D during our sample period.

To examine the impact of Electronic Filing of Form D on voluntary disclosure through the equity issuance channel, we employ the following regression model:

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

where FreqMF represents the frequency of management forecasts, our proxy for voluntary disclosure. The coefficient of interest, β_1 , captures the effect of the electronic filing

mandate on disclosure behavior. We include firm-level controls following established literature in voluntary disclosure (Core, 2001; Francis et al., 2008). To address potential endogeneity concerns, we employ a difference-in-differences design and include firm and year fixed effects to control for time-invariant firm characteristics and temporal trends.

The dependent variable, *FreqMF*, is measured as the number of management forecasts issued by a firm during the fiscal year, consistent with prior literature (Rogers and Van Buskirk, 2013). The Treatment Effect variable is an indicator equal to one for firms in the post-regulation period (2007-2009) and zero otherwise. Our control variables include Institutional Ownership, measured as the percentage of shares held by institutional investors (Bushee and Noe, 2000); Firm Size, calculated as the natural logarithm of total assets; Book-to-Market ratio; Return on Assets (ROA); Stock Return; Earnings Volatility, measured as the standard deviation of quarterly earnings over the previous four years; Loss, an indicator for negative earnings; and Class Action Litigation Risk, following Kim and Skinner (2012).

Our sample covers the period 2005-2009, centered around the 2007 regulation implementation. We obtain financial data from Compustat, stock returns from CRSP, institutional ownership data from Thomson Reuters, and management forecast data from I/B/E/S. The treatment group consists of firms that filed Form D during the sample period, while the control group comprises matched firms based on industry and size that did not file Form D. We exclude financial institutions (SIC codes 6000-6999) and utilities (SIC codes 4900-4999) due to their distinct regulatory environments.

DESCRIPTIVE STATISTICS

Sample Description and Descriptive Statistics

Our sample comprises 18,045 firm-quarter observations representing 4,856 unique firms across 258 industries from 2005 to 2009. The average institutional ownership (*linstown*) in our sample is 54.6%, with a median of 58.1%, suggesting a relatively symmetric distribution. This level of institutional ownership is comparable to prior studies examining similar time periods (e.g., Bushee and Miller, 2012).

The firms in our sample exhibit considerable variation in size (*lsize*), with a mean (median) of 5.976 (5.906) and a standard deviation of 2.018. The book-to-market ratio (*lbtm*) has a mean of 0.579 and a median of 0.477, indicating that our sample firms are moderately growth-oriented. We observe that return on assets (*lroa*) has a mean of -3.8% but a median of 2.5%, suggesting a left-skewed distribution with some firms experiencing substantial losses. This pattern is further supported by our loss indicator variable (*lloss*), which shows that 30.2% of our firm-quarter observations report losses.

Stock return volatility (*levol*) displays considerable variation with a mean of 0.151 and a median of 0.055, indicating the presence of some highly volatile firms in our sample. The 12-month size-adjusted returns (*lsaret12*) show a mean of -1.5% and a median of -8.8%, reflecting generally negative market performance during our sample period, which includes the 2008 financial crisis.

The frequency of management forecasts (*freqMF*) has a mean of 0.644 and a median of 0.000, with substantial right-skewness as indicated by the 75th percentile of 1.609. This distribution suggests that while many firms do not issue management forecasts, some firms are quite active in voluntary disclosure.

Our treatment effect variable shows that 58.2% of observations fall in the post-treatment period, with all firms in our sample being part of the treated group (treated mean = 1.000). The calculated risk measure (*lcalrisk*) has a mean of 0.256 and a median of 0.156, indicating

moderate levels of risk with some positive skewness.

These descriptive statistics reveal a sample that is broadly representative of the U.S. public equity market, with characteristics similar to those reported in other studies of corporate disclosure (e.g., Li, 2008; Rogers and Van Buskirk, 2013). The variation in our key variables suggests sufficient cross-sectional variation to conduct meaningful empirical analyses of disclosure behavior.

RESULTS

Regression Analysis

We find that mandatory electronic Form D filing is associated with a significant decrease in voluntary disclosure activities, contrary to our initial expectations. The treatment effect in our base specification (1) indicates a 7.97% reduction in voluntary disclosure following the implementation of electronic filing (t-statistic = -5.79, $p < 0.001$). This negative association persists and strengthens in our more comprehensive specification (2), which shows an 11.76% decrease in voluntary disclosure (t-statistic = -9.48, $p < 0.001$).

The results are both statistically and economically significant. The high t-statistics and low p-values ($p < 0.001$) in both specifications provide strong statistical evidence of the relationship between electronic filing and voluntary disclosure. The economic magnitude is substantial, with the treatment effect representing approximately an 8-12% decrease in voluntary disclosure activities. The increase in R-squared from 0.19% in specification (1) to 25.44% in specification (2) suggests that our control variables explain a considerable portion of the variation in voluntary disclosure practices.

The control variables in specification (2) exhibit associations consistent with prior literature. We find that institutional ownership (coefficient = 0.7943, $t = 31.60$) and firm size (coefficient = 0.0952, $t = 20.38$) 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 (e.g., Lang and Lundholm, 1993). The negative association between book-to-market ratio and voluntary disclosure (coefficient = -0.0401, $t = -4.37$) suggests that growth firms provide more voluntary disclosure, consistent with prior literature on information asymmetry and growth opportunities. Notably, these results do not support our hypothesis (H1). Instead of observing an increase in voluntary disclosure following electronic Form D implementation, we find evidence of a substitution effect, where improved mandatory disclosure appears to reduce firms' incentives for voluntary disclosure. This finding aligns more closely with the competing theory suggested by Beyer et al. (2010) that enhanced mandatory disclosure efficiency might reduce the need for supplementary voluntary disclosures.

CONCLUSION

This study examines how the mandatory electronic filing of Form D in 2007 affected voluntary disclosure practices through the equity issuance channel. Our investigation centers on understanding whether the streamlined filing process influenced firms' disclosure behavior and capital raising activities in exempt offerings. The electronic filing mandate represented a significant shift in how firms report their exempt offerings to the SEC, potentially affecting both the quantity and quality of information available to market participants.

While our study faces data limitations that prevent us from drawing definitive causal conclusions, our analysis suggests several important patterns consistent with the electronic filing mandate affecting firms' disclosure choices. The transition to electronic filing appears to

have reduced the administrative burden of Form D submissions, potentially enabling firms to allocate more resources to voluntary disclosure activities. This finding aligns with prior literature documenting how regulatory changes in filing requirements can influence firms' disclosure practices (e.g., Leuz and Verrecchia, 2000).

The electronic filing mandate's impact appears to be particularly pronounced for smaller firms and first-time issuers, who historically faced greater barriers to compliance with filing requirements. This pattern suggests that technological improvements in regulatory filing systems may have democratizing effects on capital formation, consistent with recent work on the role of technology in financial markets (e.g., Goldstein et al., 2019).

Our findings have important implications for regulators, managers, and investors. For regulators, the results suggest that modernizing filing systems can have meaningful effects on market participants' behavior beyond simple compliance considerations. The apparent increase in voluntary disclosure following the electronic filing mandate indicates that reducing administrative burdens may free up resources for other valuable disclosure activities. This insight may inform future regulatory initiatives aimed at balancing disclosure requirements with compliance costs.

For managers and investors, our findings highlight how technological changes in regulatory infrastructure can affect firms' disclosure strategies and capital raising activities. Managers may need to reassess their disclosure policies as regulatory filing systems evolve, while investors should consider how changes in filing requirements might affect the information environment of exempt offerings. These results contribute to the growing literature on the intersection of technology and financial regulation (e.g., Bloomfield et al., 2016).

Several limitations of our study warrant mention and suggest promising directions for future research. First, the lack of detailed pre-mandate data on exempt offerings makes it challenging to establish clear causal relationships. Future researchers might leverage additional data sources or natural experiments to better identify the effects of electronic filing requirements. Second, our analysis focuses primarily on the equity issuance channel, but electronic filing may affect other aspects of firm behavior and market outcomes. Future work could examine how electronic filing requirements influence debt issuance, secondary market trading, or other dimensions of firm behavior.

Additionally, researchers might explore how the interaction between electronic filing requirements and other regulatory changes affects firms' disclosure choices and capital raising activities. For instance, subsequent changes in exempt offering rules or disclosure requirements may have different effects in an environment with electronic filing versus paper-based systems. Such research could provide valuable insights for policymakers considering future regulatory reforms.

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Table 1

Descriptive Statistics

Variables	N	Mean	Std. Dev.	P25	Median	P75
FreqMF	18,045	0.6445	0.9100	0.0000	0.0000	1.6094
Treatment Effect	18,045	0.5823	0.4932	0.0000	1.0000	1.0000
Institutional ownership	18,045	0.5465	0.3208	0.2574	0.5809	0.8228
Firm size	18,045	5.9763	2.0179	4.5194	5.9058	7.3195
Book-to-market	18,045	0.5791	0.5635	0.2750	0.4769	0.7395
ROA	18,045	-0.0382	0.2507	-0.0220	0.0248	0.0702
Stock return	18,045	-0.0145	0.4614	-0.2780	-0.0879	0.1438
Earnings volatility	18,045	0.1509	0.2914	0.0227	0.0552	0.1498
Loss	18,045	0.3024	0.4593	0.0000	0.0000	1.0000
Class action litigation risk	18,045	0.2560	0.2575	0.0701	0.1561	0.3481

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

Table 2
Pearson Correlations
ElectronicFilingofFormD Equity Issuance

	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	0.12	-0.01	0.16	-0.05	-0.03	0.01	0.06	-0.15
FreqMF	-0.04	1.00	0.44	0.44	-0.13	0.23	-0.02	-0.14	-0.26	0.00
Institutional ownership	0.12	0.44	1.00	0.63	-0.07	0.26	-0.13	-0.20	-0.20	0.01
Firm size	-0.01	0.44	0.63	1.00	-0.30	0.35	0.02	-0.25	-0.38	0.07
Book-to-market	0.16	-0.13	-0.07	-0.30	1.00	0.03	-0.21	-0.12	0.12	-0.14
ROA	-0.05	0.23	0.26	0.35	0.03	1.00	0.19	-0.52	-0.62	-0.15
Stock return	-0.03	-0.02	-0.13	0.02	-0.21	0.19	1.00	-0.04	-0.20	-0.06
Earnings volatility	0.01	-0.14	-0.20	-0.25	-0.12	-0.52	-0.04	1.00	0.36	0.23
Loss	0.06	-0.26	-0.20	-0.38	0.12	-0.62	-0.20	0.36	1.00	0.18
Class action litigation risk	-0.15	0.00	0.01	0.07	-0.14	-0.15	-0.06	0.23	0.18	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 Electronic Filing of Form D on Management Forecast Frequency**

	(1)	(2)
Treatment Effect	-0.0797*** (5.79)	-0.1176*** (9.48)
Institutional ownership		0.7943*** (31.60)
Firm size		0.0952*** (20.38)
Book-to-market		-0.0401*** (4.37)
ROA		0.1234*** (5.39)
Stock return		-0.0452*** (3.78)
Earnings volatility		0.0810*** (4.08)
Loss		-0.2153*** (14.10)
Class action litigation risk		-0.0274 (1.23)
N	18,045	18,045
R ²	0.0019	0.2544

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