Volcker Rule Proprietary Trading Restrictions and Voluntary Disclosure

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Abstract: The Volcker Rule's prohibition on proprietary trading represents a significant regulatory reform that fundamentally altered the risk profile and operational structure of banks following the 2008 financial crisis. While extensive research examines how these restrictions affect bank lending and market-making activities, the literature provides insufficient evidence on how proprietary trading prohibitions influence corporate transparency through litigation risk channels. This study addresses this gap by examining whether Volcker Rule implementation increases voluntary disclosure among affected banks through heightened litigation risk concerns. Building on litigation risk theory, we predict that the rule's complex compliance requirements and enhanced regulatory scrutiny create new avenues for potential litigation if disclosure practices are deemed inadequate, thereby increasing incentives for voluntary transparency. Using empirical analysis, we find that Volcker Rule implementation significantly increased voluntary disclosure among affected banks, with treatment effects ranging from 4.09 to 5.79 percentage points across specifications. The robustness of findings across multiple specifications with varying explanatory power demonstrates that results are not driven by model specification choices or omitted variable bias. This study contributes to literature by providing novel evidence on regulatory spillover effects in corporate disclosure, demonstrating how financial sector regulations can indirectly influence voluntary transparency through litigation risk channels and extending understanding of how complex regulations

influence corporate behavior beyond their intended scope.

INTRODUCTION

The Volcker Rule's prohibition on proprietary trading by banks represents one of the most significant regulatory reforms following the 2008 financial crisis, fundamentally altering the risk profile and operational structure of financial institutions. Implemented in 2014 as part of the Dodd-Frank Act, this regulation restricts banks from engaging in speculative trading activities using their own capital, thereby reducing systemic risk and potential conflicts of interest between banks and their clients (Duffie, 2012; Whitehead, 2011). The rule's impact extends beyond its intended financial stability objectives, creating ripple effects throughout corporate disclosure practices as banks adapt to new regulatory constraints and stakeholder expectations.

The implementation of proprietary trading restrictions fundamentally alters the litigation risk environment for affected financial institutions, creating new incentives for voluntary disclosure that have received limited empirical attention. While extensive research examines how regulatory changes affect bank lending and market-making activities (Bao et al., 2018; Bessembinder et al., 2018), the literature provides insufficient evidence on how these restrictions influence corporate transparency through litigation risk channels. This gap is particularly important given that proprietary trading prohibitions may increase regulatory scrutiny and stakeholder monitoring, potentially heightening legal exposure for inadequate disclosure. We address this void by examining whether Volcker Rule implementation increases voluntary disclosure among affected banks and whether this relationship operates through heightened litigation risk concerns.

The theoretical foundation for linking proprietary trading restrictions to enhanced voluntary disclosure rests on litigation risk theory, which posits that firms increase

transparency to mitigate potential legal exposure from information asymmetries (Skinner, 1994; Johnson et al., 2001). Under the Volcker Rule, banks face increased regulatory oversight and must demonstrate compliance with complex trading restrictions, creating new avenues for potential litigation if disclosure practices are deemed inadequate. This heightened scrutiny environment increases the expected costs of withholding material information, as regulators, shareholders, and other stakeholders possess greater incentives to challenge insufficient transparency (Francis et al., 1994; Field et al., 2005). The rule's complexity and the need to distinguish between prohibited proprietary trading and permitted market-making activities further amplify disclosure incentives, as banks seek to preemptively address potential compliance questions.

Enhanced litigation risk under the Volcker Rule creates particularly strong incentives for voluntary disclosure due to the rule's enforcement mechanisms and the high-stakes nature of banking regulation. Banks subject to the rule must maintain detailed compliance programs and face potential penalties for violations, increasing the probability that inadequate disclosure will be detected and challenged (Tarullo, 2014). The reputational consequences of Volcker Rule violations are severe, as they signal both regulatory non-compliance and potentially inadequate risk management systems, amplifying the litigation risk associated with incomplete disclosure (Stiroh, 2004). Additionally, the rule's focus on proprietary trading activities—which are inherently complex and difficult for outsiders to monitor—creates information asymmetries that heighten the legal risks of insufficient transparency.

Building on established theoretical frameworks linking regulatory oversight to disclosure incentives, we predict that Volcker Rule implementation increases voluntary disclosure among affected banks through the litigation risk channel (Healy and Palepu, 2001; Leuz and Wysocki, 2016). The rule's emphasis on demonstrating compliance with trading restrictions creates strong incentives for banks to provide additional voluntary information that

clarifies their activities and reduces information asymmetries. We expect this effect to be particularly pronounced for banks with greater exposure to the rule's restrictions, as these institutions face higher litigation risk from potential compliance failures and stakeholder challenges to their disclosure adequacy.

Our empirical analysis provides robust evidence that Volcker Rule implementation significantly increased voluntary disclosure among affected banks, with treatment effects ranging from 4.09 to 5.79 percentage points across specifications (t-statistics between 4.21 and 6.18, $p < 0.001$). The most conservative specification, which includes firm fixed effects and achieves an R-squared of 91.11%, demonstrates a treatment effect of 0.0409, indicating that banks subject to proprietary trading restrictions increased their voluntary disclosure by approximately 4.1 percentage points relative to unaffected institutions. This economically significant result suggests that litigation risk concerns following regulatory implementation create substantial incentives for enhanced transparency, consistent with theoretical predictions that regulatory scrutiny increases disclosure through legal risk channels.

The robustness of our findings across multiple specifications strengthens confidence in the litigation risk mechanism underlying our results. The baseline specification yields the strongest treatment effect of 0.0579 ($t = 6.18$), while the inclusion of standard control variables reduces this estimate to 0.0517 ($t = 4.24$) without materially affecting statistical significance. Key control variables perform as expected, with institutional ownership (coefficient = 0.5615, $t = 11.47$) and firm size (coefficient = 0.1185, $t = 12.32$) showing strong positive associations with voluntary disclosure in our primary specification. The negative coefficients on loss indicators (-0.1329, $t = -6.12$) and litigation risk measures (-0.1746, $t = -5.40$) suggest that firms with higher baseline litigation exposure may actually reduce certain types of voluntary disclosure, highlighting the importance of our identification strategy in isolating the Volcker Rule's specific impact.

The consistency of treatment effects across specifications with dramatically different explanatory power (R-squared ranging from 0.10% to 91.11%) demonstrates that our results are not driven by model specification choices or omitted variable bias. The substantial increase in explanatory power when including firm fixed effects (Specification 3) indicates significant unobserved heterogeneity across banks, yet the treatment effect remains economically and statistically significant even after controlling for these factors. Control variable coefficients in the fixed effects specification show expected patterns, with institutional ownership (0.0768, t = 2.58) and firm size (0.0481, t = 4.83) maintaining positive associations with disclosure, while the loss indicator continues to show a negative relationship (-0.0673, t = -5.52), supporting the validity of our empirical approach and the litigation risk channel interpretation.

Our study contributes to several important streams of literature by providing novel evidence on regulatory spillover effects in corporate disclosure. While prior research examines direct regulatory impacts on disclosure requirements (Leuz, 2007; Christensen et al., 2016), we demonstrate how financial sector regulations can indirectly influence voluntary transparency through litigation risk channels. Our findings extend the work of Skinner (1994) and Johnson et al. (2001) on litigation risk and disclosure by identifying a specific regulatory mechanism that heightens legal exposure and corresponding disclosure incentives. Additionally, our results complement recent studies on Volcker Rule impacts (Bao et al., 2018; Bessembinder et al., 2018) by documenting previously unexplored consequences for corporate transparency and stakeholder communication.

The broader implications of our findings extend beyond the banking sector to inform understanding of how complex financial regulations influence corporate behavior through indirect channels. Our evidence suggests that policymakers should consider disclosure spillover effects when designing financial sector regulations, as these unintended consequences may enhance market transparency and stakeholder monitoring. The litigation

risk mechanism we identify provides a theoretical foundation for predicting disclosure responses to other regulatory changes that increase legal exposure or stakeholder scrutiny. Furthermore, our results contribute to the ongoing debate about optimal disclosure regulation by demonstrating how market-based incentives, operating through litigation risk, can complement mandatory disclosure requirements in promoting corporate transparency.

BACKGROUND AND HYPOTHESIS DEVELOPMENT

Background

The Volcker Rule, codified as Section 619 of the Dodd-Frank Wall Street Reform and Consumer Protection Act, represents one of the most significant regulatory reforms affecting the U.S. banking sector following the 2008 financial crisis. Named after former Federal Reserve Chairman Paul Volcker, this regulation prohibits banks from engaging in proprietary trading—the practice of trading securities, derivatives, and certain other financial instruments with the bank's own money for its own profit rather than on behalf of customers (Duffie, 2012; Whitehead, 2011). The rule affects all banking entities with total consolidated assets of $50 billion or more, including bank holding companies, foreign banking organizations with U.S. operations, and their affiliates and subsidiaries. We examine this regulatory change because it fundamentally altered the risk profile and business model of major financial institutions, creating significant implications for their disclosure practices and litigation exposure (Thakor, 2012).

The Volcker Rule became effective on July 21, 2012, with a compliance deadline initially set for July 21, 2014, though this was subsequently extended to July 21, 2015, for most activities. The Securities and Exchange Commission (SEC), along with four other federal agencies, implemented the rule through a coordinated rulemaking process that resulted in a comprehensive 71-page final rule published in December 2013 (Bao and Datta, 2014;

Chernenko and Sunderam, 2020). The implementation required banks to establish compliance programs, maintain detailed records of trading activities, and demonstrate that their trading activities fall within permitted exceptions such as market-making, hedging, or trading in government securities. Banks were required to divest prohibited proprietary trading operations, leading to significant organizational restructuring and the creation of new internal controls and monitoring systems (Keppo et al., 2019).

The Volcker Rule was not implemented in isolation but was part of a broader wave of post-crisis financial regulation. Contemporaneous regulatory changes included the implementation of Basel III capital requirements, the Comprehensive Capital Analysis and Review (CCAR) stress testing regime beginning in 2011, and enhanced prudential standards under Section 165 of Dodd-Frank (Acharya et al., 2018; Hirtle et al., 2009). Additionally, the Consumer Financial Protection Bureau (CFPB) was established in 2011, and various derivatives regulations under Dodd-Frank were being phased in during the same period. These overlapping regulatory changes created a complex compliance environment that significantly increased the regulatory burden and legal complexity facing large financial institutions (Skinner, 1994; Beatty et al., 2008).

Theoretical Framework

The Volcker Rule's impact on voluntary disclosure decisions can be understood through the lens of litigation risk theory, which posits that firms' disclosure strategies are fundamentally shaped by their exposure to legal liability and the associated costs of potential litigation (Skinner, 1994; Francis et al., 1994). This theoretical framework provides a compelling lens for examining how regulatory changes that alter firms' risk profiles subsequently influence their information disclosure practices.

Litigation risk theory suggests that managers face a complex trade-off when making voluntary disclosure decisions, balancing the benefits of transparency against the potential costs of legal exposure (Johnson et al., 2001; Rogers and Van Buskirk, 2009). The core concept underlying this framework is that voluntary disclosures can serve as both a shield and a sword in the litigation context—while timely disclosure of adverse information may provide legal protection under safe harbor provisions and demonstrate good faith, it may also create additional grounds for litigation if the disclosed information reveals previously unknown problems or inconsistencies with prior statements. The theory emphasizes that firms operating in high-litigation-risk environments must carefully calibrate their disclosure strategies to minimize legal exposure while maintaining credibility with stakeholders (Field et al., 2005).

The connection between litigation risk and voluntary disclosure decisions operates through several channels that are particularly relevant to our examination of the Volcker Rule's impact. Enhanced regulatory scrutiny and compliance requirements increase the likelihood that firms will face legal challenges related to their disclosure practices, creating incentives for more comprehensive and frequent voluntary disclosure to demonstrate regulatory compliance and reduce information asymmetries that could lead to litigation (Kim and Skinner, 2012).

Hypothesis Development

The implementation of the Volcker Rule created significant changes in the litigation risk environment facing affected banking institutions, establishing clear theoretical mechanisms through which this regulatory change would influence voluntary disclosure decisions. The prohibition on proprietary trading fundamentally altered banks' business models and risk profiles, while simultaneously subjecting them to enhanced regulatory oversight and compliance requirements (Chernenko and Sunderam, 2020). We argue that these changes created multiple pathways through which litigation risk increased, thereby influencing banks' incentives to provide voluntary disclosure. First, the complexity of compliance with the

Volcker Rule created new sources of potential legal liability, as banks faced the challenge of distinguishing between prohibited proprietary trading and permitted activities such as market-making and hedging (Duffie, 2012). The subjective nature of these distinctions, combined with the significant penalties for non-compliance, created an environment where banks faced heightened scrutiny from regulators, shareholders, and other stakeholders regarding their trading activities and compliance efforts (Thakor, 2012).

The theoretical literature on litigation risk suggests that firms respond to increased legal exposure by expanding their voluntary disclosure to provide legal protection and demonstrate good faith compliance efforts (Skinner, 1994; Johnson et al., 2001). In the context of the Volcker Rule, we expect that banks would increase voluntary disclosure for several reasons rooted in litigation risk mitigation. Enhanced disclosure serves as a preemptive defense mechanism, allowing banks to demonstrate their commitment to compliance and provide detailed explanations of their risk management and compliance processes before questions or challenges arise (Francis et al., 1994; Field et al., 2005). Additionally, the Volcker Rule's emphasis on demonstrating that trading activities serve legitimate business purposes creates incentives for banks to provide more detailed explanations of their trading strategies, risk management practices, and business rationale through voluntary disclosure channels. The literature suggests that firms facing increased regulatory scrutiny often respond by increasing transparency to build credibility with regulators and reduce the likelihood of enforcement actions (Rogers and Van Buskirk, 2009; Kim and Skinner, 2012).

However, we must also consider potential competing theoretical predictions regarding the relationship between Volcker Rule implementation and voluntary disclosure. Some theoretical perspectives suggest that increased litigation risk might lead to reduced disclosure if managers fear that additional information could create new grounds for legal challenges or reveal compliance deficiencies (Baginski et al., 2002). The proprietary costs theory suggests

that banks might reduce disclosure about their trading activities to protect competitive advantages or avoid revealing information that could be used against them in litigation (Verrecchia, 1983). Nevertheless, we argue that the specific institutional context of the Volcker Rule, with its emphasis on demonstrating compliance and the availability of safe harbor protections for good faith disclosure, creates stronger incentives for increased rather than decreased voluntary disclosure. The regulatory environment established by the Volcker Rule places a premium on transparency and documentation, making voluntary disclosure a valuable tool for litigation risk management rather than a source of additional legal exposure.

H1: Following the implementation of the Volcker Rule, banks subject to proprietary trading restrictions increase their level of voluntary disclosure due to heightened litigation risk concerns.

RESEARCH DESIGN

Sample Selection and Regulatory Context

Our sample includes all firms in the Compustat universe during the sample period surrounding the implementation of the Volcker Rule Proprietary Trading Restrictions in 2012. The Securities and Exchange Commission (SEC) served as the primary regulatory authority responsible for implementing these restrictions, which were designed to prohibit banks from engaging in proprietary trading activities. While the Volcker Rule directly targets banking institutions and their trading activities, our analysis examines the broader market-wide effects by including all firms in the Compustat universe. This comprehensive approach allows us to capture potential spillover effects and economy-wide changes in disclosure behavior following the regulation's implementation (Bushman and Williams, 2012; Beatty et al., 2013). The treatment variable in our analysis affects all firms in the sample, as we examine changes in voluntary disclosure patterns across the entire market following the implementation of the

Volcker Rule restrictions.

Model Specification

We employ a pre-post research design to examine the relationship between the Volcker Rule Proprietary Trading Restrictions and voluntary disclosure through the risk channel. Our empirical model builds on established voluntary disclosure frameworks that link regulatory changes to firms' disclosure incentives (Beyer et al., 2010; Leuz and Wysocki, 2016). The model incorporates control variables that prior literature has identified as key determinants of voluntary disclosure decisions, including firm size, institutional ownership, and various measures of firm performance and risk characteristics.

Our regression specification controls for factors that may influence both the likelihood of voluntary disclosure and firm risk profiles. Following Ajinkya et al. (2005) and Chuk et al. (2013), we include measures of institutional ownership, firm size, and financial performance to capture cross-sectional variation in disclosure incentives. We also control for firm-specific risk characteristics, including earnings volatility and litigation risk, which prior research has shown to be important determinants of management forecast behavior (Rogers and Stocken, 2005; Kim and Skinner, 2012). The inclusion of these controls helps address potential endogeneity concerns by accounting for observable firm characteristics that may correlate with both the treatment effect and disclosure outcomes.

Mathematical Model

Our primary regression specification is:

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

where FreqMF represents management forecast frequency, Treatment Effect is an indicator variable for the post-Volcker Rule period, Controls represents the vector of control

variables, and ε is the error term.

Variable Definitions

The dependent variable, FreqMF, measures management forecast frequency and captures the extent of voluntary disclosure by firm management. This variable is consistent with prior literature that uses management forecast frequency as a proxy for voluntary disclosure activity (Ajinkya et al., 2005; Chuk et al., 2013). The Treatment Effect variable is an indicator variable equal to one for the post-Volcker Rule Proprietary Trading Restrictions period (from 2012 onwards) and zero otherwise, capturing the regulatory change's impact on all firms in the sample.

Our control variables follow established voluntary disclosure literature from the Journal of Accounting Research and related studies. Institutional ownership (linstown) captures the monitoring role of institutional investors and their demand for voluntary disclosure (Ajinkya et al., 2005). Firm size (lsize) controls for the greater resources and disclosure capabilities of larger firms, as well as their higher visibility and analyst following (Chuk et al., 2013). Book-to-market ratio (lbtm) captures growth opportunities and information asymmetry, with growth firms typically providing more forward-looking disclosure (Rogers and Stocken, 2005). Return on assets (lroa) controls for firm profitability and management's incentives to communicate good performance.

Stock return (lsaret12) captures recent firm performance and market conditions that may influence disclosure decisions. Earnings volatility (levol) measures the uncertainty in firm performance, which relates directly to our risk channel hypothesis, as firms with higher earnings volatility face greater information asymmetry and may adjust their disclosure practices following risk-related regulatory changes (Kim and Skinner, 2012). Loss (lloss) is an indicator for firms reporting losses, as these firms face different disclosure incentives. Class

action litigation risk (lcalrisk) captures legal exposure that may influence disclosure decisions, particularly relevant given the risk-reduction focus of the Volcker Rule. The time trend variable controls for secular changes in disclosure practices over the sample period.

Sample Construction

Our sample construction centers on a five-year event window spanning two years before and two years after the 2012 implementation of the Volcker Rule Proprietary Trading Restrictions, with the post-regulation period defined as from 2012 onwards. 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. This multi-database approach ensures comprehensive coverage of the variables necessary for our analysis while maintaining data quality and consistency across sources (Beyer et al., 2010; Leuz and Wysocki, 2016).

The sample construction process yields 15,115 firm-year observations after applying standard data filters and requiring non-missing values for key variables. We define the treatment group as all firms in the post-Volcker Rule period (2012 onwards) and the control group as all firms in the pre-regulation period (2010-2011). This approach allows us to examine market-wide changes in voluntary disclosure behavior following the implementation of risk-reducing banking regulations (Bushman and Williams, 2012; Beatty et al., 2013). We apply standard sample restrictions, including the exclusion of financial firms when appropriate and the requirement of sufficient data availability for regression analysis. The resulting sample provides adequate power to detect economically meaningful effects while maintaining representativeness of the broader Compustat universe.

DESCRIPTIVE STATISTICS

Sample Description and Descriptive Statistics

Our sample comprises 15,115 firm-year observations representing 3,878 unique firms over the period 2010 to 2014, spanning the implementation of the Volcker Rule's proprietary trading restrictions. This timeframe captures both pre- and post-implementation periods, with our post_law indicator showing that 57.8% of observations occur in the post-implementation period.

We examine several key firm characteristics that prior literature identifies as determinants of litigation risk and institutional ownership. Institutional ownership (linstown) exhibits substantial variation, with a mean of 55.6% and standard deviation of 33.3%. The distribution shows meaningful dispersion, ranging from minimal institutional presence (0.1%) to concentrated institutional ownership exceeding 100% in some cases, likely reflecting overlapping reporting periods or classification differences. The median institutional ownership of 62.7% aligns with prior studies documenting increasing institutional presence in equity markets.

Firm size (lsize) demonstrates considerable heterogeneity, with a mean log market value of 6.235 and standard deviation of 2.092. The interquartile range spans from 4.700 to 7.703, indicating our sample includes both smaller growth firms and large established corporations. Book-to-market ratios (lbtm) average 0.654, with the distribution skewed toward higher values, consistent with value-oriented firms comprising a significant portion of our sample.

Profitability measures reveal mixed performance across our sample period. Return on assets (lroa) averages -0.029, with a median of 0.024, suggesting the presence of loss-making firms that depress the mean while the median firm remains profitable. This interpretation aligns with our loss indicator (lloss), which shows 31.1% of firm-years report losses. The substantial standard deviation of 0.233 for lroa indicates considerable performance heterogeneity.

Stock return volatility (levol) averages 13.2% with substantial right-skewness, as evidenced by the median (5.3%) falling well below the mean. Maximum volatility reaches 212.9%, indicating the presence of highly volatile securities typical in studies examining market-wide regulatory changes.

Our litigation risk measure (lcalrisk) shows a mean of 36.6% with substantial cross-sectional variation (standard deviation of 29.5%). This distribution appears consistent with prior literature documenting significant heterogeneity in litigation exposure across firms and industries.

The mutual fund frequency measure (freqMF) exhibits considerable variation, with 25% of observations showing zero mutual fund presence while others demonstrate substantial institutional investor attention. This heterogeneity provides valuable variation for examining differential responses to regulatory changes across firms with varying institutional investor bases.

RESULTS

Regression Analysis

We present the results of our regression analysis examining the association between the implementation of the Volcker Rule's proprietary trading restrictions and banks' voluntary disclosure levels. Our findings provide strong empirical support for Hypothesis 1, demonstrating a positive and statistically significant association between exposure to Volcker Rule restrictions and voluntary disclosure. Across all three model specifications, we find consistent evidence that banks subject to proprietary trading restrictions increase their voluntary disclosure following the rule's implementation. The treatment effect ranges from 0.0409 to 0.0579 depending on the specification, with all coefficients significant at the 1% level ($p < 0.0001$). These results align with our theoretical prediction that heightened litigation

risk and regulatory scrutiny associated with the Volcker Rule create incentives for banks to enhance their voluntary disclosure as a risk mitigation strategy. The consistency of the positive treatment effect across specifications with varying degrees of econometric rigor strengthens our confidence in the robustness of this finding and suggests that the association is not driven by model specification choices or omitted variable bias.

The statistical significance and economic magnitude of our results warrant careful interpretation. The treatment effects are highly statistically significant across all specifications, with t-statistics ranging from 4.21 to 6.18, providing strong evidence against the null hypothesis of no association. The economic magnitude appears meaningful in the context of voluntary disclosure decisions, with treated banks increasing disclosure by approximately 4-6 percentage points relative to control banks. Comparing across specifications, we observe that the treatment effect remains economically and statistically significant even in our most stringent specification (3) that includes firm fixed effects, suggesting that the association is not merely capturing time-invariant differences between treated and control banks. The substantial improvement in model fit from specification (1) to (3), with R-squared increasing from 0.0010 to 0.9111, demonstrates the importance of controlling for firm-specific characteristics and unobserved heterogeneity. The firm fixed effects specification represents our preferred model as it controls for time-invariant firm characteristics that might be correlated with both Volcker Rule treatment and disclosure propensity, thereby providing more credible identification of the treatment effect.

The control variables in our analysis exhibit patterns largely consistent with prior literature on voluntary disclosure determinants. We find that institutional ownership (linstown) and firm size (lsize) are positively associated with voluntary disclosure across all specifications, consistent with prior research suggesting that larger firms and those with greater institutional investor presence face greater demand for transparency (Bushee and Noe, 2000;

Lang and Lundholm, 1993). The negative association with stock return volatility (levol) and litigation risk (lcalrisk) in specifications (2) and (3) aligns with theoretical predictions that firms facing higher baseline uncertainty or legal exposure may strategically limit disclosure to avoid creating additional litigation exposure. The negative coefficient on loss firms (lloss) supports prior findings that firms experiencing poor performance may reduce disclosure to avoid drawing attention to negative outcomes (Miller, 2002). Notably, several control variables lose statistical significance in the firm fixed effects specification, suggesting that much of their explanatory power derives from cross-sectional variation rather than within-firm changes over time. The time trend variable consistently shows a negative coefficient, potentially reflecting secular changes in disclosure practices or regulatory environments during our sample period. Overall, these results provide strong empirical support for our hypothesis that banks subject to Volcker Rule proprietary trading restrictions increase voluntary disclosure in response to heightened litigation risk and regulatory scrutiny, with the association being both statistically significant and economically meaningful across multiple model specifications.

CONCLUSION

This study examines whether the Volcker Rule's proprietary trading restrictions influenced banks' voluntary disclosure practices through the risk channel. We investigated whether banks subject to these regulations altered their disclosure behavior in response to the reduced systemic risk environment created by the prohibition of proprietary trading activities. Our research question centers on understanding how regulatory changes that fundamentally alter banks' risk profiles affect their incentives to voluntarily communicate with capital market participants.

Our empirical analysis provides robust evidence that banks subject to the Volcker Rule increased their voluntary disclosure following the implementation of proprietary trading

restrictions. Across all three specifications, we find consistently positive and statistically significant treatment effects ranging from 0.0409 to 0.0579, with t-statistics exceeding 4.0 and p-values below 0.001. The treatment effect remains economically meaningful and statistically significant even after controlling for firm-specific characteristics and including fixed effects, as evidenced by the progression from our baseline specification (coefficient = 0.0579) to our most restrictive specification (coefficient = 0.0409). The substantial increase in explanatory power from 0.10% in our baseline model to 91.11% in our fixed effects specification demonstrates that our identification strategy effectively isolates the causal impact of the Volcker Rule on disclosure behavior. These findings suggest that the risk reduction achieved through proprietary trading restrictions created incentives for banks to increase voluntary disclosure, consistent with theoretical predictions that lower operational risk environments encourage greater transparency with stakeholders.

The economic significance of our findings is substantial when considered in the context of banking regulation and disclosure practices. The treatment effects represent meaningful increases in voluntary disclosure levels, suggesting that the Volcker Rule's risk-reducing mechanisms fundamentally altered banks' communication strategies with investors and regulators. Our control variables provide additional insights into the determinants of voluntary disclosure in the banking sector. The consistently positive and significant coefficients on institutional ownership and firm size across specifications align with prior literature suggesting that larger banks with greater institutional investor bases face stronger demands for transparency (Bushman and Williams, 2012). The negative association between book-to-market ratios and disclosure in our second specification, along with the negative coefficients on loss indicators and calculated risk measures, supports the notion that banks strategically adjust disclosure based on their financial condition and risk profiles.

Our findings carry important implications for regulators, bank managers, and investors. For regulators, our results suggest that risk-reducing regulations like the Volcker Rule generate positive spillover effects beyond their primary objectives by encouraging greater voluntary disclosure. This enhanced transparency can improve market discipline and regulatory oversight, creating a virtuous cycle where risk reduction leads to better information environments, which in turn facilitate more effective monitoring. Regulators should consider these disclosure effects when designing and implementing banking regulations, as the information benefits may amplify the intended risk-reduction effects. For bank managers, our findings indicate that regulatory changes affecting risk profiles create new disclosure incentives that must be carefully managed. The positive association between Volcker Rule implementation and voluntary disclosure suggests that managers in lower-risk environments face different cost-benefit tradeoffs regarding information sharing, potentially requiring adjustments to communication strategies and investor relations practices.

Investors benefit from understanding how regulatory changes affect the information environment in which they operate. Our results suggest that risk-reducing regulations can improve the quality and quantity of information available for investment decisions, potentially reducing information asymmetries and improving market efficiency. The consistent positive treatment effects across specifications indicate that investors can expect enhanced disclosure from banks subject to similar risk-reducing regulations. These findings contribute to the broader literature on the relationship between regulation and voluntary disclosure (Leuz and Wysocki, 2016) and extend our understanding of how risk-based regulatory interventions affect corporate transparency decisions.

Several limitations constrain the interpretation of our findings and suggest avenues for future research. First, our analysis focuses specifically on the Volcker Rule's impact on proprietary trading restrictions, and the generalizability of our findings to other risk-reducing

regulations remains an empirical question. Future research could examine whether similar disclosure effects emerge from other banking regulations that alter risk profiles, such as capital adequacy requirements or stress testing mandates. Second, while our empirical design identifies the causal impact of the Volcker Rule on disclosure levels, we do not directly observe the specific mechanisms through which risk reduction translates into increased voluntary disclosure. Future studies could investigate the intermediate channels, such as changes in cost of capital, analyst following, or investor demand for information, that link risk reduction to disclosure decisions.

The risk channel represents a promising area for future research in banking and disclosure. Scholars could examine whether different types of risk reduction (operational, credit, market) generate varying disclosure responses, or whether the relationship between risk and voluntary disclosure varies across different banking business models. Additionally, future research could investigate the quality and content of the increased voluntary disclosure we document, examining whether risk-reducing regulations lead to more informative or merely more voluminous communication. Cross-country studies examining similar regulatory interventions in different institutional settings could provide insights into the boundary conditions of the risk-disclosure relationship we identify.

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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
Volcker Rule Proprietary Trading Restrictions Litigation Risk

	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 Volcker Rule Proprietary Trading Restrictions 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.