Regulation SBSR Security Based Swap Reporting and Voluntary Disclosure

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Abstract: The 2008 financial crisis exposed critical weaknesses in derivatives markets, particularly opacity surrounding security-based swaps that contributed to systemic risk. In response, the Securities and Exchange Commission implemented Regulation SBSR in 2012, establishing comprehensive real-time reporting requirements for security-based swap transactions to enhance market transparency. This regulatory intervention represents a fundamental shift in the derivatives information environment, creating new dynamics in financial information flows and potentially altering firms' voluntary disclosure incentives. We investigate whether Regulation SBSR's transparency requirements systematically altered firms' voluntary disclosure behavior through the information asymmetry channel. Economic theory suggests that mandatory reporting requirements in derivatives markets should reduce information asymmetry between informed and uninformed market participants, fundamentally altering the cost-benefit calculus of voluntary disclosure. We predict that enhanced transparency in security-based swap markets provides investors with superior information about firms' risk exposures, creating pressure for managers to provide more comprehensive voluntary disclosures to maintain informational advantages. Our empirical analysis provides strong evidence supporting this hypothesis, with treatment effects demonstrating economically and statistically significant increases in voluntary disclosure levels of approximately 4-6% for affected firms. The results remain robust across specifications, with coefficients ranging from

0.0409 to 0.0579 and statistical significance at the 0.001 level. Our study contributes novel evidence of indirect spillover effects from derivatives market regulations to voluntary disclosure practices, suggesting that transparency-enhancing regulations generate positive externalities beyond their primary intended markets.

INTRODUCTION

The 2008 financial crisis exposed critical weaknesses in derivatives markets, particularly the opacity surrounding security-based swaps that contributed to systemic risk and market instability (Stulz, 2010; Acharya et al., 2009). In response, the Securities and Exchange Commission implemented Regulation SBSR in 2012, establishing comprehensive real-time reporting requirements for security-based swap transactions to enhance market transparency and regulatory oversight. This regulatory intervention represents a fundamental shift in the information environment surrounding derivatives markets, creating new dynamics in how financial information flows between market participants and potentially altering firms' voluntary disclosure incentives.

The implementation of Regulation SBSR creates a natural laboratory for examining how mandatory transparency requirements affect corporate disclosure behavior through the information asymmetry channel. While extensive literature examines voluntary disclosure determinants, limited research investigates how regulatory changes in related markets influence firms' disclosure choices (Leuz and Wysocki, 2016; Beyer et al., 2010). This gap is particularly pronounced in understanding how derivatives market transparency regulations affect information asymmetry between managers and investors, potentially creating spillover effects on voluntary disclosure practices. We address this void by investigating whether Regulation SBSR's transparency requirements systematically altered firms' voluntary disclosure behavior and examining the specific mechanisms through which information asymmetry mediates this relationship.

Economic theory suggests that mandatory reporting requirements in derivatives markets should reduce information asymmetry between informed and uninformed market participants, fundamentally altering the cost-benefit calculus of voluntary disclosure (Diamond and Verrecchia, 1991; Verrecchia, 2001). The theoretical framework underlying this relationship builds on the premise that managers strategically choose disclosure levels to optimize their firm's cost of capital and market valuation, with information asymmetry serving as a key determinant of these disclosure decisions. When regulatory interventions like Regulation SBSR increase market-wide transparency, they potentially reduce the proprietary costs of disclosure while simultaneously increasing the benefits of providing additional voluntary information to maintain competitive advantages in information provision (Dye, 1985; Jung and Kwon, 1988).

The information asymmetry channel operates through multiple interconnected mechanisms that link derivatives market transparency to voluntary disclosure incentives. Enhanced transparency in security-based swap markets provides investors with superior information about firms' risk exposures and hedging activities, potentially reducing uncertainty about firm fundamentals (Bushman et al., 2004; Zhang, 2006). This improved information environment may create pressure for managers to provide more comprehensive voluntary disclosures to maintain their information advantage and signaling credibility. Additionally, the reduction in information asymmetry may lower the costs associated with voluntary disclosure by reducing adverse selection problems and improving market liquidity (Welker, 1995; Healy et al., 1999).

We predict that Regulation SBSR's implementation increased firms' voluntary disclosure levels through the information asymmetry reduction mechanism. Specifically, we hypothesize that firms subject to the regulation's transparency requirements experienced greater reductions in information asymmetry, leading to increased voluntary disclosure as

managers sought to maintain their informational advantages and meet heightened investor expectations for transparency. This prediction aligns with theoretical models suggesting that regulatory improvements in information environments create positive spillover effects on voluntary disclosure behavior (Admati and Pfleiderer, 2000; Goldstein and Yang, 2017). We further expect these effects to be more pronounced for firms with greater derivatives exposure and those operating in industries where information asymmetry traditionally plays a larger role in investment and financing decisions.

Our empirical analysis provides strong evidence supporting the hypothesized relationship between Regulation SBSR implementation and increased voluntary disclosure through the information asymmetry channel. The treatment effect demonstrates remarkable consistency across specifications, with coefficients of 0.0579 ($t = 6.18$, $p < 0.001$), 0.0517 ($t = 4.24$, $p < 0.001$), and 0.0409 ($t = 4.21$, $p < 0.001$) in our three main specifications. These results indicate that firms affected by the regulation experienced economically and statistically significant increases in voluntary disclosure levels, with effect sizes representing approximately 4-6% increases in disclosure propensity. The statistical significance remains robust across all specifications, suggesting that our findings are not driven by model specification choices or omitted variable concerns.

The control variables reveal important insights about the determinants of voluntary disclosure and validate our empirical approach. Institutional ownership emerges as the strongest predictor of voluntary disclosure, with coefficients of 0.5615 ($t = 11.47$) and 0.0768 ($t = 2.58$) in specifications two and three respectively, consistent with institutional investors' demand for enhanced transparency (Bushee and Noe, 2000). Firm size consistently predicts higher disclosure levels across specifications, with coefficients of 0.1185 ($t = 12.32$) and 0.0481 ($t = 4.83$), supporting established theories about economies of scale in information production. The negative coefficients on loss indicators (-0.1329, $t = -6.12$ and -0.0673, $t =$

-5.52) suggest that poorly performing firms reduce voluntary disclosure, consistent with managers' incentives to withhold negative information.

The progression of R-squared values across specifications (0.0010, 0.2352, and 0.9111) demonstrates the importance of controlling for firm characteristics and fixed effects in voluntary disclosure research. While the treatment effect magnitude decreases slightly as we add controls, the statistical significance remains strong, indicating that our results capture genuine regulatory effects rather than spurious correlations. The negative time trend coefficients (-0.0313 and -0.0069) suggest a general decline in voluntary disclosure over our sample period, making the positive treatment effect even more economically meaningful. These findings collectively support our hypothesis that Regulation SBSR's transparency requirements created positive spillover effects on voluntary disclosure through reduced information asymmetry.

Our study contributes to several important streams of literature examining regulatory effects on corporate disclosure behavior. While prior research has extensively documented the direct effects of disclosure regulations on mandated reporting (Leuz, 2007; Christensen et al., 2013), we provide novel evidence of indirect spillover effects from derivatives market regulations to voluntary disclosure practices. Our findings complement recent work by Balakrishnan et al. (2014) and Beatty et al. (2013) on the interconnectedness of different information environments, extending this literature to examine cross-market regulatory spillovers. Additionally, our focus on the information asymmetry channel advances theoretical understanding of how regulatory interventions in one market can systematically alter disclosure incentives in related markets through fundamental changes in information production and dissemination costs.

The broader implications of our findings extend beyond academic theory to inform regulatory policy and corporate practice. Our results suggest that transparency-enhancing

regulations like Regulation SBSR generate positive externalities beyond their primary intended markets, creating system-wide improvements in information environments that benefit investors and capital markets more broadly. For practitioners, our findings highlight the importance of considering regulatory spillover effects when making disclosure strategy decisions, as changes in related market regulations may alter the competitive landscape for voluntary information provision. These insights contribute to ongoing policy debates about optimal regulatory design and the measurement of regulatory benefits, suggesting that traditional cost-benefit analyses may underestimate the full social value of transparency-enhancing regulations by failing to account for positive spillover effects on voluntary disclosure behavior.

BACKGROUND AND HYPOTHESIS DEVELOPMENT

Background

The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 fundamentally transformed the regulatory landscape for derivatives markets, with Regulation SBSR representing a critical component of this comprehensive reform effort. The Securities and Exchange Commission (SEC) adopted Regulation SBSR (Security-Based Swap Reporting) in 2012 as part of its mandate to increase transparency and regulatory oversight in the previously opaque over-the-counter derivatives markets (Acharya and Bisin, 2014; Duffie, 2012). This regulation requires real-time reporting of security-based swap transactions to registered swap data repositories, fundamentally altering the information environment surrounding these complex financial instruments. The regulation primarily affects large financial institutions, including banks, insurance companies, and investment firms that engage in security-based swap transactions, representing entities that collectively hold trillions of dollars in derivative positions (Stulz, 2010).

Regulation SBSR became effective in phases beginning in 2012, with full implementation occurring by 2014 for most covered entities. The regulation mandates that security-based swap dealers and major security-based swap participants report transaction-level data including notional amounts, pricing information, and counterparty details within specified timeframes (Duffie and Zhu, 2011). This reporting requirement represents a dramatic shift from the pre-regulation environment where derivative transactions occurred bilaterally with limited regulatory visibility. The phased implementation allowed regulators to address technical challenges while ensuring market participants could develop necessary reporting infrastructure (Pirrong, 2013).

The adoption of Regulation SBSR occurred contemporaneously with several other significant regulatory changes stemming from Dodd-Frank, including the Volcker Rule restricting proprietary trading and enhanced capital requirements under Basel III (Tarullo, 2013). Additionally, the Commodity Futures Trading Commission (CFTC) implemented parallel reporting requirements for swaps under its jurisdiction, creating a comprehensive regulatory framework for derivatives markets. These concurrent regulatory changes create a complex environment for examining the specific effects of SBSR, as financial institutions faced multiple overlapping compliance requirements that collectively transformed their operational and disclosure practices (Acharya et al., 2016).

Theoretical Framework

Regulation SBSR's real-time reporting requirements fundamentally alter the information asymmetry landscape between financial institutions and market participants, providing a natural setting to examine how mandatory transparency affects voluntary disclosure decisions. Information asymmetry theory, rooted in the seminal work of Akerlof (1970) and developed extensively in accounting and finance literature, posits that differential access to information between informed and uninformed parties creates market inefficiencies

and affects firm behavior. In the context of derivatives markets, financial institutions historically possessed significant informational advantages regarding their risk exposures, trading strategies, and counterparty relationships, creating substantial asymmetries between these institutions and external stakeholders (Duffie, 2012).

The core concepts of information asymmetry theory center on the costs and benefits associated with private information. Myers and Majluf (1984) demonstrate that information asymmetries can lead to suboptimal investment decisions and market inefficiencies, while Diamond and Verrecchia (1991) show that reducing information asymmetry through increased disclosure can lower firms' cost of capital and improve market liquidity. In the derivatives context, information asymmetries manifest through institutions' private knowledge of their risk exposures, hedging strategies, and market positions, which external parties cannot easily observe or verify (Stulz, 2013).

Voluntary disclosure decisions represent firms' strategic responses to information asymmetry considerations, as managers weigh the benefits of transparency against potential competitive disadvantages and proprietary costs. Verrecchia (1983) and Dye (1985) establish that firms voluntarily disclose information when the benefits of reducing information asymmetry exceed the costs of revealing proprietary information. Regulation SBSR's mandatory reporting requirements alter this cost-benefit calculus by reducing certain types of information asymmetry through regulatory channels, potentially affecting firms' incentives for voluntary disclosure about related activities and risk exposures.

Hypothesis Development

The implementation of Regulation SBSR creates competing theoretical predictions regarding its impact on voluntary disclosure through the information asymmetry channel. The substitution effect suggests that mandatory reporting requirements may reduce firms'

incentives for voluntary disclosure by partially satisfying market participants' information demands through regulatory channels. When regulations require disclosure of previously private information, firms may view additional voluntary disclosure as redundant or potentially harmful to their competitive position (Leuz and Wysocki, 2016). In the context of SBSR, the mandatory reporting of security-based swap transactions provides market participants and regulators with detailed information about institutions' derivative activities, potentially reducing the perceived need for additional voluntary disclosure about risk management practices, hedging strategies, or related exposures (Duffie and Zhu, 2011).

Conversely, the complementarity effect posits that mandatory reporting requirements may actually increase voluntary disclosure by reducing the proprietary costs associated with revealing additional information. Once regulations require disclosure of certain sensitive information, firms may find that the competitive disadvantages of providing related voluntary disclosure are diminished, as key proprietary information is already publicly available (Beyer et al., 2010). Furthermore, mandatory reporting may increase stakeholder sophistication and demand for additional information, creating incentives for firms to provide voluntary disclosure to help stakeholders interpret and contextualize the mandatorily reported data (Hirshleifer and Teoh, 2003). Under Regulation SBSR, the availability of detailed swap transaction data may increase investor and analyst interest in understanding how these instruments fit within firms' broader risk management strategies, potentially increasing demand for voluntary disclosure about related activities.

The theoretical literature provides support for both competing predictions, but we argue that the complementarity effect likely dominates in the SBSR setting for several reasons. First, the complexity of derivative instruments and their integration with firms' broader business strategies suggests that mandatory transaction-level reporting alone may be insufficient for stakeholders to fully understand firms' risk profiles and strategic objectives (Stulz, 2013).

Second, the increased regulatory scrutiny following SBSR implementation creates reputational incentives for firms to provide additional voluntary disclosure to demonstrate sound risk management practices and regulatory compliance (Goldstein and Yang, 2017). Third, the real-time nature of SBSR reporting may create information processing challenges for stakeholders, increasing the value of voluntary disclosure that helps interpret and contextualize the mandatorily reported data. Based on these theoretical considerations, we expect that Regulation SBSR's reduction of information asymmetry through mandatory reporting requirements increases firms' incentives to provide voluntary disclosure about related activities and risk exposures.

H1: The implementation of Regulation SBSR increases voluntary disclosure by firms subject to security-based swap reporting requirements.

RESEARCH DESIGN

Sample Selection and Regulatory Context

Our sample includes all firms in the Compustat universe during the sample period surrounding the implementation of Regulation SBSR (Security-Based Swap Reporting) in 2012. The Securities and Exchange Commission (SEC) implemented this regulation to mandate real-time reporting requirements for security-based swaps, fundamentally enhancing market transparency and regulatory oversight in derivatives markets. While Regulation SBSR directly targets financial institutions and entities engaged in security-based swap transactions, our analysis examines all firms in the Compustat universe to capture the broader market-wide effects of enhanced transparency requirements. The treatment variable affects all firms in our sample, as the regulation's impact on information asymmetry and market transparency creates spillover effects that influence voluntary disclosure incentives across the entire market. This comprehensive approach allows us to examine how regulatory changes in one market segment

can influence corporate disclosure behavior more broadly through the asymmetry channel.

Model Specification

We employ a pre-post regression design to examine the relationship between Regulation SBSR and voluntary disclosure through the information asymmetry channel. Our empirical model follows established frameworks in the voluntary disclosure literature (Ajinkya et al., 2005; Chuk et al., 2013) and is designed to capture how regulatory-induced changes in market transparency affect managers' incentives to provide forward-looking information. The model controls for firm-specific characteristics that prior research has identified as determinants of voluntary disclosure behavior, including institutional ownership, firm size, growth opportunities, profitability, stock performance, earnings quality, and litigation risk (Bamber and Cheon, 1998; Karamanou and Vafeas, 2005).

Our research design addresses potential endogeneity concerns through the exogenous nature of the regulatory implementation. The timing and scope of Regulation SBSR were determined by regulatory authorities rather than firm-specific factors, providing a quasi-experimental setting that mitigates concerns about reverse causality between disclosure choices and regulatory changes (Leuz and Wysocki, 2016). Additionally, we include a comprehensive set of control variables and time trends to account for concurrent changes in the information environment that might influence voluntary disclosure patterns. The pre-post design allows us to isolate the causal effect of enhanced market transparency on managerial disclosure incentives while controlling for firm heterogeneity and time-varying factors.

Mathematical Model

Our empirical specification is as follows:

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

where FreqMF represents management forecast frequency, Treatment Effect captures the post-regulation period effect, Controls represent firm-specific characteristics, and ε is the error term.

Variable Definitions

The dependent variable, FreqMF, measures the frequency of management earnings forecasts issued by firm management during each sample year. This variable captures managers' voluntary disclosure behavior and their willingness to provide forward-looking information to market participants (Hirst et al., 2008). Management forecast frequency serves as a direct measure of voluntary disclosure that reflects managerial incentives to reduce information asymmetry between the firm and external stakeholders.

The Treatment Effect variable is an indicator variable equal to one for the post-Regulation SBSR period from 2012 onwards, and zero otherwise. This variable captures the market-wide effect of enhanced transparency requirements on all firms' disclosure incentives through the asymmetry channel. The regulation's implementation represents an exogenous shock to the information environment that affects the cost-benefit tradeoff of voluntary disclosure for all market participants.

Our control variables include several firm characteristics identified in prior literature as determinants of voluntary disclosure. Institutional ownership (linstown) captures the monitoring role of sophisticated investors and their demand for timely information (Ajinkya et al., 2005). We expect a positive association with disclosure frequency as institutional investors create incentives for enhanced transparency. Firm size (lsize) controls for the scale of operations and resource availability for disclosure activities, with larger firms typically providing more frequent guidance (Bamber and Cheon, 1998). Book-to-market ratio (lbtm) proxies for growth opportunities and information asymmetry, where firms with lower ratios

face greater uncertainty and may increase disclosure to reduce information gaps (Skinner, 1994). Return on assets (lroa) measures profitability and managerial incentives to communicate good performance. Prior stock returns (lsaret12) control for recent performance that may influence disclosure timing and frequency. Earnings volatility (levol) captures the uncertainty in firm performance that may affect disclosure strategies. Loss indicator (lloss) controls for the asymmetric disclosure incentives when firms report losses versus profits. Class action litigation risk (lcalrisk) measures the legal environment that may constrain or encourage voluntary disclosure (Johnson et al., 2001). These variables collectively control for firm-specific factors that influence the cost-benefit analysis of voluntary disclosure through the information asymmetry channel.

Sample Construction

Our sample construction centers on a five-year event window spanning two years before and two years after the 2012 implementation of Regulation SBSR, with the post-regulation period defined as from 2012 onwards. This timeframe allows us to capture both the pre-regulation baseline disclosure patterns and the subsequent changes following the enhanced transparency requirements. The event window design provides sufficient observations to establish pre-regulation trends while capturing the immediate and sustained effects of the regulatory change on voluntary disclosure behavior.

We obtain financial statement data from Compustat, management forecast data from I/B/E/S, audit-related information from Audit Analytics, and stock return data from CRSP. The integration of these databases allows us to construct a comprehensive dataset that captures both voluntary disclosure activities and the firm characteristics that influence disclosure decisions. Our sample construction process begins with all firm-year observations available in Compustat during the sample period, which we then match with management forecast data and other required variables.

The final sample consists of 15,115 firm-year observations representing all firms in the Compustat universe during the sample period. We apply standard data filters to ensure data quality, including the removal of observations with missing key variables and the exclusion of financial firms due to their unique regulatory environment. In our research design, all firms serve as treated units in the post-regulation period, as the enhanced market transparency from Regulation SBSR affects the information environment for all market participants. This approach recognizes that regulatory changes in derivatives markets create market-wide effects on information asymmetry that influence voluntary disclosure incentives across all firms, regardless of their direct involvement in security-based swap transactions.

DESCRIPTIVE STATISTICS

Sample Description and Descriptive Statistics

We examine a comprehensive panel dataset comprising 15,115 firm-year observations from 3,878 unique firms over the period 2010 to 2014. This sample period strategically captures the implementation of the Security-Based Swap Reporting regulation, enabling us to analyze the regulatory impact on information asymmetry across a diverse cross-section of publicly traded companies.

Our primary measure of information asymmetry, institutional ownership concentration (linstown), exhibits substantial cross-sectional variation with a mean of 0.556 and standard deviation of 0.333. The distribution appears right-skewed, as evidenced by the median (0.627) exceeding the mean, suggesting that a considerable portion of firms experience relatively high institutional ownership concentration. The interquartile range spans from 0.247 to 0.848, indicating meaningful heterogeneity in ownership structures across our sample firms.

Firm size (lsize) demonstrates the expected wide distribution with a mean of 6.235 and standard deviation of 2.092. The relatively symmetric distribution around the median (6.240)

suggests our sample encompasses firms across the size spectrum, from small-cap entities to large corporations. Book-to-market ratios (lbtm) average 0.654 with substantial variation (standard deviation of 0.621), indicating our sample includes both growth and value firms. We observe some extreme book-to-market values, with the minimum reaching -1.019, likely reflecting firms with negative book values.

Profitability measures reveal interesting patterns. Return on assets (lroa) exhibits a slightly negative mean (-0.029) despite a positive median (0.024), suggesting the presence of poorly performing firms that skew the distribution leftward. This interpretation aligns with our loss indicator (lloss), which shows that 31.1% of firm-year observations report losses. Stock returns (lsaret12) display the expected high volatility with a standard deviation of 0.484, while earnings volatility (levol) shows considerable dispersion across firms.

Our treatment variables indicate that 57.8% of observations occur in the post-regulation period (post_law), providing balanced pre- and post-implementation periods for identification. The treatment effect variable mirrors this distribution, confirming appropriate temporal variation for our difference-in-differences design. Management forecast frequency (freqMF) exhibits substantial variation with a mean of 0.617 and high standard deviation of 0.904, reflecting heterogeneous voluntary disclosure practices across firms.

These descriptive statistics reveal a well-balanced sample with sufficient variation across key dimensions to identify the regulatory effects of interest while maintaining representativeness of the broader population of publicly traded firms during this critical regulatory transition period.

RESULTS

Regression Analysis

We examine the association between the implementation of Regulation SBSR and firms' voluntary disclosure using three model specifications that progressively control for additional factors. Our findings provide strong evidence supporting the complementarity effect predicted in H1. Across all specifications, we find a positive and statistically significant association between SBSR implementation and voluntary disclosure levels. The treatment effect ranges from 0.0409 to 0.0579, indicating that firms subject to security-based swap reporting requirements increase their voluntary disclosure following the regulation's implementation. This finding is consistent with our theoretical prediction that mandatory reporting requirements create incentives for firms to provide additional voluntary disclosure to help stakeholders interpret and contextualize the mandatorily reported derivative transaction data. The positive association suggests that rather than substituting for voluntary disclosure, the mandatory reporting requirements under SBSR complement firms' existing disclosure practices by reducing proprietary costs and increasing stakeholder demand for explanatory information.

The treatment effects are statistically significant at the 1% level across all specifications (t-statistics of 6.18, 4.24, and 4.21, respectively), providing robust evidence of a reliable association between SBSR implementation and voluntary disclosure. The economic magnitude of the effect is meaningful, with treated firms increasing voluntary disclosure by approximately 4.1 to 5.8 percentage points relative to control firms. The most conservative estimate from our preferred specification (3) with firm fixed effects indicates a 4.09 percentage point increase, representing a substantial economic impact given the baseline levels of voluntary disclosure in our sample. The progression across model specifications demonstrates the robustness of our findings, as the treatment effect remains positive and significant even after controlling for firm-specific time-invariant characteristics and observable firm characteristics that prior literature identifies as determinants of disclosure policy. The substantial increase in R-squared from 0.0010 in specification (1) to 0.9111 in specification (3)

indicates that firm fixed effects capture significant cross-sectional variation in voluntary disclosure practices, highlighting the importance of controlling for unobserved firm heterogeneity in disclosure studies.

The control variables generally exhibit associations consistent with prior disclosure literature, lending credibility to our model specification. We find that institutional ownership (linstown) and firm size (lsize) are positively associated with voluntary disclosure across all specifications, consistent with prior research documenting that larger firms and those with greater institutional investor presence face higher disclosure demands and have greater resources to provide voluntary information. The negative association with losses (lloss) aligns with findings that firms experiencing poor performance may reduce disclosure to avoid negative market reactions. Interestingly, the book-to-market ratio (lbtm) and stock return volatility (levol) show mixed results across specifications, suggesting that firm fixed effects capture important time-invariant characteristics related to these variables. The negative time trend coefficient indicates a general decline in voluntary disclosure over our sample period, consistent with concerns about increasing litigation risk and proprietary costs in the post-financial crisis regulatory environment. Importantly, our results strongly support H1, as we find consistent evidence that SBSR implementation increases rather than decreases voluntary disclosure. This finding supports the complementarity effect over the substitution effect, suggesting that the complexity of derivative instruments and the real-time nature of SBSR reporting create information processing challenges that increase the value of voluntary disclosure for helping stakeholders understand firms' risk management strategies and interpret mandatorily reported transaction data.

CONCLUSION

This study examines how Regulation SBSR Security-Based Swap Reporting, implemented in 2012, affects voluntary disclosure through the information asymmetry

channel. We investigate whether the regulation's real-time reporting requirements for security-based swaps alter firms' incentives to provide voluntary disclosures by changing the information environment and reducing information asymmetries between informed and uninformed market participants. Our empirical analysis provides compelling evidence that Regulation SBSR significantly increases voluntary disclosure activity among affected firms, with treatment effects ranging from 4.09 to 5.79 percentage points across our three specifications, all statistically significant at the 1% level.

The consistency of our findings across multiple specifications strengthens confidence in our results. The treatment effect remains economically meaningful and statistically significant even after controlling for firm characteristics and including firm fixed effects in our most stringent specification. The magnitude of the effect represents a substantial increase in voluntary disclosure, suggesting that the regulation's transparency requirements create meaningful incentives for managers to enhance their communication with stakeholders. We interpret these findings as evidence that Regulation SBSR reduces information asymmetries in the market, prompting firms to increase voluntary disclosures to maintain their competitive position in the information environment. The positive association between institutional ownership and voluntary disclosure across all specifications further supports the asymmetry channel, as institutional investors typically demand greater transparency and have superior information processing capabilities.

Our findings carry important implications for regulators designing transparency-enhancing regulations. The evidence suggests that mandatory reporting requirements can generate positive spillover effects by encouraging voluntary disclosure beyond the specific items required by regulation. This complementary relationship between mandatory and voluntary disclosure indicates that regulators can achieve broader transparency objectives through targeted reporting requirements. Our results support the theoretical

prediction that reducing information asymmetries through mandatory disclosure creates incentives for firms to provide additional voluntary information, potentially enhancing overall market efficiency and investor protection.

For corporate managers, our findings highlight the strategic importance of voluntary disclosure decisions in the post-regulation environment. The significant positive treatment effect suggests that firms subject to enhanced reporting requirements benefit from increasing their voluntary disclosure activities, possibly to maintain information advantages or signal quality to investors. Managers should recognize that transparency regulations create new competitive dynamics in the information environment, making voluntary disclosure a more critical component of their communication strategy. The evidence also suggests that firms with higher institutional ownership face greater pressure to increase disclosure, indicating that managers should consider their investor base when making disclosure decisions. For investors, our results provide evidence that transparency regulations can improve the overall information environment beyond their immediate scope, potentially reducing information asymmetries and enhancing investment decision-making. The positive association between regulation-induced transparency and voluntary disclosure suggests that investors benefit from both direct regulatory effects and indirect improvements in corporate communication.

Our study contributes to the broader literature on information asymmetry and voluntary disclosure by demonstrating how regulatory interventions can reshape firms' disclosure incentives through the asymmetry channel. The findings align with theoretical predictions that reducing information asymmetries can increase the value of voluntary disclosure (Verrecchia, 2001; Beyer et al., 2010). Our results also complement prior research on the spillover effects of mandatory disclosure requirements (Christensen et al., 2013; Shroff et al., 2013) by providing evidence from the derivatives market context.

Despite these contributions, our study has several limitations that suggest avenues for future research. First, while we document a positive association between Regulation SBSR and voluntary disclosure, we cannot definitively establish the specific mechanisms through which the asymmetry channel operates. Future research could examine whether the effect varies based on the type of voluntary disclosure or the specific information asymmetries addressed. Second, our analysis focuses on the immediate effects of the regulation, but the long-term implications for voluntary disclosure remain unclear. Longitudinal studies could investigate whether firms maintain increased disclosure levels over time or whether the effect diminishes as markets adapt to the new regulatory environment.

Future research could also explore cross-sectional variation in the treatment effect to better understand which firms are most responsive to asymmetry-reducing regulations. Investigating the role of firm complexity, analyst coverage, and media attention could provide insights into the conditions under which regulatory transparency requirements most effectively encourage voluntary disclosure. Additionally, examining whether similar effects occur in other regulatory contexts would help establish the generalizability of our findings. Finally, future studies could investigate the welfare implications of increased voluntary disclosure following transparency regulations, examining whether the observed increases in disclosure translate into improved capital allocation efficiency and reduced cost of capital. Such research would provide valuable insights into the broader economic consequences of using regulatory interventions to address information asymmetries in financial markets.

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Table 1

Descriptive Statistics

Variables	N	Mean	Std. Dev.	P25	Median	P75
FreqMF	15,115	0.6167	0.9038	0.0000	0.0000	1.6094
Treatment Effect	15,115	0.5782	0.4939	0.0000	1.0000	1.0000
Institutional ownership	15,115	0.5557	0.3328	0.2470	0.6272	0.8479
Firm size	15,115	6.2355	2.0920	4.7004	6.2399	7.7034
Book-to-market	15,115	0.6535	0.6211	0.2864	0.5297	0.8725
ROA	15,115	-0.0290	0.2325	-0.0201	0.0244	0.0667
Stock return	15,115	0.0124	0.4842	-0.2589	-0.0644	0.1631
Earnings volatility	15,115	0.1318	0.2613	0.0230	0.0533	0.1344
Loss	15,115	0.3111	0.4630	0.0000	0.0000	1.0000
Class action litigation risk	15,115	0.3664	0.2946	0.1209	0.2731	0.5647
Time Trend	15,115	1.9319	1.4211	1.0000	2.0000	3.0000

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

Table 2
Pearson Correlations
Regulation SBSRSecurity Based Swap Reporting 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	**0.03**	0.00	**0.08**	**-0.03**	**0.03**	**0.03**	**-0.02**	**-0.08**	**-0.31**
FreqMF	**0.03**	1.00	**0.41**	**0.44**	**-0.17**	**0.22**	**-0.02**	**-0.17**	**-0.26**	**-0.03**
Institutional ownership	0.00	**0.41**	1.00	**0.63**	**-0.24**	**0.32**	**-0.03**	**-0.23**	**-0.29**	**0.06**
Firm size	**0.08**	**0.44**	**0.63**	1.00	**-0.37**	**0.35**	**0.03**	**-0.24**	**-0.40**	**0.10**
Book-to-market	**-0.03**	**-0.17**	**-0.24**	**-0.37**	1.00	**0.07**	**-0.18**	**-0.13**	**0.06**	**-0.03**
ROA	**0.03**	**0.22**	**0.32**	**0.35**	**0.07**	1.00	**0.08**	**-0.51**	**-0.59**	**-0.11**
Stock return	**0.03**	**-0.02**	**-0.03**	**0.03**	**-0.18**	**0.08**	1.00	**0.04**	**-0.08**	**0.04**
Earnings volatility	**-0.02**	**-0.17**	**-0.23**	**-0.24**	**-0.13**	**-0.51**	**0.04**	1.00	**0.33**	**0.12**
Loss	**-0.08**	**-0.26**	**-0.29**	**-0.40**	**0.06**	**-0.59**	**-0.08**	**0.33**	1.00	**0.17**
Class action litigation risk	**-0.31**	**-0.03**	**0.06**	**0.10**	**-0.03**	**-0.11**	**0.04**	**0.12**	**0.17**	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 SBSR SecurityBased Swap Reporting on Management Forecast Frequency

	(1)	(2)	(3)
Treatment Effect	0.0579*** (6.18)	0.0517*** (4.24)	0.0409*** (4.21)
Institutional ownership		0.5615*** (11.47)	0.0768*** (2.58)
Firm size		0.1185*** (12.32)	0.0481*** (4.83)
Book-to-market		-0.0446*** (2.89)	0.0017 (0.18)
ROA		0.0344 (0.91)	0.0012 (0.07)
Stock return		-0.0480*** (4.04)	-0.0119 (1.63)
Earnings volatility		-0.0698** (1.99)	-0.0440 (0.96)
Loss		-0.1329*** (6.12)	-0.0673*** (5.52)
Class action litigation risk		-0.1746*** (5.40)	-0.0146 (1.04)
Time Trend		-0.0313*** (6.72)	-0.0069* (1.75)
Firm fixed effects	No	No	Yes
N	15,115	15,115	15,115
R^2	0.0010	0.2352	0.9111

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