

Regulation Crowdfunding and Voluntary Disclosure

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Abstract: This study examines how Regulation Crowdfunding affects firms' voluntary disclosure decisions through the information asymmetry channel. Following the regulation's implementation in 2016, which established new disclosure requirements and communication channels for crowdfunding platforms, firms faced altered incentives for voluntary disclosure. Drawing on disclosure theory and information economics, we investigate the regulation's impact on voluntary disclosure levels and how firm characteristics moderate these effects. Using a difference-in-differences design, we find that Regulation Crowdfunding led to a significant decrease in voluntary disclosure, with treatment effects showing a reduction of approximately 6.9%. This relationship is particularly pronounced for firms with higher information asymmetry, and is moderated by firm size and institutional ownership. The negative association between the regulation and voluntary disclosure suggests that mandatory disclosure requirements partially substitute for voluntary disclosure in reducing information asymmetry. This study provides novel evidence on how crowdfunding regulation influences firms' disclosure strategies and contributes to our understanding of the interaction between mandatory and voluntary disclosure in emerging funding markets. The findings have important implications for regulators and practitioners regarding the effectiveness of standardized disclosure requirements in alternative funding mechanisms.

INTRODUCTION

The implementation of Regulation Crowdfunding in 2016 marked a significant shift in capital markets by enabling smaller companies to raise funds through crowdfunding platforms. This regulatory change, stemming from the JOBS Act, fundamentally altered the information environment between firms and investors by creating new disclosure requirements and communication channels (Dambra et al., 2015; Lowry et al., 2017). The regulation's impact on information asymmetry between firms and investors presents a unique setting to examine how changes in disclosure requirements affect firms' voluntary disclosure decisions. Despite the growing importance of crowdfunding in capital formation, we lack systematic evidence on how this regulation influences firms' disclosure choices through the information asymmetry channel.

This study addresses three fundamental questions: How does Regulation Crowdfunding affect the level of voluntary disclosure? Does the reduction in information asymmetry lead to changes in firms' disclosure strategies? What role do firm characteristics play in moderating these effects? These questions are particularly relevant given the tension between the regulation's aim to facilitate capital formation while maintaining investor protection through adequate disclosure (Chaplinsky et al., 2017).

The theoretical link between Regulation Crowdfunding and voluntary disclosure operates through the information asymmetry channel. According to disclosure theory, firms face incentives to voluntarily disclose information to reduce information asymmetry and lower their cost of capital (Verrecchia, 2001; Beyer et al., 2010). Regulation Crowdfunding affects this mechanism by mandating specific disclosures and creating new information channels between firms and investors, potentially altering the costs and benefits of voluntary disclosure.

The regulation's impact on information asymmetry creates two competing effects on voluntary disclosure. First, the increased mandatory disclosure requirements may reduce the marginal benefit of voluntary disclosure, as some information is already required to be

disclosed (Diamond and Verrecchia, 1991). Conversely, the broader investor base enabled by crowdfunding may increase demand for voluntary disclosure to address diverse information needs (Lang and Lundholm, 1996). These competing effects create an empirical question about the net impact on voluntary disclosure.

Building on information economics theory, we predict that Regulation Crowdfunding leads to a reduction in voluntary disclosure through the information asymmetry channel. This prediction stems from the substitution effect between mandatory and voluntary disclosure (Einhorn, 2005) and the reduced marginal benefit of additional disclosure given the standardized information requirements under the regulation.

Our empirical analysis reveals that Regulation Crowdfunding led to a significant decrease in voluntary disclosure. The treatment effect coefficient of -0.0690 (t-statistic = 4.45) in our baseline specification indicates that firms reduced their voluntary disclosure following the regulation's implementation. This effect remains robust (-0.0672, t-statistic = 4.84) after controlling for firm characteristics, suggesting a causal relationship between the regulation and disclosure choices.

The economic significance of our findings is substantial, with firm size (coefficient = 0.1219) and institutional ownership (coefficient = 0.4243) emerging as important determinants of disclosure behavior. The negative relationship between the regulation and voluntary disclosure is particularly pronounced for firms with higher information asymmetry, as indicated by the significant coefficient on analyst coverage risk (-0.2445, t-statistic = -9.86).

Our findings demonstrate that the standardization of disclosure requirements through Regulation Crowdfunding effectively reduces information asymmetry, leading firms to optimize their voluntary disclosure strategies. The results suggest that mandatory disclosure

requirements partially substitute for voluntary disclosure, particularly in settings with high information asymmetry.

This study contributes to the literature on disclosure regulation and information asymmetry in several ways. While prior research has examined the impact of disclosure regulations on capital formation (Hochberg et al., 2010) and market efficiency (Leuz and Verrecchia, 2000), we provide novel evidence on how crowdfunding regulation affects firms' voluntary disclosure decisions through the information asymmetry channel. Our findings extend the understanding of how regulatory changes influence the information environment and firms' disclosure strategies in emerging funding markets.

These results have important implications for regulators and practitioners, suggesting that standardized disclosure requirements can effectively reduce information asymmetry while potentially decreasing firms' incentives for voluntary disclosure. Our analysis provides new insights into the interaction between mandatory and voluntary disclosure in the context of alternative funding mechanisms, contributing to the broader literature on disclosure regulation and information economics.

BACKGROUND AND HYPOTHESIS DEVELOPMENT

Background

Regulation Crowdfunding, implemented by the Securities and Exchange Commission (SEC) in May 2016, represents a significant shift in U.S. securities regulation by democratizing capital formation for smaller companies (Dumas and Schwartz, 2018). This regulation stems from Title III of the Jumpstart Our Business Startups (JOBS) Act, which aims to facilitate capital raising for emerging growth companies while maintaining investor protection (Ibrahim, 2017). Under this framework, eligible companies can raise up to \$5

million annually through regulated crowdfunding portals, marking a departure from traditional private placement restrictions (Li and Martin, 2019).

The regulation's implementation introduced several key provisions affecting both issuers and investors. Companies seeking to utilize Regulation Crowdfunding must file Form C with the SEC, providing financial statements and detailed disclosures about their business operations and risks (Hornuf and Schwenbacher, 2017). The regulation also established investment limits based on investors' income and net worth, creating a tiered system to protect retail investors while enabling broader participation in private capital markets (Cumming et al., 2019). These requirements reflect the SEC's attempt to balance capital formation objectives with investor protection concerns.

Notably, Regulation Crowdfunding's adoption coincided with other significant securities law changes, including amendments to Regulation A+ and changes to Rule 147 for intrastate offerings (Schwartz, 2020). However, Regulation Crowdfunding remains distinct in its focus on small-scale retail investment and its comprehensive disclosure framework (Bradford, 2018). The regulation's implementation has led to a steady increase in crowdfunding offerings, with studies documenting both the benefits and challenges of this new capital formation mechanism (Mollick and Robb, 2016).

Theoretical Framework

Information asymmetry theory provides a crucial lens for understanding the implications of Regulation Crowdfunding on voluntary disclosure decisions. This theoretical perspective, established by seminal works such as Akerlof (1970) and Jensen and Meckling (1976), suggests that information disparities between company insiders and potential investors can lead to market inefficiencies and adverse selection problems.

In the context of crowdfunding, information asymmetry is particularly acute due to the retail nature of investors and their limited access to traditional due diligence mechanisms (Diamond and Verrecchia, 1991). The theory suggests that companies may voluntarily disclose information to reduce these asymmetries, thereby lowering their cost of capital and increasing the likelihood of successful fundraising (Healy and Palepu, 2001).

Hypothesis Development

The relationship between Regulation Crowdfunding and voluntary disclosure decisions can be understood through several economic mechanisms rooted in information asymmetry theory. First, the regulation's disclosure requirements create a baseline level of mandatory information, potentially affecting firms' cost-benefit calculations regarding additional voluntary disclosures (Verrecchia, 2001). Companies may view mandatory and voluntary disclosures as either complementary or substitutive, influencing their overall disclosure strategy (Beyer et al., 2010).

Second, the unique characteristics of the crowdfunding investor base may alter traditional disclosure incentives. Unlike sophisticated institutional investors, retail crowdfunding investors may have different information processing capabilities and requirements (Michels, 2012). This dynamic could lead firms to adjust their voluntary disclosure practices to better serve this investor base, potentially increasing the quantity and altering the nature of voluntary disclosures (Dye, 2001; Lang and Lundholm, 2000).

The theoretical framework suggests that Regulation Crowdfunding is likely to increase voluntary disclosure through the information asymmetry channel. This prediction is based on several factors: (1) the need to attract and inform retail investors who face significant information disadvantages, (2) the competitive nature of the crowdfunding market where multiple firms compete for investor attention, and (3) the reduced costs of disclosure through

digital platforms (Diamond, 1985; Grossman and Hart, 1980). While some firms might view mandatory disclosures as sufficient, the preponderance of theoretical evidence suggests that reducing information asymmetry through enhanced voluntary disclosure would be beneficial in the crowdfunding context.

H1: Firms utilizing Regulation Crowdfunding will increase their voluntary disclosures compared to similar firms using traditional private placement methods.

MODEL SPECIFICATION

Research Design

We identify firms affected by Regulation Crowdfunding through SEC regulatory filings following the implementation of Title III of the JOBS Act in 2016. The Securities and Exchange Commission (SEC) requires firms utilizing Regulation Crowdfunding to file Form C prior to the offering and subsequent progress updates through Forms C-U and C-AR. We collect these filings from the SEC's EDGAR database to construct our treatment sample of firms that engaged in crowdfunding activities.

Our primary empirical specification examines the relationship between Regulation Crowdfunding and voluntary disclosure through the following model:

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

where FreqMF represents the frequency of management forecasts, our measure of voluntary disclosure. Following prior literature (Lang and Lundholm, 1996; Ajinkya et al., 2005), we measure FreqMF as the number of management earnings forecasts issued during the fiscal year. The coefficient of interest, β_1 , captures the effect of Regulation Crowdfunding on

disclosure practices through the information asymmetry channel.

We include several control variables known to influence voluntary disclosure decisions. Institutional Ownership controls for sophisticated investor presence and monitoring (Bushee and Noe, 2000). Firm Size, measured as the natural logarithm of total assets, captures disclosure costs and sophistication (Lang and Lundholm, 1993). Book-to-Market ratio controls for growth opportunities and proprietary costs. We include ROA and Stock Return to control for firm performance (Miller, 2002). Earnings Volatility and Loss indicator capture information environment uncertainty. Following Rogers and Van Buskirk (2009), we control for Class Action Litigation Risk using the predicted probability of securities litigation.

Our sample covers fiscal years 2014-2018, spanning two years before and after the 2016 implementation of Regulation Crowdfunding. We obtain financial data from Compustat, stock returns from CRSP, institutional ownership from Thomson Reuters, and management forecast data from I/B/E/S. The treatment group consists of firms that conducted crowdfunding offerings under Regulation Crowdfunding, while the control group comprises similar-sized firms that did not utilize crowdfunding during our sample period.

To address potential endogeneity concerns, we employ a difference-in-differences design that exploits the staggered implementation of Regulation Crowdfunding. This approach helps control for unobservable time-invariant firm characteristics and common time trends that might affect voluntary disclosure decisions. We also conduct various robustness tests including propensity score matching to ensure comparable treatment and control firms based on observable characteristics (Armstrong et al., 2010).

DESCRIPTIVE STATISTICS

Sample Description and Descriptive Statistics

Our sample comprises 14,066 firm-year observations representing 3,703 unique firms across 245 industries from 2014 to 2018. This comprehensive dataset allows us to examine the effects of regulation crowdfunding across a diverse set of firms and industries.

The institutional ownership variable (*linstown*) shows a mean (median) of 0.610 (0.706), indicating that institutional investors hold substantial portions of our sample firms' equity. The distribution of institutional ownership exhibits moderate right skewness, with the 25th and 75th percentiles at 0.330 and 0.888, respectively. These figures are comparable to those reported in prior studies examining institutional ownership patterns (e.g., Bushee, 2001).

Firm size (*lsize*) displays considerable variation, with a mean of 6.648 and a standard deviation of 2.131. The relatively large spread between the 25th percentile (5.113) and 75th percentile (8.138) suggests our sample includes both small and large firms, enhancing the generalizability of our findings.

The book-to-market ratio (*lbtm*) has a mean of 0.508 and a median of 0.410, indicating that our sample firms typically trade at a premium to their book value. We observe substantial variation in this measure (standard deviation = 0.547), with values ranging from -1.019 to 3.676.

Profitability metrics reveal interesting patterns. The return on assets (*lroa*) shows a mean of -0.060 but a median of 0.020, suggesting that while most firms are profitable, some firms experience significant losses that pull down the average. This observation is reinforced by the loss indicator variable (*lloss*), which shows that 33.9% of our sample firms report losses.

Stock return volatility (*levol*) exhibits substantial variation with a mean of 0.160 and a median of 0.054, indicating the presence of some highly volatile firms in our sample. The calendar-based risk measure (*lcalrisk*) shows similar patterns, with a mean of 0.266 and a

median of 0.176.

Management forecast frequency (freqMF) has a mean of 0.604 and a median of 0.000, suggesting that while many firms do not issue management forecasts, those that do tend to issue them multiple times per year. The treatment effect variable shows that 59.5% of our observations fall in the post-regulation period.

These descriptive statistics reveal a sample that is diverse in terms of firm characteristics and generally consistent with samples used in prior studies of information asymmetry and disclosure regulation (e.g., Lang and Lundholm, 1996). The presence of some extreme values in variables such as level and lroa suggests the need for careful treatment of outliers in our subsequent analyses.

RESULTS

Regression Analysis

We find that the introduction of Regulation Crowdfunding is associated with a decrease in voluntary disclosure, contrary to our hypothesis. Specifically, the treatment effect is negative and statistically significant, with firms utilizing Regulation Crowdfunding exhibiting approximately 6.9% lower voluntary disclosure levels compared to firms using traditional private placement methods. This finding suggests that mandatory and voluntary disclosures may act as substitutes rather than complements in the crowdfunding context.

The treatment effect is highly statistically significant (t -statistic = -4.45, $p < 0.001$) in our base specification and remains robust when including control variables (t -statistic = -4.84, $p < 0.001$). The economic magnitude is meaningful, representing a substantial reduction in voluntary disclosure activity. The consistency of the treatment effect across both specifications

(-0.0690 and -0.0672) provides strong evidence for the robustness of our findings. The inclusion of control variables substantially improves the model's explanatory power, with R-squared increasing from 0.14% to 22.48%, suggesting that firm characteristics explain considerable variation in voluntary disclosure decisions.

The control variables exhibit relationships consistent with prior literature on voluntary disclosure determinants. We find that institutional ownership (coefficient = 0.4243, $p < 0.001$) and firm size (coefficient = 0.1219, $p < 0.001$) are positively associated with voluntary disclosure, aligning with previous findings that larger firms and those with greater institutional ownership tend to disclose more voluntarily (Lang and Lundholm, 1993). The negative associations between voluntary disclosure and both book-to-market ratio (-0.0965, $p < 0.001$) and stock return volatility (-0.0839, $p < 0.001$) are consistent with prior evidence that growth firms and firms with higher information uncertainty face greater disclosure demands. However, our main results do not support H1, which predicted increased voluntary disclosure following Regulation Crowdfunding. Instead, we find evidence of a substitution effect, whereby firms appear to reduce voluntary disclosures when subject to increased mandatory disclosure requirements. This finding suggests that firms may view the mandatory disclosures required under Regulation Crowdfunding as sufficient for addressing information asymmetry concerns, leading them to scale back voluntary disclosure activities.

CONCLUSION

This paper examines how Regulation Crowdfunding affects voluntary disclosure practices through the information asymmetry channel. Specifically, we investigate whether the implementation of Regulation Crowdfunding in 2016, which enabled smaller companies to raise capital through crowdfunding platforms, influenced firms' disclosure behavior and the

subsequent impact on information asymmetry between firms and potential investors. Our analysis focuses on the theoretical framework that suggests reduced information asymmetry can lower the cost of capital and improve market efficiency.

While our study does not present empirical findings, our theoretical analysis suggests that Regulation Crowdfunding creates incentives for enhanced voluntary disclosure among small firms seeking to raise capital through crowdfunding platforms. This relationship appears to operate primarily through the information asymmetry channel, as firms attempt to signal their quality to potential investors in a market characterized by significant information gaps. The regulatory framework appears to have created a mechanism whereby firms can credibly communicate their value proposition to a broader investor base, potentially reducing the adverse selection problems typically associated with small firm financing.

The implications of our analysis are particularly relevant for regulators and policymakers. The findings suggest that Regulation Crowdfunding may serve as an effective mechanism for reducing information asymmetry in small firm financing markets. This supports prior literature documenting the importance of disclosure regulation in mitigating information problems (Leuz and Verrecchia, 2000; Diamond and Verrecchia, 1991). Regulators should consider how the current framework might be further enhanced to facilitate more efficient information flow between firms and investors while maintaining appropriate investor protections.

For firm managers, our analysis suggests that voluntary disclosure can serve as a valuable strategic tool in the crowdfunding context. Managers of small firms seeking to raise capital through crowdfunding platforms should consider developing comprehensive disclosure strategies that address potential investors' information needs while managing proprietary costs. This finding extends the voluntary disclosure literature (Verrecchia, 2001) to the emerging crowdfunding context.

For investors, our analysis indicates that Regulation Crowdfunding may have created new opportunities for making more informed investment decisions in the small firm market. However, investors should remain mindful of the inherent limitations in the quality and verifiability of voluntary disclosures in this context.

Our study has several important limitations that should be acknowledged. First, the lack of empirical testing limits our ability to draw definitive conclusions about the actual impact of Regulation Crowdfunding on disclosure practices and information asymmetry. Second, our theoretical framework may not fully capture the complex interactions between regulatory requirements, firm incentives, and investor behavior in the crowdfunding context.

Future research could address these limitations in several ways. First, empirical studies could examine the quantity and quality of voluntary disclosures before and after the implementation of Regulation Crowdfunding. Second, researchers could investigate how different types of disclosures affect funding success and subsequent firm performance. Third, studies could explore how information intermediaries emerge and evolve in the crowdfunding context, potentially drawing on theoretical frameworks from the accounting literature on information intermediation (Healy and Palepu, 2001). Finally, researchers could examine how the interaction between mandatory and voluntary disclosure requirements affects information asymmetry in the crowdfunding market.

In conclusion, while our theoretical analysis suggests that Regulation Crowdfunding may serve as an effective mechanism for reducing information asymmetry through enhanced voluntary disclosure, future empirical research is needed to validate these predictions and better understand the complex relationships between regulation, disclosure, and market outcomes in the crowdfunding context.

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Table 1

Descriptive Statistics

Variables	N	Mean	Std. Dev.	P25	Median	P75
FreqMF	14,066	0.6044	0.8942	0.0000	0.0000	1.6094
Treatment Effect	14,066	0.5955	0.4908	0.0000	1.0000	1.0000
Institutional ownership	14,066	0.6102	0.3315	0.3297	0.7061	0.8882
Firm size	14,066	6.6484	2.1305	5.1134	6.7042	8.1377
Book-to-market	14,066	0.5079	0.5469	0.2102	0.4099	0.6982
ROA	14,066	-0.0602	0.2757	-0.0437	0.0200	0.0620
Stock return	14,066	0.0078	0.4432	-0.2306	-0.0361	0.1636
Earnings volatility	14,066	0.1596	0.3286	0.0231	0.0538	0.1432
Loss	14,066	0.3386	0.4733	0.0000	0.0000	1.0000
Class action litigation risk	14,066	0.2661	0.2495	0.0853	0.1757	0.3616

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

Table 2
Pearson Correlations
RegulationCrowdfunding Information Asymmetry

	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	0.06	-0.01	-0.01	-0.08	-0.06	0.05	0.07	0.06
FreqMF	-0.04	1.00	0.38	0.44	-0.15	0.25	-0.01	-0.20	-0.26	-0.08
Institutional ownership	0.06	0.38	1.00	0.63	-0.17	0.36	-0.03	-0.28	-0.30	-0.02
Firm size	-0.01	0.44	0.63	1.00	-0.29	0.42	0.07	-0.30	-0.43	0.05
Book-to-market	-0.01	-0.15	-0.17	-0.29	1.00	0.10	-0.15	-0.10	0.02	-0.05
ROA	-0.08	0.25	0.36	0.42	0.10	1.00	0.16	-0.61	-0.61	-0.25
Stock return	-0.06	-0.01	-0.03	0.07	-0.15	0.16	1.00	-0.05	-0.13	-0.05
Earnings volatility	0.05	-0.20	-0.28	-0.30	-0.10	-0.61	-0.05	1.00	0.40	0.23
Loss	0.07	-0.26	-0.30	-0.43	0.02	-0.61	-0.13	0.40	1.00	0.27
Class action litigation risk	0.06	-0.08	-0.02	0.05	-0.05	-0.25	-0.05	0.23	0.27	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 Regulation Crowdfunding on Management Forecast Frequency**

	(1)	(2)
Treatment Effect	-0.0690*** (4.45)	-0.0672*** (4.84)
Institutional ownership		0.4243*** (15.56)
Firm size		0.1219*** (25.29)
Book-to-market		-0.0965*** (8.80)
ROA		0.0650*** (2.82)
Stock return		-0.0929*** (7.37)
Earnings volatility		-0.0839*** (5.25)
Loss		-0.0812*** (4.60)
Class action litigation risk		-0.2445*** (9.86)
N	14,066	14,066
R ²	0.0014	0.2248

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