The Implementation Challenges of New Accounting Standards - Evidence from Audit Adjustments

ABSTRACT

We examine whether the adoption of new accounting standards creates implementation challenges by analyzing disclosed audit adjustments. Using material variance announcements from Singapore-listed firms (2010-2024), we find substantial heterogeneity in implementation outcomes. Following IFRS 16 (Leases) adoption, firms disclosing lease-related audit adjustments more than tripled. We employ difference-in-differences designs comparing firms most exposed to standard implementation challenges with less-exposed firms. IFRS 15 (Revenue from Contracts with Customers) generated the largest differential treatment effect, with affected industries experiencing 6.7% greater adjustment increases. IFRS 9 (Financial Instruments) also created significant challenges, while IFRS 13 (Fair Value Measurement) showed no significant change. These patterns demonstrate that standards introducing new recognition and measurement requirements generate implementation errors, while those consolidating existing practice do not. Our findings reveal that transition periods for recognition-based standards represent systematic audit risk factors requiring expanded procedures and extended support.

Keywords: Audit adjustments; Audit; IFRS implementation; Accounting standards

I. INTRODUCTION

When the International Accounting Standards Board (IASB) issues a new standard, extensive field testing, comment periods, and transition guidance aim to ensure smooth implementation. Yet despite these efforts, many firms discover material reporting errors only during their annual audit. These audit adjustments directly reveal implementation failures: preparers' inability to correctly apply new standards in the first instance. Understanding which standards create such failures, and why, provides crucial feedback for standard-setters' post-implementation reviews and helps auditors identify transition-period risks.

Prior research documents the costs of new accounting standards indirectly through audit fee increases (De George et al. 2013) and accounting staff expansions (Huang et al. 2025). These studies establish that standards impose substantial implementation burdens, but cannot reveal whether firms successfully navigate the complexity or make material errors requiring correction. We provide the first large-sample evidence of implementation failures by examining publicly disclosed audit adjustments. These adjustments force corrections to key line items and highlight the challenges preparers face when navigating complex new accounting rules.

A critical challenge in studying audit adjustments has been data availability. The audit adjustment process typically remains confidential, visible only through proprietary data that cannot be linked to firms' other public information (Lennox et al. 2016; Choudhary et al. 2022). Singapore offers a unique exception. Stock exchange rules mandate that listed companies immediately disclose any "material variances" between preliminary unaudited results and final audited statements, with detailed line-item reconciliations and explanations. These public disclosures transform private audit negotiations into observable data.

We exploit Singapore's disclosure requirement to investigate whether five major International Financial Reporting Standards created measurable implementation challenges: IFRS 10 (Consolidated Financial Statements, 2014), IFRS 13 (Fair Value Measurement, 2013), IFRS 9 (Financial Instruments, 2018), IFRS 15 (Revenue from Contracts with Customers, 2018), and IFRS 16 (Leases, 2019). We construct our dataset using web-scraping and large language model (LLM) technology to systematically collect and extract data from material variance announcements spanning 2010-2024. This yields 13,791 individual line-item adjustments across 790 firm-year observations.

We first provide novel descriptive evidence on the audit adjustment process. Overall, 10.5% of firm-years in our sample disclose material audit adjustments, with rates varying from 2.9% in 2010 to 15.9% in 2019. The patterns revealed in our graphical analyses show distinct implementation trajectories across the five standards. For example, IFRS 16 exhibits an immediate spike in adjustments that partially subsides over time (consistent with acute adoption-year challenges and subsequent learning). The economic magnitude of these implementation failures is substantial. Singapore's regulator found that audit adjustments averaged S$63 million per listed company annually, with 85% representing factual errors rather than judgment differences (Suwardy and Lim 2022). Our findings reveal that major accounting standard changes meaningfully contribute to this error rate.

Our central finding is that not all accounting standards create implementation problems. Using difference-in-differences designs that compare firms most exposed to each standard with less-exposed firms, we find variation in implementation outcomes. IFRS 16 shows the most severe difficulties: firms in retail, machinery manufacturing, and utilities experienced a 5.3 percentage point greater increase in lease adjustment likelihood compared to other industries. IFRS 15 also created substantial challenges, with affected industries experiencing a 6.7 percentage point greater increase in revenue adjustment rates. In contrast,

IFRS 13 shows no detectable increase in adjustment rates despite being conceptually complex.

The heterogeneity of our findings suggests that implementation failures arise primarily when standards introduce fundamentally new recognition and measurement requirements—IFRS 16's lease capitalization, IFRS 15's five-step revenue model, and IFRS 9's expected credit loss framework all demanded judgments in domains where firms lacked established processes. In contrast, IFRS 13 largely consolidated and standardized existing fair value guidance from IAS 39, IAS 40, and other standards without introducing new measurement requirements. Firms were already measuring fair value; IFRS 13 provided a unified framework and enhanced disclosures. The absence of implementation errors suggests that codification of existing practice, even when complex, imposes minimal incremental burden compared to introducing entirely new accounting approaches.

Beyond variation across standards, our findings reveal that financial distress compounds implementation difficulties. Loss-making firms show significantly higher adjustment rates across all specifications, with adjustment likelihood approximately 2-4 percentage points higher than profitable firms. This pattern suggests that resource constraints and management distraction during difficult periods compromise accounting system effectiveness and implementation capacity. For some standards (IFRS 9) and model specifications, Big 4 auditors' clients show lower adjustment rates.

This study makes three primary contributions. First, we introduce audit adjustments as a direct measure of accounting standard implementation friction as adjustments capture the inability to correctly apply new standards. Second, we provide the first causal evidence linking specific accounting standards to reporting difficulties, documenting which standards create problems and which do not. Third, we demonstrate that the nature of the accounting

change matters more than conceptual complexity: introducing new recognition and measurement requirements generates errors, while consolidating existing practice does not.

Our findings have direct implications for standard-setters conducting post-implementation reviews. The IASB's (2025) post-implementation review of IFRS 16 Leases specifically seeks evidence on whether implementation challenges have substantial consequences on financial reporting quality (IASB 2025). Stakeholders report higher-than-expected ongoing costs for lease liability remeasurement (IASB 2025), but systematic large-sample evidence on the magnitude and persistence of these difficulties is lacking. We provide that evidence: IFRS 16 adjustments increased from 1.20% to 5.70% post-adoption ($p<0.01$) and remain elevated five years later. The temporal patterns we document—immediate spikes for IFRS 16 versus delayed emergence for IFRS 15—suggest that implementation support needs vary by standard complexity and should extend well beyond the adoption year.

II. INSTITUTIONAL BACKGROUND AND LITERATURE REVIEW

The Singapore Disclosure Requirement

Singapore offers a unique window into the audit adjustment process through mandatory public disclosure requirements. Under SGX Listing Rule 705(1), listed companies must announce their full-year financial results within 60 days of year-end. Given this tight deadline, most firms release unaudited figures, followed by their audited annual report within four months of year end (Rule 707).[1] Furthermore, if the audit identifies any "material variances" from the disclosed unaudited results, the company must immediately disclose

[1] Singapore's financial sector operates under unique regulatory requirements. Major banks and financial institutions consistently release audited (rather than unaudited) annual results within the 60-day deadline, eliminating the possibility of material variances. This institutional feature means audit adjustments are structurally impossible for financial firms, making them unsuitable for studying IFRS 9 implementation effects.

these differences to the market, providing a detailed reconciliation and explanation for each adjustment (Rule 704(6)). Accordingly, the subsequent adjustments reveal genuine errors, judgment differences, or misapplications of accounting rules. A study sponsored by Singapore's Accounting and Corporate Regulatory Authority (Suwardy and Lim 2022) utilizing proprietary data found 85% of adjustments were for factual errors or misclassifications rather than judgment differences.

The Audit Adjustment Literature

Audit adjustments are the primary mechanism through which auditors directly improve financial reporting quality. Research analyzing confidential audit workpapers establishes that adjustments are a pervasive feature of the audit process and are typically asymmetric, with downward (earnings-reducing) adjustments being more frequent and larger in magnitude than upward adjustments (Kinney and Martin 1994; Lennox et al. 2016).

Recent access to proprietary regulatory and audit firm data from the U.S., China, Korea, and Singapore has allowed researchers to examine how adjustments are shaped by institutional pressures and incentives. In some contexts, auditors may acquiesce to client pressure. Studies using Korean and Singaporean data find that auditors are less likely to require downward adjustments for firms just beating earnings benchmarks (Allee et al. 2024; Lim et al. 2023). The consequences of these private negotiations are significant, as the decision to waive proposed adjustments is associated with future material misstatements and higher subsequent audit fees (Choudhary et al. 2022). The adjustment process is also sensitive to regulatory shocks such as mandatory audit partner rotation (Lennox et al. 2014) and internal control audit requirements (Lennox and Wu 2022), as well as to auditor characteristics including partner equity ownership (Lennox et al. 2020).

Much of the recent audit adjustment literature relies on proprietary data (Allee et al., 2024; Choudhary et al., 2022; Lennox et al., 2014; Lennox et al., 2020; Lennox and Wu,

2022), which provide observable adjustments to earnings, total assets, and shareholders' equity but lack information on gradual, line-item adjustments. In contrast, we exploit the Singapore setting, where public adjustment disclosures include detailed information on the specific line-items adjusted. This allows us to examine, at the line-item level, whether the adoption of five major IFRS standards led to more material adjustments. The approach complements prior work on client and auditor characteristics by documenting how regulatory complexity affects audit outcomes, providing guidance for auditors' risk assessment during transition periods and informing standard-setters about which accounting changes create the greatest implementation challenges.

III. HYPOTHESIS DEVELOPMENT

Prior research documents substantial implementation costs following major accounting standard adoptions. De George et al. (2013) find that IFRS adoption in Australia led to abnormal audit fee increases exceeding 8%. Huang et al. (2025) show that firms significantly expanded accounting staff during ASC 606 and ASC 842 implementation, with costs exceeding $2 million for the average firm. Bradbury and Scott (2021) find that regulator enforcement actions around IFRS adoption focused on presentation and disclosure issues, suggesting that actual implementation errors may differ from the complexity concerns auditors anticipated. However, these indirect measures and enforcement actions cannot reveal the full spectrum of implementation difficulties or whether firms make material errors requiring audit correction.

Complex accounting standards create reporting friction through several mechanisms. They require judgments in areas where firms lack experience and established processes (Donelson et al. 2012), and principles-based standards increase the scope for disagreement between preparers and auditors about appropriate application (Kadous and Mercer 2016).

Implementation of regulatory changes often reveals weaknesses in existing systems and internal controls that were adequate under previous standards are insufficient for new requirements (Hoitash et al. 2008).

However, we propose that the type of accounting change matters more than conceptual complexity in determining implementation difficulties. Standards that introduce fundamentally new recognition or measurement requirements force firms to make judgments in domains where they lack experience and established processes. Firms must develop new systems, train personnel, and establish procedures for applying unfamiliar rules—a process prone to error. When firms must recognize previously off-balance-sheet items (IFRS 16 leases), apply entirely new measurement models (IFRS 9 expected credit losses), or disaggregate transactions in novel ways (IFRS 15 performance obligations), even small errors in individual judgments can compound into material misstatements.

In contrast, standards that consolidate or clarify existing practice should create minimal incremental implementation burden. When firms already perform the underlying measurements and judgments—merely needing to apply consistent frameworks and enhanced disclosures—the risk of material error is substantially lower. For example, IFRS 13 consolidated existing fair value guidance from IAS 39 and IAS 40, without introducing new measurement requirements. Firms were already measuring fair value; IFRS 13 provided a unified framework. Based on these considerations, we predict:

H1: *The mandatory adoption of major new IFRS standards leads to an increase in material audit adjustments, with the magnitude of increase varying by the type of accounting change introduced.*

We expect heterogeneous effects across standards. Specifically, standards introducing new recognition and measurement requirements (IFRS 9, 15, 16) should show significant

increases in adjustments, while standards consolidating existing practice (IFRS 13) should show minimal effects. IFRS 10 represents an intermediate case, as consolidation boundary changes may create pervasive challenges however, they may only affect a small number of firms.

Beyond the simple incidence of adjustments, we expect the breadth of errors to increase when standards introduce interconnected requirements. New standards often have cascading effects across multiple accounts—for instance, IFRS 16 affects both assets (right-of-use) and liabilities (lease obligations) while also impacting depreciation and interest expense. This interconnectedness means that implementation errors rarely remain isolated:

H2: *The number of distinct accounts requiring adjustment increases following standard adoption.*

IV. RESEARCH DESIGN

Sample and Data

Our initial sample comprises all SGX-listed firms from 2009-2024. We employ a web-scraping approach using Python to systematically collect announcements from the SGX platform, searching for disclosures categorized as "ANNC17" containing keywords "unaudited," "audited," and variance-related terms. We collected 1,117 PDF documents.

Given the unstructured nature of these PDFs, we employ large language model (LLM) technology to extract structured data. We develop a detailed extraction protocol that directs the LLM to identify and capture: (1) company-level metadata including company name, registration number, fiscal year-end date, and announcement date; (2) detailed adjustment information for each line item including the financial statement affected, account classification, originally announced amounts, final audited amounts, variance amounts, and

explanatory notes. Appendix B displays an example audit adjustment disclosure, and Appendix C provides details of the LLM technical specifications.

From 1,072 successfully processed firm-years (96.0% success rate), we obtain 13,791 individual line-item adjustments. Each adjustment represents a specific account that required modification during the audit process, with detailed explanations provided in the accompanying disclosure notes. After removing misclassified announcements (21 observations), duplicate announcements (31 observations), and matching to Compustat Global identifiers (losing 112 unmatched firm-year observations), we have 908 audit adjustment announcements. Merging with Compustat yields a final sample of 9,995 firm-year observations, of which 794 (8.6%) announced material audit adjustments.

We apply three sample restrictions to create our final dataset. First, we exclude financial firms (SIC 6000-6799), removing 1,737 observations, as Singapore's financial institutions are required to release audited (rather than unaudited) annual results within the 60-day deadline, therefore it is not possible for these firms to disclose audit adjustments. Second, we drop fiscal year 2009, removing 91 observations, as after matching to Compustat data, no adjustment observations remained. Third, we require non-missing data for all control variables used in our analysis—total assets, net income, total liabilities, and auditor identity—removing 616 observations. These restrictions yield a final sample of 7,524 firm-year observations spanning 2010-2024, with 790 (10.5%) announced material audit adjustments.

Empirical Analysis

Pre-Post Analysis

We begin with a pre-post analysis to establish whether audit adjustments increased following the mandatory adoption of IFRS standards. This analysis tests *H1* and *H2* by examining

whether adjustment rates rose in the post-adoption period across all firms. Our specification is:

$$ADJUST\_OUTCOME = \beta_0 + \beta_1 POST + \beta_2 \log\_assets + \beta_3 big4 + \beta_4 leverage + \beta_5 loss + \beta_6 roa + \mu_i + \varepsilon \quad (1)$$

Our primary dependent variables (*ADJUST_OUTCOME*) capture two dimensions of audit adjustments for firm *i* in year *t*: (1) *Incidence* - binary indicators for whether a firm announced any adjustments for specific IFRS standards; (2) *Breadth* - count variables measuring the number of line items adjusted by standard. We identify IFRS-related adjustments using keyword-matching algorithms applied to adjustment descriptions. For each standard, we compile a list of accounting terms, standard references, and related accounting concepts that would indicate an adjustment is related to a particular standard. These patterns capture both direct references to the standards e.g., "IFRS 16" and indirect indicators e.g., "right-of-use asset" for leases (complete keyword lists are provided in Appendix D).

$POST_t$ equals one for all years following mandatory adoption of an IFRS standard, with timing determined by each firm's fiscal year-end to properly identify when standards first apply. The coefficient β_1 captures the average change in adjustments following standard adoption. A positive and significant β_1 indicates that adjustment incidence or breadth increased post-adoption, consistent with *H1* and *H2*. We estimate separate regressions for each of the five IFRS standards examined: IFRS 10 (effective 2014), IFRS 13 (effective 2013), IFRS 9 (effective 2018), IFRS 15 (effective 2018), and IFRS 16 (effective 2019).[2]

[2] Singapore Financial Reporting Standards (SFRS) are substantially converged with International Financial Reporting Standards. Since 2018, Singapore-listed companies can apply SFRS(I), which is identical to IFRS as issued by the IASB.

Control variables include *log_assets*, the natural logarithm of total assets, which we use to test differential effects of firm size; *big4*, an indicator for Big 4 auditor engagement, which we use to test the moderating role of auditor expertise. Additional firm characteristics include *leverage*, measured as total liabilities divided by total assets; *loss*, an indicator for negative net income; and *roa*, return on assets. All models include firm fixed effects μ_i to absorb time-invariant firm characteristics, with standard errors clustered at the firm level.

Difference-in-Differences Analysis

While the pre-post analysis establishes whether adjustments increased on average, it cannot isolate the causal effect of specific standards from concurrent trends or confounding events. We therefore employ a difference-in-differences (DiD) design that compares changes in adjustments for firms most exposed to each standard, with changes for less-exposed firms. This approach tests whether implementation challenges were concentrated among firms most affected by each standard's substantive accounting changes.

Our DiD specification is:

$$ADJUST\_OUTCOME = \beta_0 + \beta_1 POST + \beta_2 TREATED + \beta_3 TREATED * POST + \beta_4 \log\_assets + \beta_5 big4 + \beta_6 leverage + \beta_7 loss + \beta_8 roa + \mu_i + \varepsilon \quad (2)$$

The coefficient of interest, β_3, captures the differential change in adjustments for treated firms relative to control firms following standard adoption. A positive and significant β_3 indicates that firms most exposed to a standard experienced disproportionately more adjustments, consistent with implementation challenges concentrated in the treatment group. Because firm fixed effects absorb the time-invariant *TREATED* indicator, β_2 is not separately identified. We include the same set of control variables as specified in Model (1).

Treatment Group Definitions

We employ standard-specific treatment definitions tailored to each standard's economic substance. For standards affecting specific industries (IFRS 15, 16), we use industry-based classifications. For standards affecting firms based on balance sheet composition (IFRS 9, 10, 13), we identify treatment as firms in the top tercile of the relevant intensity measure, measured in the year immediately preceding adoption. Treatment status is time-invariant—determined by pre-adoption characteristics and held constant across all years.

IFRS 16, Leases

Treatment comprises industries with significant operating lease usage: Retail (SIC 5200-5999), Machinery manufacturing (SIC 3500-3599), and Utilities (SIC 4900-4999). IFRS 16's requirement to capitalize nearly all operating leases represents a fundamental change for these sectors.

IFRS 15, Revenue from Contracts with Customers

Treatment comprises industries where the five-step model represents a significant departure from previous practice: Construction (SIC 1500-1799), Chemicals (SIC 2800-2899), and Utilities (SIC 4900-4999). These industries face complex implementation challenges in identifying performance obligations and allocating transaction prices.

IFRS 9, Financial Instruments

Singapore's financial institutions must release audited results within 60 days, eliminating the possibility of material variance announcements. We therefore identify treatment among non-financial firms in the top tercile of receivables intensity (receivables/total assets), measured in 2017. Higher receivables intensity captures greater exposure to IFRS 9's expected credit loss model for trade receivables.

IFRS 10, Consolidated Financial Statements

Treatment comprises firms in the top tercile of goodwill intensity (goodwill/total assets), measured in 2013. Goodwill intensity captures firms with more complex group structures from prior business combinations, where IFRS 10's new control-based consolidation model creates greater implementation challenges

IFRS 13, Fair Value Measurement

Treatment comprises firms in the top tercile of intangible asset intensity (intangibles/total assets), measured in 2012. Firms with significant intangibles face greater exposure to IFRS 13's measurement hierarchy and valuation requirements.

V. RESULTS

Descriptive Statistics

Table 1 and Figure 1 present the annual distribution of audit adjustments from 2010 to 2024. Overall, 790 firm-years (10.5% of our sample) disclosed material variances between unaudited and audited statements. Adjustment rates increased from 2.7% in 2010 to a peak of 15.0% in 2019, before moderating to 12.2% in 2024. The 2019 spike coincides with IFRS 16 adoption, which alone generated 36 adjustment announcements that year. The sustained elevation from 2018 onward reflects concurrent implementation of IFRS 9, IFRS 15, and IFRS 16.

Figures 2-6 reveal heterogeneous implementation experiences across standards. IFRS 16 (Figure 2) shows a dramatic spike in 2019 (7.2% of firms), followed by partial decline—consistent with acute adoption-year challenges and subsequent learning. IFRS 15 (Figure 3) shows more gradual increases distributed across the transition period. IFRS 9 (Figure 4) exhibits a delayed peak three years post-adoption, suggesting complexity in implementing expected credit loss models. In sharp contrast, IFRS 13 (Figure 5) shows no discernible

increase, while IFRS 10 (Figure 6) demonstrates persistent upward trends rather than a spike-and-decline pattern.

Table 2 confirms these visual patterns with statistical tests. IFRS 16, 15, 9, and 10 show significant increases: adjustment rates rose by 4.50%, 3.30%, 2.27%, and 4.43% respectively (all $p<0.001$). IFRS 13 increased only 0.40 percentage points (not significant), suggesting fair value measurement guidance consolidated existing practice without creating implementation friction. These results provide preliminary support for H1.

Table 3 compares firms with and without adjustments. Adjustment firms are significantly smaller (mean log_assets 4.511 vs. 5.328). They are also substantially less profitable (mean ROA: -22.4% vs. -8.1%) and more likely to report losses (62.8% vs. 32.3%). Capital structure shows no meaningful difference between groups. Big 4 clients are significantly less likely to announce adjustments (31.7% of adjustment firms vs. 57.4% of non-adjustment firms), suggesting Big 4 auditors either help clients avoid implementation errors or detect and correct them before preliminary announcements, thereby preventing material variances.

Pre-Post Analysis

Table 4 presents results from Model (1), examining whether audit adjustments increased following the adoption of new accounting standards. Panel A examines adjustment likelihood, while Panel B examines the number of line items adjusted.

For four of the five standards, we find that audit adjustments increased following the implementation of the standard, consistent with *H1*. The regression for IFRS 16 demonstrates the strongest effects: a 4.6 percentage point increase in lease adjustment likelihood ($p<0.01$) and 0.191 additional adjustments per firm ($p<0.01$). IFRS 15, IFRS 10, and IFRS 9 show similarly significant increases ranging from 2.1 to 3.7 percentage points in Panel A and 0.046 to 0.139 additional line-item adjustments in Panel B (all $p<0.01$).

In contrast, IFRS 13 shows no significant increase in either adjustment likelihood or breadth. This null result indicates that consolidating existing fair value guidance did not create implementation challenges requiring audit correction.

This heterogeneity supports our theoretical prediction. Standards introducing new recognition and measurement requirements (IFRS 9, 15, 16) or consolidation boundaries (IFRS 10) created substantial implementation friction, while standards consolidating existing practice (IFRS 13) did not.

Control variables reveal additional patterns. Loss-making firms consistently show significantly higher adjustment rates across all standards, indicating that financial distress compounds implementation difficulties. Big 4 auditor engagement shows negative coefficients for IFRS 9 ($p<0.05$) and IFRS 15 ($p<0.10$) in Panel A, with similar patterns in Panel B. Big 4 expertise helps clients avoid implementation errors, particularly for complex standards. Firm size shows mixed results, with larger firms experiencing fewer IFRS 16 adjustments but more line-item adjustments for IFRS 9 and IFRS 15, possibly reflecting operational complexity rather than implementation difficulties.

Difference-in-Differences Analysis

Table 5 presents DiD results comparing adjustment patterns for firms most exposed to each standard (treated) versus less-exposed firms (control). This design provides stronger causal evidence by isolating differential impacts on affected firms while controlling for time trends.

For three of the standards, the regression results show significant treatment effects. Regarding IFRS 16, treated firms (retail, machinery, utilities with high lease intensity) experienced a 5.3 percentage point greater increase in lease adjustment likelihood ($p<0.05$) and 0.228 additional adjustments ($p<0.05$) compared to control firms. Combined with the 3.7 percentage point general increase (*POST*), treated firms faced approximately 9 percentage

points higher adjustment rates—economically substantial evidence that operating lease capitalization created severe implementation challenges for affected industries.

The regressions for IFRS 15 show similarly strong differential effects. Treated firms (construction, chemicals, utilities) experienced a 6.7 percentage point greater increase in revenue adjustment likelihood ($p<0.05$) and 0.227 additional adjustments ($p<0.10$)—approximately doubling baseline adjustment rates for these industries facing complex performance obligation identification. IFRS 9 treatment effects are smaller but significant: firms in the top tercile of receivables intensity experienced 2.3 percentage points greater increases in adjustment likelihood ($p<0.05$) and 0.092 additional adjustments ($p<0.01$).

In contrast, the regressions for IFRS 10 and IFRS 13 show insignificant interaction coefficients. Regarding IFRS 10, firms with high goodwill intensity did not experience differentially greater consolidation adjustments, suggesting either our treatment definition inadequately captured true exposure or implementation challenges were pervasive across all firms. IFRS 13 shows no differential effects even for firms with high intangible intensity, reinforcing that consolidating existing fair value guidance created minimal implementation friction.

Importantly, *POST* coefficients remain positive and significant for IFRS 10, 9, 15, and 16, indicating even control firms experienced implementation difficulties. Demonstrating that all firms struggled but affected industries faced disproportionate challenges.

Control variables largely mirror Table 4 patterns. Loss-making firms consistently show 2-4 percentage points higher adjustment rates across specifications. Big 4 auditor effects appear primarily for IFRS 9, with negative coefficients in both panels. However, Big 4 effects are not consistently significant across other standards. Firm size effects remain mixed, potentially reflecting offsetting forces of greater resources versus operational complexity.

The pattern of significant treatment effects for IFRS 16, 15, and 9—but not IFRS 13 or 10—provides support for our hypothesis that standards introducing new recognition and measurement requirements create concentrated implementation challenges among affected firms. The economic magnitude is substantial, treated firms under IFRS 16 experienced nearly a tenfold increase in adjustment rates relative to controls.

VI. CONCLUSION

This study demonstrates that new accounting standards create heterogeneous implementation outcomes depending on the type of accounting change introduced. Using audit adjustment data from Singapore Exchange-listed firms (2010-2024), we document differences in the rate of audit adjustments required across five major IFRS adoptions. Standards introducing new recognition and measurement requirements—IFRS 16, IFRS 15, IFRS 9, and IFRS 10—generated significant increases in audit adjustments, with IFRS 16 producing the most dramatic impact (average adjustment rates rising from 1.20% pre-adoption to 5.70% post-adoption). In contrast, IFRS 13 (Fair Value Measurement) showed no significant increase despite its conceptual complexity, revealing that consolidating existing practice imposes minimal implementation burden compared to introducing new recognition frameworks.

These findings carry direct implications for audit practice. The predictable spikes in adjustment rates surrounding new standard implementations—particularly for recognition-based changes—indicate that auditors should systematically expand substantive procedures around newly recognized items and increase specialist involvement during transition periods. The persistence of elevated adjustment rates years after adoption (notably for IFRS 15 and 16) demonstrates that implementation challenges extend well beyond the initial adoption year, requiring sustained professional skepticism. The contrast between recognition-based standards and codification standards provides a framework for risk assessment: future

adoptions that merely consolidate existing practice warrant minimal incremental audit attention, while those introducing new recognition requirements demand substantially expanded procedures.

For standard-setters, our results provide timely empirical evidence for ongoing post-implementation reviews. The IASB's (2025) review of IFRS 16 specifically seeks evidence on whether the ongoing costs of lease liability measurement requirements align with initial expectations. Our findings suggest they may not. IFRS 16 adjustments increased by 4.50 percentage points and remain elevated five years post-implementation, indicating persistent rather than transitional difficulties. The difference-in-differences analysis confirms these effects are concentrated among lease-intensive industries, supporting a causal interpretation. More broadly, the heterogeneity in implementation outcomes across standards demonstrates that not all accounting changes impose equal costs.

Our study has limitations. Singapore's materiality threshold for disclosure means we capture only significant variances, potentially understating total implementation difficulties. The exclusion of financial institutions from disclosing audit adjustments limits our ability to examine IFRS 9’s effects on its most affected population. Our industry-based treatment definitions, while economically motivated, may not perfectly capture all exposed firms. The primarily descriptive nature of our pre-post analyses limits strong causal claims, though the precise timing of adjustment spikes coinciding with adoption dates and the differential patterns across industries strengthen our interpretation.

USE OF GENERATIVE AI

During the preparation of this work, the authors used Claude in order to automate data collection as described in the Research Design section and Appendix C and refine writing. After using this tool/service, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

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APPENDICES

Appendix A: IFRS Standards Examined

Standard	Effective Date	Key Changes	Type of Change
IFRS 9 *Financial Instruments*	January 2018	Replaced IAS 39's rules-based approach with significant changes affecting both financial and non-financial companies. While banks grappled with expected credit loss (ECL) models, non-financial companies faced equally challenging implementation issues around the classification and measurement of financial assets. The standard eliminated the available-for-sale and held-to-maturity categories, introducing instead a business model test and contractual cash flow characteristics test for classifying financial assets as amortized cost, fair value through other comprehensive income (FVOCI), or fair value through profit or loss (FVTPL). For non-financial companies with significant investments, trade receivables, or complex financial instruments, these changes required reassessing entire portfolios of	New measurement model

		financial assets, implementing new impairment models for trade receivables under the simplified ECL approach, and managing increased volatility in profit or loss from mandatory FVTPL classification. The removal of the cost exemption for unquoted equity investments particularly affected companies with strategic investments, now requiring fair value measurement even for illiquid holdings.	
IFRS 10 *Consolidated Financial Statements*	January 2014	IFRS 10 introduced a single control-based consolidation model, replacing consolidation requirements in IAS 27 Consolidated and Separate Financial Statements and SIC-12 (IAS 27 was renamed to address only separate financial statements). The new control definition—based on power, exposure to variable returns, and ability to affect those returns—fundamentally changed consolidation boundaries. Companies needed to consolidate previously unconsolidated structured entities or deconsolidate entities no longer meeting control criteria. These boundary changes created implementation challenges: integrating incompatible	Boundary change

		accounting systems, managing complex inter-company eliminations, and restating comparative figures. The shift from bright-line tests to principles-based assessment required significant judgment for structured entities and joint arrangements, leading to errors in consolidated financial statement preparation.	
IFRS 13 *Fair Value Measurement*	January 2013	IFRS 13 established a single framework for fair value measurement, consolidating guidance previously scattered across multiple standards while introducing enhanced disclosure requirements and a formalized three-level fair value hierarchy. Implementation challenges centered on valuation technique selection for Level 3 measurements, developing unobservable inputs, and correctly classifying measurements within the fair value hierarchy. The standard's requirement to maximize observable inputs while ensuring measurements reflect market participant assumptions created tension in practice, especially for illiquid assets requiring significant judgment.	Codification with enhanced disclosure requirements

IFRS 15 *Revenue from Contracts with Customers*	January 2018	IFRS 15 introduced a five-step model replacing multiple previous standards. The International Accounting Standards Board's (2024) post-implementation review highlighted stakeholders persistent challenges in identifying performance obligations, determining transaction prices with variable consideration, and allocating revenue to distinct obligations. The construction sector particularly struggled with the transition from percentage-of-completion to the new framework. The standard's emphasis on control transfer rather than risk and reward passage required reconsidering long-established revenue recognition practices.	New recognition framework
IFRS 16 *Leases*	January 2019	IFRS 16, required capitalizing nearly all operating leases—a fundamental change affecting balance sheet presentation. Implementation challenges included identifying embedded leases in service contracts, determining appropriate discount rates in the absence of observable market rates, and managing the operational complexity of tracking thousands of lease contracts. The IASB's 2025 Request for Information confirmed these	New recognition framework

challenges, particularly the costs and complexity of determining discount rates, are a primary focus of its post-implementation review. Suwardy and Lim's (2022) review found that 40% of Singapore companies made errors in their initial IFRS 16 calculations, particularly around lease term determination and variable payment treatment. This substantially increased the recognition and measurement issues facing firms with leases.

Appendix B: Example of Data Extraction from Material Variance Announcements

Panel A: Excerpt from Chaswood Resources Holdings Ltd's Material Variance Announcement.

CHASWOOD RESOURCES HOLDINGS LTD.
(Company Registration No. 200401894D)
(Incorporated in the Republic of Singapore)

Consolidated Statement of Comprehensive Income

	Group			
	FY2018 (Unaudited) RM'000	FY2018 (Audited) RM'000	Variance RM'000	Notes
Revenue	88,537	3,603	(84,934)	N1
Cost of sales	(28,616)	(1,508)	27,108	N1
Gross profit/Gross margin	59,921	2,095	(57,826)	
Other Items of Income				
Interest income	48	-	(48)	N1
Other gains	381	148	(233)	N1
Other Items of Expense				
Marketing and distribution costs	(3,747)	(22)	3,725	N1
Administrative expenses	(59,115)	(3,418)	55,697	N1
Finance costs	(3,368)	-	3,368	N1
Other losses	(548)	-	548	N1
Share of profit/(loss) of Associate	4	-	(4)	N1
Other expenses	(1,187)	(125)	1,062	N1
Loss before taxation	(7,611)	(1,322)	6,289	N1
Income tax expense	(283)	(190)	93	N1
Loss after taxation	(7,894)	(1,512)	6,382	N1
Discontinued operations				
Loss for the year from discontinued operations	-	(8,467)	(8,467)	N1
Total loss for the year	(7,894)	(9,979)	(2,085)	N2

Panel A shows an excerpt from Chaswood Resources Holdings Ltd.'s material variance announcement for fiscal year 2018. The company reports differences between unaudited figures (announced within 60 days of year-end) and final audited figures in accordance with SGX Listing Rule 704(6). The variance column shows adjustments identified during the audit process, with note references (N1, N2) linking to detailed explanations.

Panel B: Excerpt from the LLM data extraction process summarizing the Chaswood Resources Holdings Ltd's Material Variance Announcement.

1	filename	adjustment_i	statement_	line_item_original	announced_value	audited_value	variance_amount	note_refere
3037	CHASWOOD_RESOURCES_HOLDINGS_LTD._2019_9H1R	ADJ001	Income Sta	Revenue	88537	3603	-84934	N1
3038	CHASWOOD_RESOURCES_HOLDINGS_LTD._2019_9H1R	ADJ002	Income Sta	Cost of sales	-28616	-1508	27108	N1
3039	CHASWOOD_RESOURCES_HOLDINGS_LTD._2019_9H1R	ADJ003	Income Sta	Interest income	48	0	-48	N1
3040	CHASWOOD_RESOURCES_HOLDINGS_LTD._2019_9H1R	ADJ004	Income Sta	Other gains	381	148	-233	N1
3041	CHASWOOD_RESOURCES_HOLDINGS_LTD._2019_9H1R	ADJ005	Income Sta	Marketing and distributi	-3747	-22	3725	N1
3042	CHASWOOD_RESOURCES_HOLDINGS_LTD._2019_9H1R	ADJ006	Income Sta	Administrative expense	-59115	-3418	55697	N1
3043	CHASWOOD_RESOURCES_HOLDINGS_LTD._2019_9H1R	ADJ007	Income Sta	Finance costs	-3368	0	3368	N1
3044	CHASWOOD_RESOURCES_HOLDINGS_LTD._2019_9H1R	ADJ008	Income Sta	Other losses	-548	0	548	N1
3045	CHASWOOD_RESOURCES_HOLDINGS_LTD._2019_9H1R	ADJ009	Income Sta	Share of profit/(loss) of	4	0	-4	N1
3046	CHASWOOD_RESOURCES_HOLDINGS_LTD._2019_9H1R	ADJ010	Income Sta	Other expenses	-1187	-125	1062	N1
3047	CHASWOOD_RESOURCES_HOLDINGS_LTD._2019_9H1R	ADJ011	Income Sta	Income tax expense	-283	-190	93	N1
3048	CHASWOOD_RESOURCES_HOLDINGS_LTD._2019_9H1R	ADJ012	Income Sta	Loss for the year from d	0	-8467	-8467	N1
3049	CHASWOOD_RESOURCES_HOLDINGS_LTD._2019_9H1R	ADJ013	Income Sta	Total loss for the year	-7894	-9979	-2085	N2

Panel B shows the structured database created by our LLM extraction process. Each line item from the variance table becomes a separate observation with standardized fields including the adjustment ID, financial statement type, line item description, announced value, audited value, variance amount, and note reference. The LLM successfully parses the unstructured PDF format, handling various formatting challenges. In additional tests, authors validated a random sub-sample of LLM data extractions against the original .pdf to ensure accuracy. Error rates were below 5% on a line-item basis.

Appendix C: LLM Technical Specifications and Prompt

We employ Claude Sonnet 4 (model version: claude-sonnet-4-20250514) via the Anthropic API for all document processing. The model parameters are configured as follows: Temperature: 0 (deterministic outputs for consistency), maximum tokens: 8,000, retry attempts: 3 per document (to handle potential API timeouts).

The following prompt was provided to the LLM for each PDF document:

“EXTRACTION_PROMPT = """# Enhanced Data Collection Instructions for Singapore Material Variance Announcements

Extract data from this Singapore Exchange (SGX) announcement where companies disclose material variances between their preliminary unaudited and final audited financial statements (Rule 704 disclosures).

CRITICAL INSTRUCTIONS:

1. Extract EVERY SINGLE ROW from ALL variance tables - do not skip any line items
2. Look for ALL tables showing "Unaudited", "Reclassification/Adjustment", and "Audited" columns
3. Include ALL cash flow statement items, balance sheet items, and any other adjustments
4. Each row in a variance table = one adjustment entry in your output
5. If a table has 10 rows, you must output 10 adjustment entries

Step-by-Step Instructions

Step 1: Identify ALL Variance Tables

Scan the ENTIRE document for:

- Tables with columns like "Unaudited 2024", "Reclassification 2024", "Audited 2024"

- Tables showing variances between announced and audited figures

- Sections titled "Consolidated statement of financial position", "Consolidated statement of cash flows", etc.

- ANY reconciliation or adjustment tables

Step 2: Extract Company Metadata

1. Company name and registration number

2. Fiscal year end date

3. Announcement date (usually at bottom)

4. Currency and whether amounts are in thousands/millions

5. Any notes about impact on total assets or net income

Step 3: Extract EVERY Adjustment (MOST IMPORTANT)

For EACH LINE ITEM in EVERY variance table:

1. **Line item name** - Exact text from the table

2. **Unaudited amount** - Original announced value

3. **Reclassification/Adjustment amount** - The variance/change

4. **Audited amount** - Final audited value

5. **Note reference** - e.g., BS1, CF1, CF2, etc.

6. **Explanation** - Match note reference to explanation at bottom

CRITICAL: Count the rows in each table. If there are 11 rows with adjustments, you must have 11 entries in your adjustments array.

Step 4: Match Notes to Explanations

The document usually has note references (BS1, CF1, etc.) with explanations at the bottom.

Match each adjustment to its explanation.

Step 5: Validation

Before submitting, verify:

- Number of adjustments matches number of rows in variance tables
- All amounts are captured (including zero values)
- Note explanations are matched correctly

Output in this JSON format:

```json
{
  "document_metadata": {
    "pdf_filename": "string",
    "processing_timestamp": "ISO datetime",
    "parsing_confidence": "high|medium|low",
    "parser_notes": "string (mention total adjustments found)",
    "total_pages": "number",
    "has_reconciliation_table": "boolean"
  },
  "announcement_metadata": {
    "announcement_id": "string",
    "company_name": "string",
```

```
    "company_registration": "string",
    "fiscal_year_end": "string (YYYY-MM-DD)",
    "announcement_date": "string (YYYY-MM-DD)",
    "currency": "string",
    "amounts_in_thousands": "boolean",
    "auditor_mentioned": "string|null",
    "impact_statement": "string (e.g., 'no impact to total assets')"
  },
  "adjustments": [
    {
      "adjustment_id": "string (e.g., ADJ001)",
      "statement_type": "Balance Sheet|Cash Flow|Income Statement|Equity",
      "line_item_original": "string (EXACT text from table)",
      "account_category": "string",
      "announced_value": "number",
      "audited_value": "number",
      "variance_amount": "number",
      "variance_percentage": "number|null",
      "note_reference": "string (e.g., BS1, CF1)",
      "adjustment_type":
"RECLASSIFICATION|MEASUREMENT|RECOGNITION|OTHER",
      "adjustment_reason": "string (from note explanation)",
      "explanation_text": "string (full explanation)",
      "affects_income": "boolean",
      "is_reclassification_only": "boolean"
```

```
    }
  ],
  "summary_statistics": {
    "total_adjustments_count": "number",
    "balance_sheet_adjustments": "number",
    "cash_flow_adjustments": "number",
    "income_statement_adjustments": "number",
    "total_absolute_variance": "number"
  }
}
```

Account Categories:

- Balance Sheet: CURRENT_ASSETS, NON_CURRENT_ASSETS, CURRENT_LIABILITIES, NON_CURRENT_LIABILITIES, EQUITY
- Cash Flow: CASH_FLOW_OPERATING, CASH_FLOW_INVESTING, CASH_FLOW_FINANCING
- Income Statement: REVENUE, COST_OF_SALES, OPERATING_EXPENSES, OTHER_INCOME, TAX

FINAL REMINDER:

If you see a table with 11 line items that have adjustments, you MUST output 11 adjustment entries. Do not summarize or skip any rows!""

Appendix D: Keyword Patterns for IFRS Classification

The following lists present the complete set of keywords used to identify adjustments related to specific IFRS standards. All patterns are implemented as case-insensitive regular expressions.

IFRS 16 / IAS 17 — Leases

- Direct standard references: "IFRS 16", "IAS 17"
- Core terms: "lease", "right-of-use", "ROU asset"
- Liability terms: "lease liability", "lease liabilities", "principal portion of lease"
- Asset terms: "lease asset", "lease commitments", "prepaid lease"
- Classification terms: "finance lease", "operating lease", "operating lease commitments"
- Related terms: "hire purchase", "minimum lease payments"

IFRS 15 / IAS 18 / IAS 11 — Revenue from Contracts with Customers

- Direct standard references: "IFRS 15", "IAS 18", "IAS 11"
- Core terms: "revenue", "sales" (excluding "sales cost")
- Contract terms: "contract asset", "contract liability", "contract revenue", "contract cost", "performance obligation"
- Timing terms: "deferred revenue", "unearned revenue", "deferred income"
- Construction terms: "progress billings", "billings in excess", "percentage-of-completion", "construction contract"
- Customer terms: "advance from customers", "advance by customers"
- Other: "reversal of revenue"

IFRS 9 / IAS 39 — Financial Instruments

- Direct standard references: "IFRS 9", "IAS 39"
- Core terms: "financial instrument", "financial asset", "financial liability"

- Measurement categories: "FVOCI", "FVTPL", "fair value through profit or loss", "fair value through other comprehensive income", "amortised cost"
- Impairment terms: "expected credit loss", "ECL", "impairment loss" (when related to financial items), "impairment allowance", "loan loss allowance", "loan impairment allowance"
- Legacy IAS 39 categories: "available-for-sale", "held-to-maturity", "loans and receivables", "incurred-loss model"
- Other terms: "derivative financial instrument", "hedge accounting", "credit risk adjustment", "credit risk model"

IFRS 13 — Fair Value Measurement

- Direct standard references: "IFRS 13", "IAS 40" (investment property fair value)
- Core terms: "fair value adjustment", "fair value gain", "fair value loss"
- Valuation terms: "valuation technique", "valuation difference", "valuation uncertainty", "valuation model"
- Hierarchy terms: "Level 1", "Level 2", "Level 3" (when appearing with fair value references)
- Input terms: "quoted prices", "unobservable inputs"
- Approach terms: "discounted cash flow valuation", "market approach valuation", "cost approach valuation"

IFRS 10 / IAS 27 / SIC-12 — Consolidated Financial Statements

- Direct standard references: "IFRS 10", "IAS 27", "SIC-12"
- Core terms: "consolidated financial statements", "consolidation"
- Entity terms: "subsidiary", "subsidiaries", "associate", "associates", "joint venture", "special purpose entity"
- Interest terms: "non-controlling interest", "NCI", "loss attributable to non-controlling"

- Share terms: "share of results of associate", "share of profits of associate", "share of losses of associate"
- Control terms: "control of subsidiary", "deconsolidation"

Figure 1: Annual number of firms announcing audit adjustments, 2010–2024.

Bars show how many SGX-listed companies disclosed at least one adjustment in each fiscal year. Line shows the percentage of sample firms which disclosed at least one adjustment in each fiscal year.

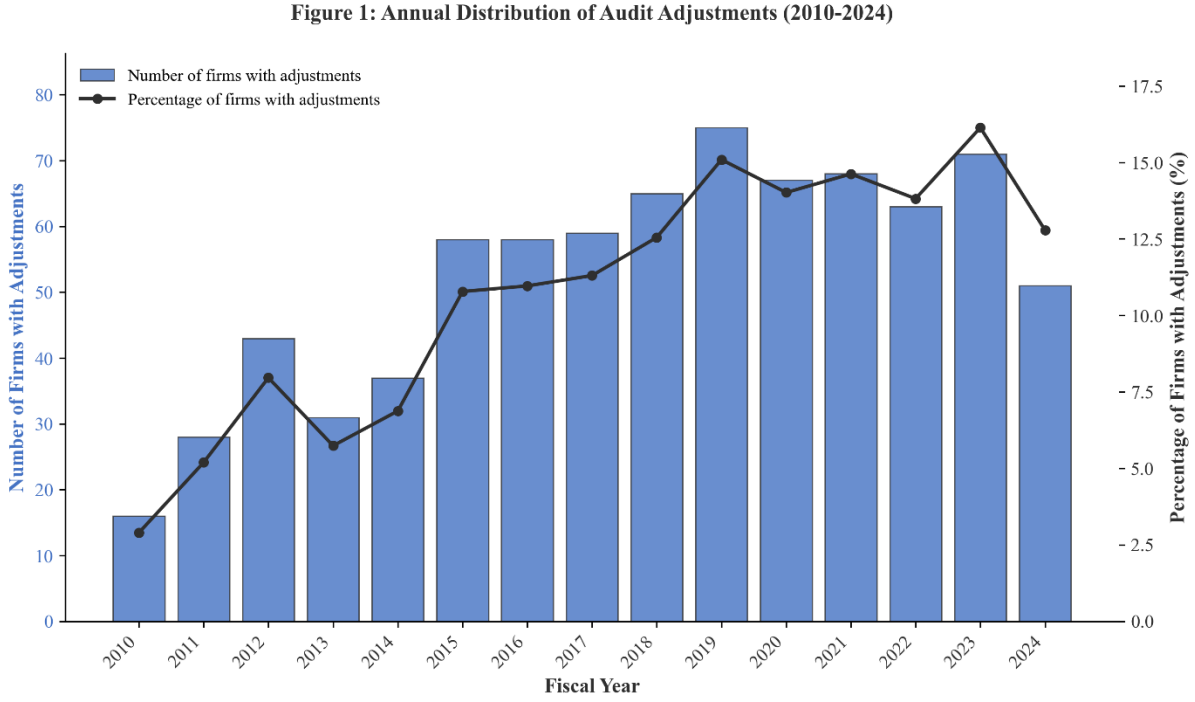

Figure 2: Leases (IFRS 16): firms with lease-related adjustments, 2010–2024.
Bars show how many SGX-listed companies disclosed at least one leases-related adjustment in each fiscal year. Line shows the percentage of sample firms which disclosed at least one leases-related adjustment in each fiscal year. The dashed vertical line marks first-time adoption on or after 1st January 2019.

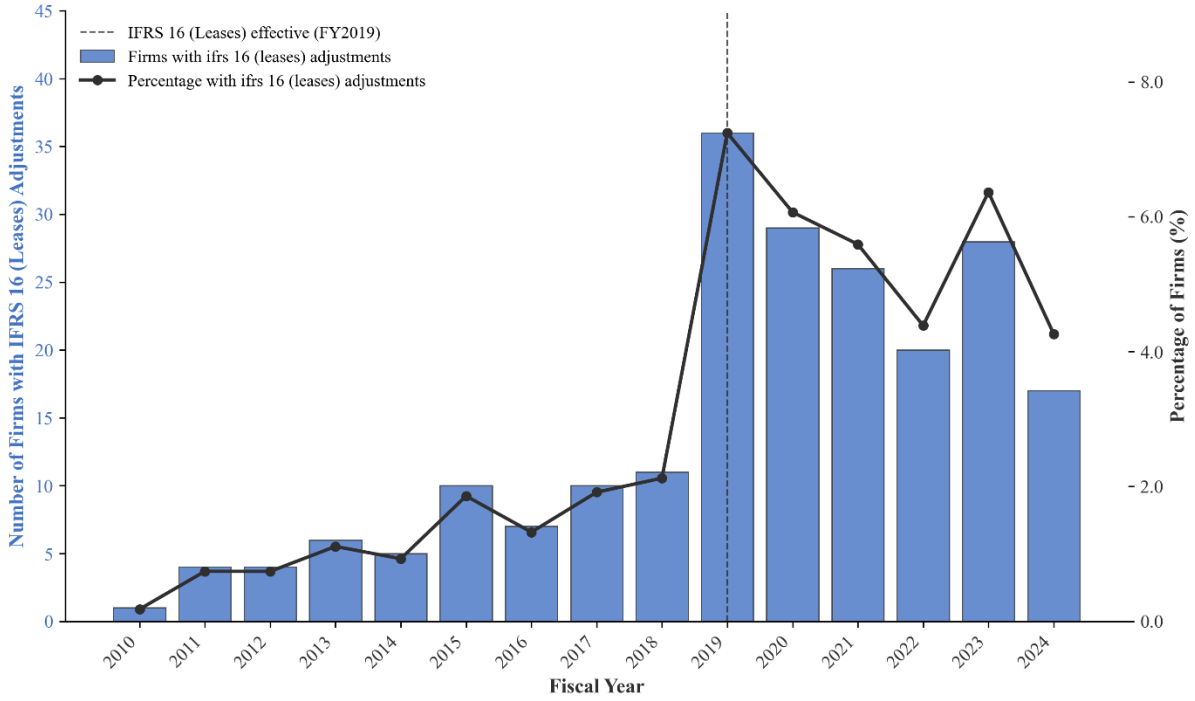

Figure 3: Revenue (IFRS 15): firms with revenue-related adjustments, 2010–2024. Bars show how many SGX-listed companies disclosed at least one revenue-related adjustment in each fiscal year. Line shows the percentage of sample firms which disclosed at least one revenue-related adjustment in each fiscal year. The dashed vertical line marks first-time adoption on or after 1st January 2018.

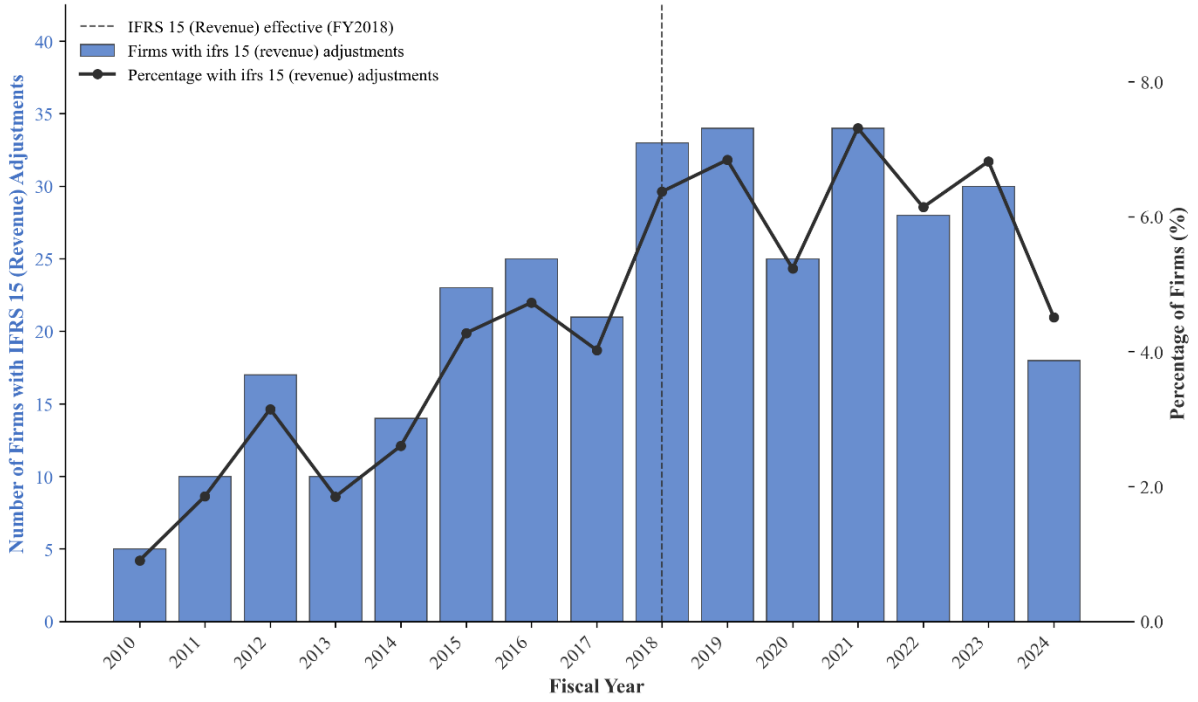

Figure 4: Financial Instruments (IFRS 9): firms with financial-instrument adjustments, 2010–2024.

Bars show how many SGX-listed companies disclosed at least one financial instrument-related adjustment in each fiscal year. Line shows the percentage of sample firms which disclosed at least one financial instrument-related adjustment in each fiscal year. The dashed vertical line marks first-time adoption on or after 1st January 2018.

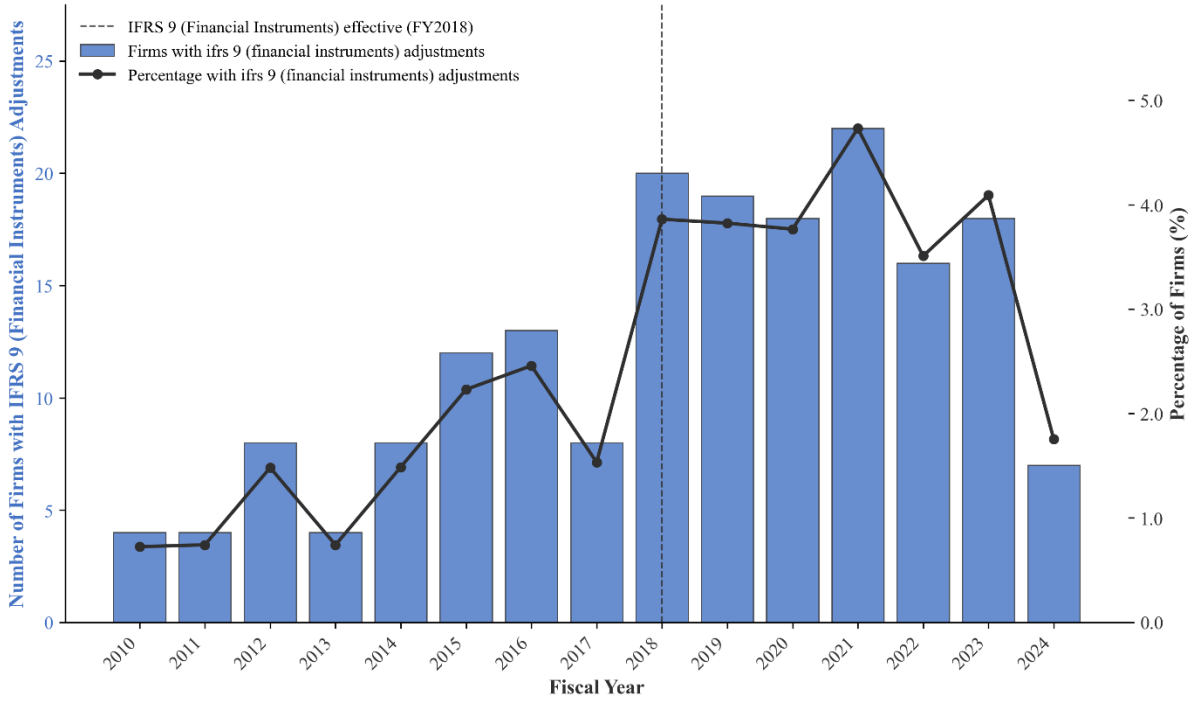

Figure 5: Fair Value Measurement (IFRS 13): firms with fair-value adjustments, 2010–2024

Bars show how many SGX-listed companies disclosed at least one fair-value-related adjustment in each fiscal year. Line shows the percentage of sample firms which disclosed at least one fair-value-related adjustment in each fiscal year. The dashed vertical line marks first-time adoption on or after 1st January 2013.

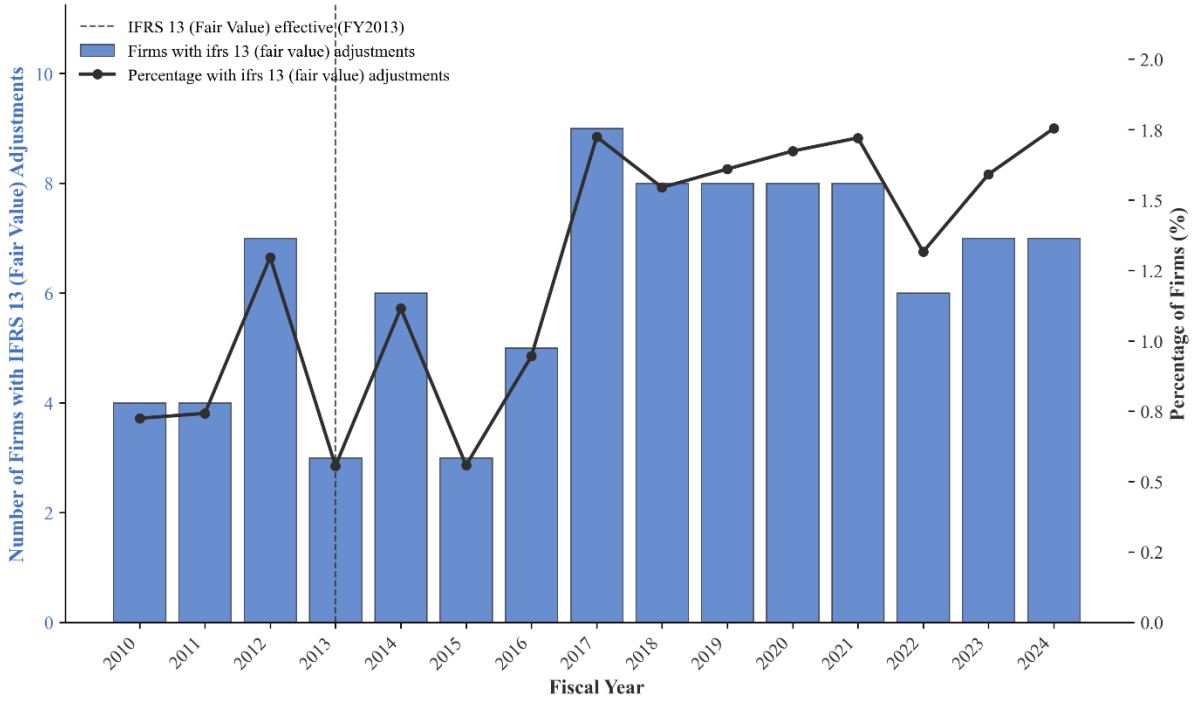

Figure 6: Consolidation (IFRS 10): firms with consolidation adjustments, 2010–2024

Bars show how many SGX-listed companies disclosed at least one consolidation-related adjustment in each fiscal year. Line shows the percentage of sample firms which disclosed at least one consolidation-related adjustment in each fiscal year. The dashed vertical line marks first-time adoption on or after 1st January 2014.

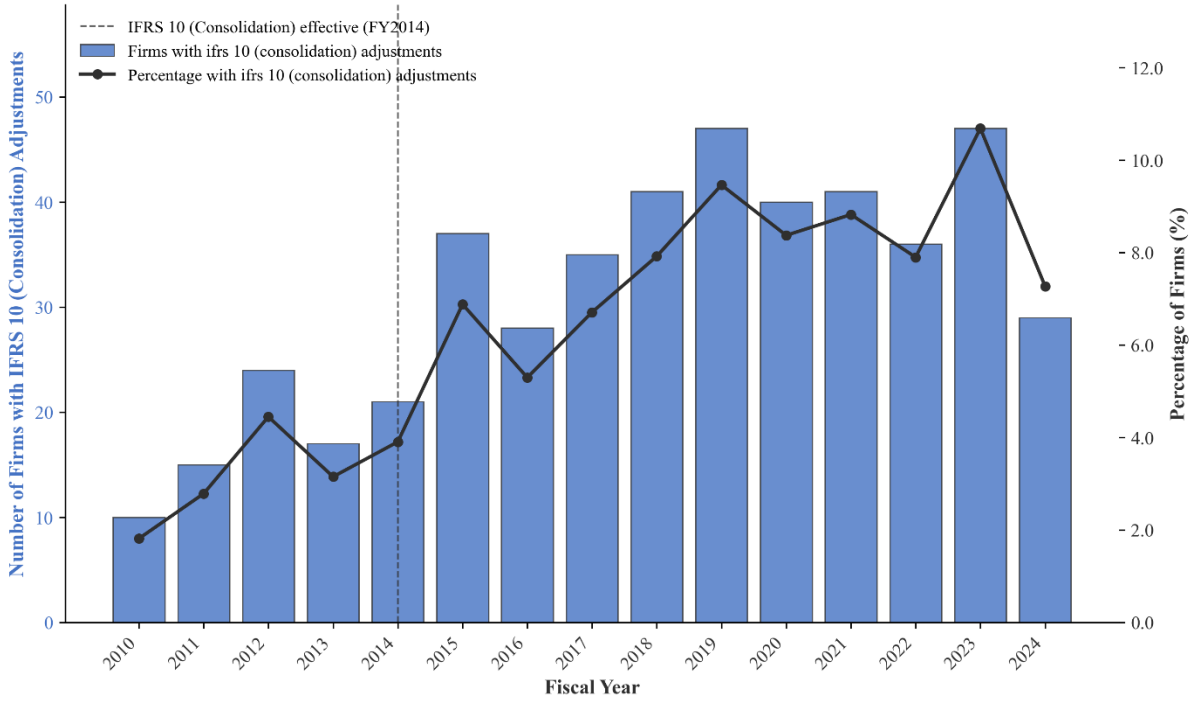

Table 1: Annual Distribution of Audit Adjustments

Year	N	Firms with Adjustments	Firms with Adjustments (%)	IFRS 16 (Leases)	IFRS 15 (Revenue)	IFRS 9 (Fin. Inst.)	IFRS 13 (Fair Value)	IFRS 10 (Consol.)
2010	528	16	2.9	1	5	4	4	10
2011	539	28	5.19	4	10	4	4	15
2012	540	43	7.96	4	17	8	7	24
2013	540	31	5.74	6	10	4	3	17
2014	538	37	6.88	5	14	8	6	21
2015	538	58	10.78	10	23	12	3	37
2016	528	58	10.96	7	25	13	5	28
2017	522	59	11.3	10	21	8	9	35
2018	518	65	12.55	11	33	20	8	41
2019	497	75	15.09	36	34	19	8	47
2020	478	67	14.02	29	25	18	8	40
2021	465	68	14.62	26	34	22	8	41
2022	455	63	13.82	20	28	16	6	36
2023	440	71	16.14	28	30	18	7	47
2024	398	51	12.78	17	18	7	7	29
Total	7,524	790	10.46	214	327	181	93	468

Table 1 presents the annual distribution of audit adjustments for our sample of Singapore-listed firms from 2010 to 2024. Column 1 (Year) shows the fiscal year. Column 2 (N) reports the total number of firm-year observations for that year. Column 3 (Firms with Adjustments) shows the count of firm-years that disclosed at least one material audit adjustment. Column 4 (Firms with Adjustments %) presents the percentage of firms disclosing adjustments. Columns 5-9 report the number of firm-years with adjustments specifically related to each of five IFRS standards: IFRS 16 (Leases), IFRS 15 (Revenue from Contracts with Customers), IFRS 9 (Financial Instruments), IFRS 13 (Fair Value Measurement), and IFRS 10 (Consolidated Financial Statements). A single firm-year can have multiple line-item adjustments related to different standards and therefore appear in multiple standard-specific columns. The final row provides totals for each column over the entire sample period. Adjustments are identified using keyword-matching algorithms applied to the detailed explanations provided in material variance announcements (see Appendix D for complete keyword lists).

Table 2: Univariate Comparison of Audit Adjustment Rates Before and After IFRS Adoption

Standard	Effective Year	Pre-adoption (n)	Pre-adoption Adjustments	Pre-adoption Rate (%)	Post-adoption (n)	Post-adoption Adjustments	Post-adoption Rate (%)	Increase in Rate
IFRS 13 (Fair Value)	2013	1,631	15	0.92	5,893	78	1.32	0.4%
IFRS 10 (Consolidation)	2014	2,171	66	3.04	5,353	402	7.47	4.43% ***
IFRS 15 (Revenue)	2018	4,298	125	2.91	3,226	202	6.21	3.30% ***
IFRS 9 (Financial Instruments)	2018	4,298	61	1.42	3,226	120	3.69	2.27% ***
IFRS 16 (Leases)	2019	4,816	58	1.2	2,708	156	5.7	4.50% ***

Table 2 presents a univariate comparison of audit adjustment rates before and after the effective adoption date for five major IFRS standards. For each standard, the sample is partitioned into pre-adoption and post-adoption periods based on the effective year shown in Column 2. The pre-adoption period includes all firm-years before the standard's effective date; the post-adoption period includes the effective year and all subsequent years through 2024. Column 3 reports the number of firm-year observations in the pre-adoption period. Column 4 shows the count of firm-years with a related adjustment in the pre-adoption period. Column 5 presents the pre-adoption adjustment rate (percentage of firms with adjustments). Columns 6-8 present corresponding statistics for the post-adoption period. Column 9 (Increase in Rate) reports the difference in adjustment rates between the two periods, measured in percentage points. We test the significance of this difference using Welch's t-test for independent samples, comparing the mean of the binary (0/1) adjustment indicator between the pre- and post-adoption periods. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 3: Descriptive Statistics for Firm-Years With and Without Audit Adjustments

Panel A: Continuous variables

Variables	Adjustments (n = 790)			No Adjustments (n = 6,734)			Difference	
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.	Mean (sig)	Median (sig)
log_assets	4.511	4.453	1.761	5.328	5.05	2.133	-0.817 ***	-0.597 ***
roa	-0.224	-0.035	1.246	-0.081	0.022	2.847	-0.142 **	-0.057 ***
leverage	0.771	0.521	1.575	0.768	0.430	7.025	0.003	0.091 ***

Panel B: Indicator variables

Variables	Adjustments	No Adjustments	Difference (sig)
loss (%)	62.78	32.27	30.51 ***
big4 (%)	31.65	57.39	-25.74 ***

Table 3 provides descriptive statistics for our full sample (2010-2024), partitioned into firm-years with at least one audit adjustment (n = 790) and firm-years with no adjustments (n = 6,734). Panel A presents statistics for continuous variables (log_assets, roa, leverage); Panel B presents statistics for indicator variables (loss, big4). The Difference columns report test statistics: Welch's t-test for differences in means, Mann-Whitney U test for differences in medians (Panel A), and chi-square test for differences in proportions (Panel B). ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 4: Pre-Post Analysis of Audit Adjustments Following IFRS Adoption

Panel A: Likelihood of Adjustment

	(1) IFRS 10	(2) IFRS 13	(3) IFRS 9	(4) IFRS 15	(5) IFRS 16
post_ifrs10	0.037***				
	(0.007)				
post_ifrs13		0.002			
		(0.004)			
post_ifrs9			0.021***		
			(0.005)		
post_ifrs15				0.034***	
				(0.007)	
post_ifrs16					0.046***
					(0.007)
log_assets	0.004	0.005	0.004	0.001	-0.007*
	(0.005)	(0.003)	(0.003)	(0.004)	(0.004)
big4	-0.024	-0.004	-0.024**	-0.023*	-0.010
	(0.015)	(0.008)	(0.010)	(0.012)	(0.010)
leverage	-0.000	0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
loss	0.043***	0.011**	0.021***	0.041***	0.021***
	(0.009)	(0.004)	(0.005)	(0.008)	(0.006)
roa	0.000	-0.000	0.000	0.000	0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
cons	0.012	-0.018	0.000	0.021	0.049**
	(0.027)	(0.017)	(0.017)	(0.020)	(0.021)
Observations	7,524	7,524	7,524	7,524	7,524
Within R^2	0.014	0.003	0.011	0.018	0.025

Panel B: Number of Adjustments

	(1) IFRS 10	(2) IFRS 13	(3) IFRS 9	(4) IFRS 15	(5) IFRS 16
post_ifrs10	0.134***				
	(0.039)				
post_ifrs13		0.001			
		(0.015)			
post_ifrs9			0.046***		
			(0.016)		
post_ifrs15				0.139***	
				(0.030)	
post_ifrs16					0.191***
					(0.027)
log_assets	0.026	0.028	0.015*	0.028*	-0.020*
	(0.022)	(0.021)	(0.008)	(0.014)	(0.012)
big4	-0.133	-0.022	-0.081**	-0.067	-0.023
	(0.089)	(0.031)	(0.034)	(0.046)	(0.040)
leverage	-0.002	0.001	-0.000	-0.001	-0.000
	(0.001)	(0.001)	(0.000)	(0.001)	(0.000)
loss	0.177***	0.044***	0.058***	0.107***	0.056***
	(0.044)	(0.014)	(0.018)	(0.028)	(0.021)
roa	0.003*	-0.000	0.001	-0.001	0.002*
	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
_cons	0.030	-0.120	-0.010	-0.067	0.126**
	(0.120)	(0.091)	(0.048)	(0.072)	(0.061)
Observations	7,524	7,524	7,524	7,524	7,524
Within R^2	0.008	0.005	0.008	0.013	0.022

Table 4 presents results from linear probability models (LPM) with firm fixed effects examining whether audit adjustments increased following the adoption of five major IFRS standards. Each column represents a separate regression for one standard. In Panel A, the dependent variable is an indicator equal to one if a firm disclosed an adjustment related to the specific IFRS standard in year t. In Panel B, the dependent variable is the count of adjustment line items related to the specific standard. The key independent variable, post_ifrs[X], is an indicator equal to one for all firm-years from the standard's effective adoption year onward. All models include firm fixed effects and standard errors are clustered at the firm level (reported in parentheses). ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 5: Difference-in-Differences Analysis of Audit Adjustments by Firm Exposure to IFRS Standards

Panel A: Likelihood of Adjustment

	(1) IFRS 10	(2) IFRS 13	(3) IFRS 9	(4) IFRS 15	(5) IFRS 16
Treated × Post	-0.014				
	(0.013)				
Post	0.041***				
	(0.008)				
Treated × Post		-0.001			
		(0.006)			
Post		0.002			
		(0.004)			
Treated × Post			0.023**		
			(0.011)		
Post			0.015***		
			(0.005)		
Treated × Post				0.067**	
				(0.028)	
Post				0.026***	
				(0.007)	
Treated × Post					0.053**
					(0.021)
Post					0.037***
					(0.007)
log_assets	0.005	0.005	0.004	0.001	-0.008*
	(0.005)	(0.003)	(0.003)	(0.004)	(0.004)
big4	-0.023	-0.004	-0.024**	-0.024**	-0.008
	(0.015)	(0.008)	(0.010)	(0.012)	(0.011)
leverage	-0.000	0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
loss	0.043***	0.011**	0.022***	0.040***	0.021***
	(0.009)	(0.004)	(0.005)	(0.008)	(0.006)
roa	0.000	-0.000	0.000	0.000	0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
cons	0.007	-0.018	-0.002	0.024	0.051**
	(0.027)	(0.017)	(0.017)	(0.019)	(0.021)
Observations	7,524	7,524	7,524	7,524	7,524
Within R^2	0.014	0.003	0.013	0.021	0.028

Panel B: Number of Adjustments

	(1) IFRS 10	(2) IFRS 13	(3) IFRS 9	(4) IFRS 15	(5) IFRS 16
Treated × Post	-0.026				
	(0.072)				
Post	0.142***				
	(0.047)				
Treated × Post		-0.007			
		(0.020)			
Post		0.003			
		(0.013)			
Treated × Post			0.092***		
			(0.035)		
Post			0.022		
			(0.015)		
Treated × Post				0.227*	
				(0.127)	
Post				0.112***	
				(0.029)	
Treated × Post					0.228**
					(0.090)
Post					0.151***
					(0.026)
log_assets	0.028	0.028	0.017**	0.027*	-0.023*
	(0.021)	(0.021)	(0.008)	(0.014)	(0.012)
big4	-0.131	-0.022	-0.081**	-0.070	-0.017
	(0.087)	(0.031)	(0.034)	(0.046)	(0.040)
leverage	-0.002	0.001	-0.000	-0.001	-0.000
	(0.001)	(0.001)	(0.000)	(0.001)	(0.000)
loss	0.177***	0.044***	0.060***	0.103***	0.053**
	(0.044)	(0.014)	(0.018)	(0.027)	(0.021)
roa	0.003*	-0.000	0.001	-0.001	0.002*
	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
_cons	0.021	-0.122	-0.020	-0.057	0.137**
	(0.115)	(0.093)	(0.047)	(0.072)	(0.061)
Observations	7,524	7,524	7,524	7,524	7,524
Within R^2	0.008	0.005	0.010	0.015	0.025

Table 5 presents results from difference-in-differences specifications comparing adjustment patterns for firms most exposed to each IFRS standard (treated group) versus less-exposed firms (control group). Each column represents a separate regression for one standard. In Panel A, the dependent variable is an indicator equal to one if a firm disclosed an adjustment related to the specific standard in year t. In Panel B, the dependent variable is the count of related adjustment line items. The key coefficient of interest is Treated × Post, which captures the differential change in adjustments for treated firms relative to control firms following standard adoption. Treatment group definitions vary by standard based on economic exposure: IFRS 16 (Leases) – retail, machinery manufacturing, and utilities industries (SIC codes 5200-5999, 3500-3599, 4900-4999); IFRS 15

(Revenue from Contracts with Customers) – construction, chemicals, and utilities industries (SIC codes 1500-1799, 2800-2899, 4900-4999); IFRS 9 (Financial Instruments) – top tercile of receivables intensity (receivables/total assets), measured in 2017; IFRS 13 (Fair Value Measurement) – top tercile of intangible asset intensity (intangibles/total assets), measured in 2012; IFRS 10 (Consolidated Financial Statements) – top tercile of goodwill intensity (goodwill/total assets), measured in 2013. Post is an indicator equal to one from the adoption year onward. The Treated main effect is absorbed by firm fixed effects and not separately identified. All models include firm fixed effects and standard errors are clustered at the firm level (reported in parentheses). ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.