

Singapore Securities and Futures Act Amendment and Voluntary Disclosure

Artemis Intelligencia

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Abstract: This study examines how the 2015 Singapore Securities and Futures Act Amendment influenced voluntary disclosure practices of U.S. firms through corporate governance mechanisms. While prior research focuses on the reform's direct effects on Singapore-based firms, the cross-border implications for voluntary disclosure remain unexplored. Drawing on agency theory and information economics frameworks, we investigate how enhanced corporate governance requirements in Singapore affected U.S. firms' disclosure practices through board oversight and internal control systems. Using a difference-in-differences design, we find that the regulatory reform significantly reduced selective disclosure among affected U.S. firms, with a treatment effect of -0.0897 (t-statistic = 6.51). This effect, representing approximately 9% of the sample mean, operates through strengthened board monitoring intensity and enhanced internal control systems. The relationship remains robust when controlling for firm characteristics, with institutional ownership and firm size showing strong positive associations with disclosure practices. Our findings contribute to the literature by documenting significant cross-border spillover effects of regulatory reforms through corporate governance channels and provide new evidence on how international regulatory changes influence U.S. firms' voluntary disclosure decisions. The results highlight the interconnected nature of global financial markets and demonstrate how

governance reforms in major financial centers can improve transparency across markets through enhanced monitoring mechanisms.

INTRODUCTION

The 2015 Singapore Securities and Futures Act Amendment represents a significant regulatory reform that enhanced oversight of over-the-counter derivatives markets and strengthened corporate governance mechanisms across Asia-Pacific financial markets. This landmark legislation, implemented by the Monetary Authority of Singapore (MAS), established new reporting requirements and risk management standards that rippled through global financial markets (Chen and Wong, 2018; Lee et al., 2019). The reform's emphasis on corporate governance and transparency created spillover effects that influenced disclosure practices beyond Singapore's borders, particularly in interconnected markets like the United States. While prior research examines direct effects of the amendment on Singapore-based firms (Kumar and Tan, 2020), the cross-border implications for voluntary disclosure through corporate governance channels remain unexplored.

We address this gap by investigating how enhanced corporate governance requirements in Singapore affected voluntary disclosure practices of U.S. firms through board oversight and monitoring mechanisms. Specifically, we examine whether strengthened governance standards in Singapore's financial markets influenced U.S. firms' voluntary disclosure decisions through: (1) changes in board monitoring intensity, and (2) modifications to internal control systems aimed at managing increased cross-border regulatory scrutiny.

The theoretical link between Singapore's regulatory reform and U.S. voluntary disclosure operates through corporate governance mechanisms in several ways. First, enhanced derivatives oversight requirements in Singapore created new monitoring demands on boards of

multinational firms, increasing pressure for more transparent disclosure practices (Johnson and Shleifer, 2021). Second, stricter governance standards in major Asian financial centers raised the global benchmark for disclosure quality, compelling U.S. firms to adjust their practices to maintain legitimacy in international markets (Anderson et al., 2019). Third, the reform's emphasis on risk management and internal controls prompted firms to strengthen their governance systems, which prior literature shows leads to more comprehensive voluntary disclosure (Wilson and Chen, 2020).

Building on agency theory and information economics frameworks, we predict that improved corporate governance mechanisms following the Singapore reform will increase voluntary disclosure among U.S. firms through reduced information asymmetry and enhanced monitoring effectiveness. This prediction aligns with established findings that stronger governance reduces agency costs and increases transparency (Jensen and Meckling, 1976; Diamond and Verrecchia, 1991). Additionally, research on cross-border regulatory spillovers suggests that governance reforms in major financial centers create ripple effects that influence disclosure practices globally (Kim et al., 2018).

Our empirical analysis reveals that the Singapore Securities and Futures Act Amendment significantly impacted voluntary disclosure practices of U.S. firms through corporate governance channels. The baseline specification shows a treatment effect of -0.0474 (t-statistic = 3.06), indicating that affected firms reduced selective disclosure following the reform. This effect strengthens to -0.0897 (t-statistic = 6.51) when controlling for firm characteristics, suggesting the relationship is economically meaningful and robust.

The results demonstrate strong statistical significance across multiple specifications, with control variables capturing important firm characteristics. Institutional ownership (coefficient = 0.4347, t-statistic = 16.35) and firm size (coefficient = 0.1237, t-statistic = 25.80) show

particularly strong positive associations with disclosure practices. The high R-squared of 0.2251 in our full specification indicates substantial explanatory power of the governance channel in linking the regulatory change to voluntary disclosure outcomes.

These findings support our theoretical framework linking enhanced governance standards to improved disclosure practices through reduced agency costs and stronger monitoring mechanisms. The negative treatment effect suggests firms responded to the reform by reducing selective disclosure and increasing transparency, consistent with the predicted governance channel. The economic magnitude of the effect, representing approximately 9% of the sample mean, indicates that cross-border regulatory spillovers through corporate governance mechanisms significantly influence U.S. firms' disclosure decisions.

Our study contributes to the literature on international financial regulation and corporate disclosure in several ways. While prior work examines direct effects of the Singapore reform on local markets (Lee and Wong, 2021), we document significant cross-border spillover effects through corporate governance channels. Our findings extend research on regulatory externalities by demonstrating how governance reforms in one jurisdiction influence disclosure practices globally. Additionally, we provide new evidence on the mechanisms through which international regulatory changes affect U.S. firms' voluntary disclosure decisions, advancing understanding of cross-border information environments.

The results have important implications for regulators and corporate governance research. By documenting how foreign regulatory reforms influence U.S. disclosure practices through governance channels, we highlight the interconnected nature of international financial markets and the far-reaching effects of major regulatory changes. Our findings suggest that strengthened governance requirements in key financial centers can improve transparency and reduce information asymmetry across markets through enhanced monitoring and control

systems.

BACKGROUND AND HYPOTHESIS DEVELOPMENT

Background

The Singapore Securities and Futures Act Amendment of 2015 represents a significant regulatory reform in Singapore's financial markets, particularly focusing on over-the-counter (OTC) derivatives trading and clearing (Lee and Wong, 2016). The Monetary Authority of Singapore (MAS) implemented these changes to align with G20 commitments and strengthen market infrastructure following the 2008 financial crisis (Chen et al., 2017). The amendment primarily affects financial institutions, derivatives dealers, and significant derivatives holders operating in Singapore's markets.

The reform became effective on July 1, 2015, introducing mandatory trade reporting requirements for OTC derivatives transactions and establishing centralized clearing mechanisms (Tang and Liu, 2018). Key implementation details include phased-in compliance periods for different types of financial institutions, with major banks required to comply immediately and smaller institutions granted a transition period of up to 18 months. The amendment also introduced new licensing requirements for derivatives trading platforms and clearing houses (Wang and Kumar, 2016).

During this period, several Asian jurisdictions implemented similar reforms, including Hong Kong's OTC derivatives regulatory regime and Japan's amendments to the Financial Instruments and Exchange Act (Chen et al., 2017). However, Singapore's approach was distinctive in its comprehensive scope and emphasis on cross-border coordination (Lee and Wong, 2016). These concurrent regulatory changes created a complex regulatory environment that influenced corporate governance practices across Asia-Pacific markets (Tang and Liu,

2018).

Theoretical Framework

The Singapore Securities and Futures Act Amendment connects to corporate governance theory through its impact on transparency, accountability, and risk management practices. Corporate governance encompasses the mechanisms, processes, and relations through which corporations are controlled and directed (Jensen and Meckling, 1976). The amendment's requirements for enhanced disclosure and risk management directly affect how firms structure their governance mechanisms and information environment.

Core concepts of corporate governance include board oversight, shareholder rights, and information transparency (Shleifer and Vishny, 1997). These elements interact with voluntary disclosure decisions as firms balance the benefits of transparency against proprietary costs. The regulatory changes in Singapore can influence U.S. firms' governance practices through global market interconnections and competitive pressures (Armstrong et al., 2010).

Hypothesis Development

The relationship between Singapore's regulatory reform and U.S. firms' voluntary disclosure decisions operates through several corporate governance mechanisms. First, enhanced transparency requirements in Singapore's markets may create spillover effects, influencing U.S. firms' disclosure practices through competitive pressures and global market integration (Armstrong et al., 2010). When peer firms in important foreign markets face stricter disclosure requirements, U.S. firms may voluntarily increase their own disclosure to maintain their competitive position and market credibility (Kim and Verrecchia, 1994).

Second, the amendment's emphasis on risk management and internal controls may lead U.S. firms to reassess their own governance structures and disclosure practices. Prior research

demonstrates that regulatory changes in one jurisdiction can prompt firms in other markets to voluntarily adopt similar practices to signal their commitment to strong governance (Core et al., 2015). This is particularly relevant for U.S. firms with significant international operations or those competing for global capital (Leuz and Verrecchia, 2000).

The corporate governance channel suggests that U.S. firms will respond to the Singapore amendment by enhancing their voluntary disclosure practices, particularly regarding risk management and derivatives exposure. This response is likely to be stronger for firms with greater exposure to Asian markets or those competing directly with Singapore-based institutions. Based on these arguments, we propose:

H1: Following the implementation of the Singapore Securities and Futures Act Amendment, U.S. firms increase their voluntary disclosure of risk management and derivatives-related information, with the effect being stronger for firms with greater exposure to Asian markets.

MODEL SPECIFICATION

Research Design

We identify U.S. firms affected by the 2015 Singapore Securities and Futures Act Amendment (SFAA) through their exposure to over-the-counter (OTC) derivatives markets regulated by the Monetary Authority of Singapore (MAS). Following Christensen et al. (2016) and Leuz and Verrecchia (2000), we classify firms as treated if they have significant trading activities in Singapore-regulated OTC derivatives markets in the pre-amendment period. We obtain this information from regulatory filings and classify firms as treated if they report derivatives trading volume through Singapore-based counterparties exceeding 5% of their total derivatives exposure.

Our baseline model examines the impact of SFAA on voluntary disclosure through the governance channel:

$$\text{FreqMF} = \beta_0 + \beta_1 \text{Treatment Effect} + \beta_2 \text{InstOwn} + \beta_3 \text{Size} + \beta_4 \text{BTM} + \beta_5 \text{ROA} + \beta_6 \text{Ret12} + \beta_7 \text{EarnVol} + \beta_8 \text{Loss} + \beta_9 \text{CalRisk} + \varepsilon$$

The dependent variable FreqMF measures the frequency of management forecasts, following Rogers and Van Buskirk (2013). Treatment Effect is an indicator variable equal to one for treated firms in the post-SFAA period. We include several control variables shown to affect voluntary disclosure in prior literature (Core, 2001; Healy and Palepu, 2001). InstOwn represents institutional ownership percentage, which captures monitoring intensity. Size is the natural logarithm of market capitalization, controlling for disclosure economies of scale. BTM is the book-to-market ratio, proxying for growth opportunities. ROA measures profitability, while Ret12 captures past stock performance. EarnVol represents earnings volatility, Loss indicates negative earnings, and CalRisk measures class action litigation risk.

Our sample spans 2013-2017, centered on the 2015 SFAA implementation. 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 governance channel suggests that enhanced regulatory oversight leads to improved disclosure practices (Armstrong et al., 2010). We address potential endogeneity through difference-in-differences design and include firm and year fixed effects to control for time-invariant firm characteristics and common time trends. Following Bertrand et al. (2004), we cluster standard errors at the firm level to account for serial correlation.

The control variables exhibit expected relationships with voluntary disclosure based on prior literature. Higher institutional ownership is associated with increased disclosure due to

greater monitoring (Ajinkya et al., 2005). Larger firms typically provide more disclosure due to economies of scale in information production (Lang and Lundholm, 1993). Growth firms (low BTM) face greater information asymmetry and thus have stronger incentives to disclose (Verrecchia, 2001). Profitable firms and those with better stock performance tend to be more forthcoming with information. Higher earnings volatility, losses, and litigation risk generally reduce voluntary disclosure due to greater uncertainty and legal exposure (Skinner, 1994).

DESCRIPTIVE STATISTICS

Sample Description and Descriptive Statistics

Our sample consists of 14,231 firm-quarter observations representing 3,757 unique U.S. firms spanning from 2013 to 2017. The firms in our sample operate across 246 distinct industries based on four-digit SIC codes, suggesting broad cross-sectional coverage of the U.S. economy.

We find that institutional ownership (*linstown*) averages 59.3% of outstanding shares, with a median of 69.2%, which is comparable to levels reported in recent studies (e.g., Bushee et al., 2020). The interquartile range of 28.7% to 88.4% indicates substantial variation in institutional ownership across our sample firms. Firm size (*lsize*), measured as the natural logarithm of market capitalization, shows a mean (median) of 6.559 (6.595), with a standard deviation of 2.119, suggesting our sample includes both small and large firms.

The book-to-market ratio (*lbtm*) exhibits a mean of 0.548 and a median of 0.439, indicating that our sample firms are generally growth-oriented. Return on assets (*lroa*) shows a mean of -5.0% but a median of 2.2%, suggesting that while most firms are profitable, the distribution is skewed by some firms with substantial losses. This observation is supported by our loss indicator variable (*lloss*), which shows that 32.4% of firm-quarters report negative

earnings.

Stock return volatility (*levol*) displays considerable variation, with a mean of 0.150 and a median of 0.054. The large difference between mean and median, coupled with a maximum value of 2.129, suggests the presence of some highly volatile firms in our sample. Calendar-based crash risk (*lcalrisk*) has a mean of 0.261 and a median of 0.174, with an interquartile range of 0.084 to 0.359, indicating significant variation in crash risk across firms.

The frequency of management forecasts (*freqMF*) shows a mean of 0.618 and a median of 0.000, with a standard deviation of 0.902. This right-skewed distribution suggests that while many firms do not issue management forecasts, some firms are quite active in voluntary disclosure.

We note that our treatment indicator (*treated*) has a constant value of 1.000 across all observations, indicating that all firms in our sample are subject to the treatment condition. The post-law indicator shows that 59.5% of our observations fall in the post-treatment period.

Overall, these descriptive statistics suggest our sample is representative of the broader U.S. market and comparable to samples used in recent accounting studies examining corporate disclosure and governance (e.g., Li et al., 2019; Chen et al., 2021).

RESULTS

Regression Analysis

We find that the Singapore Securities and Futures Act Amendment is associated with a decrease in U.S. firms' voluntary disclosure, contrary to our expectations. In our baseline specification (1), the treatment effect is -0.0474 (t-statistic = -3.06, $p < 0.01$), indicating that

U.S. firms reduce their voluntary disclosure following the regulatory change in Singapore. This negative association becomes more pronounced in specification (2), with a treatment effect of -0.0897 (t-statistic = -6.51, $p < 0.001$) after controlling for firm characteristics and market factors.

The statistical significance of our findings is robust across both specifications, with highly significant t-statistics and p-values well below conventional thresholds. The economic magnitude is substantial, suggesting an approximately 4.7% to 9% reduction in voluntary disclosure following the regulatory change. The explanatory power of our model improves substantially from specification (1) (R-squared = 0.0007) to specification (2) (R-squared = 0.2251), indicating that firm-specific characteristics explain a considerable portion of the variation in voluntary disclosure practices. The inclusion of control variables provides a more complete model of disclosure determinants, though the absence of firm and industry-year fixed effects may limit our ability to control for time-invariant firm characteristics and industry-specific temporal trends.

The control variables in specification (2) exhibit relationships consistent with prior literature. We find that institutional ownership (0.4347, $t = 16.35$) and firm size (0.1237, $t = 25.80$) are positively associated with voluntary disclosure, aligning with previous findings that larger firms and those with greater institutional ownership tend to provide more voluntary information. The negative coefficients on book-to-market (-0.0842), stock return volatility (-0.0911), and loss indicators (-0.0791) are consistent with prior research showing that firms with higher growth opportunities and better performance engage in more voluntary disclosure. However, our results do not support H1, which predicted an increase in voluntary disclosure following the Singapore amendment. Instead, we find evidence of a substitution effect, where increased mandatory disclosure requirements in one jurisdiction may lead firms in other

markets to reduce their voluntary disclosure, possibly due to the decreased marginal benefits of additional disclosure or changes in the global information environment.

CONCLUSION

This study examines how the 2015 Singapore Securities and Futures Act Amendment affects voluntary disclosure practices in U.S. firms through corporate governance mechanisms. Specifically, we investigate whether enhanced regulatory frameworks for over-the-counter derivatives in Singapore create spillover effects that influence U.S. firms' disclosure behaviors through changes in corporate governance structures and practices. Our analysis focuses on the transmission of regulatory effects across jurisdictions and their impact on firms' information environment.

While our study does not provide direct empirical evidence, our theoretical framework suggests that the strengthened market infrastructure and reduced systemic risk following the Singapore Amendment likely influences U.S. firms' disclosure practices through several corporate governance channels. This relationship builds upon prior literature documenting the interconnectedness of global financial markets and the cross-border effects of regulatory changes (e.g., DeFond et al., 2019; Armstrong et al., 2010). The corporate governance mechanism appears to serve as a crucial intermediary through which international regulatory changes affect firms' disclosure decisions.

The theoretical implications of our analysis align with recent studies highlighting the importance of corporate governance in shaping firms' disclosure policies (Leuz and Wysocki, 2016). We posit that enhanced regulatory frameworks in major financial centers like Singapore can lead to improvements in corporate governance practices globally, which in turn influences firms' voluntary disclosure decisions. This spillover effect suggests that regulatory changes in

one jurisdiction can have far-reaching implications for market transparency and information quality worldwide.

Our findings have important implications for various stakeholders. For regulators, they highlight the need to consider the international ramifications of domestic policy changes, particularly in an increasingly interconnected global financial system. The results suggest that coordination among international regulatory bodies might be beneficial in achieving desired policy outcomes. For managers, our analysis indicates that changes in foreign regulatory environments may influence their domestic disclosure strategies through evolving corporate governance expectations. Investors should be aware that firms' information environment may be affected by regulatory changes in seemingly unrelated jurisdictions through corporate governance channels.

These findings contribute to the broader literature on the relationship between regulation, corporate governance, and voluntary disclosure (Bushman and Smith, 2001; Core et al., 2015). They extend our understanding of how regulatory changes propagate across borders and influence firm behavior through corporate governance mechanisms. The results also complement recent work on the role of corporate governance in determining firms' disclosure choices and information environment quality.

Our study has several limitations that future research could address. First, the lack of empirical testing limits our ability to make causal inferences about the relationship between the Singapore Amendment and U.S. firms' disclosure practices. Future studies could employ quasi-experimental designs to establish more definitive causal links. Second, our focus on corporate governance as the primary channel may overlook other important mechanisms through which regulatory changes affect firm behavior. Research could explore alternative channels such as product market competition or capital market pressures. Additionally, future work could examine how the effectiveness of regulatory spillovers varies with firm

characteristics, industry conditions, and country-level institutional factors.

Future research could also investigate how different components of corporate governance mediate the relationship between international regulatory changes and firm disclosure decisions. This could include examining the role of board composition, ownership structure, and executive compensation in transmitting regulatory effects across borders. Moreover, researchers could explore how the timing and magnitude of firms' disclosure responses vary with their exposure to international markets and regulatory regimes.

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Table 1

Descriptive Statistics

Variables	N	Mean	Std. Dev.	P25	Median	P75
FreqMF	14,231	0.6176	0.9021	0.0000	0.0000	1.6094
Treatment Effect	14,231	0.5950	0.4909	0.0000	1.0000	1.0000
Institutional ownership	14,231	0.5931	0.3409	0.2872	0.6918	0.8840
Firm size	14,231	6.5590	2.1195	5.0229	6.5954	8.0455
Book-to-market	14,231	0.5476	0.5701	0.2300	0.4391	0.7485
ROA	14,231	-0.0501	0.2617	-0.0340	0.0221	0.0632
Stock return	14,231	0.0057	0.4297	-0.2229	-0.0349	0.1584
Earnings volatility	14,231	0.1503	0.3093	0.0229	0.0536	0.1389
Loss	14,231	0.3238	0.4679	0.0000	0.0000	1.0000
Class action litigation risk	14,231	0.2615	0.2435	0.0842	0.1739	0.3586

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

Table 2
Pearson Correlations
Singapore Securities and Futures Act Amendment Corporate Governance

	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	0.07	0.03	-0.06	-0.07	-0.07	0.05	0.06	-0.04
FreqMF	-0.03	1.00	0.38	0.44	-0.16	0.24	-0.01	-0.19	-0.25	-0.05
Institutional ownership	0.07	0.38	1.00	0.62	-0.19	0.34	-0.03	-0.26	-0.29	-0.02
Firm size	0.03	0.44	0.62	1.00	-0.32	0.40	0.06	-0.28	-0.41	0.08
Book-to-market	-0.06	-0.16	-0.19	-0.32	1.00	0.09	-0.14	-0.10	0.02	-0.05
ROA	-0.07	0.24	0.34	0.40	0.09	1.00	0.17	-0.59	-0.61	-0.21
Stock return	-0.07	-0.01	-0.03	0.06	-0.14	0.17	1.00	-0.06	-0.14	-0.06
Earnings volatility	0.05	-0.19	-0.26	-0.28	-0.10	-0.59	-0.06	1.00	0.39	0.21
Loss	0.06	-0.25	-0.29	-0.41	0.02	-0.61	-0.14	0.39	1.00	0.25
Class action litigation risk	-0.04	-0.05	-0.02	0.08	-0.05	-0.21	-0.06	0.21	0.25	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 Singapore Securities and Futures Act Amendment on Management Forecast Frequency**

	(1)	(2)
Treatment Effect	-0.0474*** (3.06)	-0.0897*** (6.51)
Institutional ownership		0.4347*** (16.35)
Firm size		0.1237*** (25.80)
Book-to-market		-0.0842*** (8.09)
ROA		0.0847*** (3.41)
Stock return		-0.1133*** (8.51)
Earnings volatility		-0.0911*** (5.17)
Loss		-0.0791*** (4.46)
Class action litigation risk		-0.2209*** (8.52)
N	14,231	14,231
R ²	0.0007	0.2251

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