

# THE ECONOMIC AND REGULATORY CONSEQUENCES OF IFRS 16 ADOPTION ON FIRM INVESTMENT EFFICIENCY: EVIDENCE FROM ASEAN-5 COUNTRIES

Kang Wan Tan \*, Mei Foong Wong \*\*

\* Faculty of Accountancy, Finance & Business, Tunku Abdul Rahman University of Management and Technology, Kuala Lumpur, Malaysia

\*\* Corresponding author, Faculty of Accountancy, Finance & Business, Tunku Abdul Rahman University of Management and Technology, Kuala Lumpur, Malaysia

Contact details: Faculty of Accountancy, Finance & Business, Tunku Abdul Rahman University of Management and Technology, Jalan Genting Kelang, 53300 Setapak, Kuala Lumpur, Malaysia



## Abstract

**How to cite this paper:** Tan, K. W., & Wong, M. F. (2026). The economic and regulatory consequences of IFRS 16 adoption on firm investment efficiency: Evidence from ASEAN-5 countries. *Risk Governance and Control: Financial Markets & Institutions*, 16(1), 20–31. <https://doi.org/10.22495/rgcv16i1p2>

Copyright © 2026 The Authors

This work is licensed under a Creative Commons Attribution 4.0 International License (CC BY 4.0). <https://creativecommons.org/licenses/by/4.0/>

ISSN Online: 2077-4303

ISSN Print: 2077-429X

Received: 10.07.2025

Revised: 19.11.2025; 15.12.2025

Accepted: 02.01.2026

JEL Classification: G31, M41

DOI: 10.22495/rgcv16i1p2

This study examines the impact of the International Financial Reporting Standard No. 16 (IFRS 16) adoption on firm investment efficiency, with emphasis on its economic and regulatory implications for different firm characteristics. A difference-in-differences (DiD) estimation approach served to evaluate data from the Association of Southeast Asian Nations 5 (ASEAN-5) countries (Indonesia, Malaysia, Singapore, Thailand, and the Philippines), with a focus on lease-intensive firms, those with higher learning opportunities, and financially constrained ones. The results indicated that IFRS 16 significantly undermined firm investment efficiency, specifically among lease-intensive firms, those with greater learning opportunities, and financially constrained ones. The mandatory capitalisation requirement, consistent with prior findings on IFRS 16 adoption (Lau, 2023; Utami et al., 2024), was found to influence firm investment decisions via learning and contracting channels. With debt overhang playing a strong mediating role, underinvestment significantly and negatively influenced IFRS 16 adoption. The novelty of this study lies in its documentation of the *ex-post* economic and regulatory consequences of IFRS 16 adoption on firm investment efficiency and behaviour. Policymakers, standard setters, and practitioners in emerging nations can be better informed on how lease accounting reforms impact investment decisions.

**Keywords:** IFRS 16 Leases, Economic and Regulatory Consequences, Investment Efficiency, ASEAN

**Authors' individual contribution:** Conceptualization — K.W.T.; Methodology — K.W.T.; Validation — K.W.T.; Formal Analysis — K.W.T.; Investigation — K.W.T.; Resources — K.W.T. and M.F.W.; Data Curation — K.W.T.; Writing — Original Draft — K.W.T.; Writing — Review & Editing — K.W.T. and M.F.W.; Visualization — K.W.T. and M.F.W.; Supervision — M.F.W.

**Declaration of conflicting interests:** The Authors declare that there is no conflict of interest.

## 1. INTRODUCTION

Global economic agents have employed leases as a key corporate financing mechanism for centuries (Goodacre, 2003; Morales-Díaz & Zamora-Ramírez,

2018; Zhang, 2018). Nonetheless, the accounting treatment of leases remains debatable despite their prevalence. Finance or capital leases are capitalised in the financial statements of lessees, while operating leases are not. The practical implementation

of this classification framework lacks consistency despite its theoretical underpinnings (Biondi et al., 2011). Such arbitrariness has led organisational managers to engage in off-balance sheet leasing practices, manipulate financial statement presentation, manage costs, and preserve capital (Spencer & Webb, 2015). As such, these practices led to the understatement of liabilities and misrepresentation of the firm's financial health.

The International Accounting Standards Board (IASB) presented IFRS 16 Leases in 2016, effective for annual reporting periods beginning on or after January 1, 2019 (IASB, 2016). It requires the capitalisation of nearly all lease contracts in lessees' financial statements to eliminate arbitrary lease classifications and increase transparency. The IFRS 16 aims at increasing financial statement accuracy, albeit with challenges about firm investment decisions (Al-Refiay et al., 2023; Elbolok et al., 2022; Garrouch & Omri, 2024). Following Shroff (2017), learning and contracting served as the two key channels through which IFRS 16 impacts firm investment.

Based on the learning channel, mandatory capitalisation drives managers to review their organisational operations in compliance with the new standard to gauge asset usage and project returns (Shumsky, 2016; Trentmann, 2019). Managers who apply this process can identify underperforming business segments or areas of overinvestment and consider capital budgeting decisions (downsizing or divestiture) (Roychowdhury et al., 2019). In line with the contracting channel, IFRS 16 impacts accounting-based debt covenant ratios. This results in potential violations of loan agreements, often leading to renegotiated loan terms (including higher interest rates, stricter covenants, or additional covenant waiver fees) (Delgado-Vaquero et al., 2022), unless creditors adjust the covenants to reflect the capitalised leases (Belesis et al., 2021; Lau, 2023). Such changes can alter the organisational cost of capital, render previously viable projects less appealing, and discourage investment.

Notable gaps remain in understanding the IFRS 16 implications for investment efficiency, specifically in emerging economies<sup>1</sup>. A significant number of studies were conducted in developed countries, most of which investigated the ex-ante effects of the standard on financial ratios and balance sheet presentation (Belesis et al., 2021; Giner & Pardo, 2018; Lau, 2023; Morales-Díaz & Zamora-Ramírez, 2018). Nevertheless, the broader ex-post economic and regulatory consequences of IFRS 16 and its impact on firm operational and strategic decision-making remain underexamined. Scholars tend to disregard the differential impact of IFRS 16 on different firm types following their tendency to treat firms as a homogeneous group. While organisations with high lease intensity, learning opportunities, or financial constraints may experience substantial changes in investment efficiency due to IFRS 16, these dynamics remain underexamined.

This research shed light on the economic implications of IFRS 16 adoption on investment efficiency in the Association of Southeast Asian Nations 5 (ASEAN-5) countries (Indonesia, Malaysia, Singapore, Thailand, and the Philippines) in

response to the existing knowledge gaps. These countries were examined due to their deregulated financial system and robust economic growth since the 1980s. This financial liberalisation is frequently referred to as the "Asian miracle" (Mahbubani & Sng, 2017). With the firms in ASEAN countries actively adopting IFRS, the leasing market in this region has demonstrated remarkable growth (Solifi, 2024). The aforementioned attributes provide an ideal context for determining how mandatory lease capitalisation under IFRS 16 impacts firm investment decisions in ASEAN-5 countries.

A difference-in-differences (DiD) research design was employed in this study to compare changes in investment efficiency pre- and post-IFRS 16 adoption between treatment and control firms. Treatment groups were defined based on their sensitivity to the universal application of IFRS 16 to publicly listed firms. In particular, lease-intensive firms, those with higher learning opportunities, and financially constrained ones were identified as treatment groups. This approach facilitates the isolation of IFRS 16's causal impact while also controlling potential confounding factors.

This empirical work enriched the current body of literature on lease accounting and corporate investments by denoting the negative association between IFRS 16 adoption and firm investment efficiency. Following theoretical predictions, lease-intensive firms, those with higher learning opportunities, and financially constrained ones experienced a significant decline in investment efficiency post-adoption. The IFRS 16 exacerbated underinvestment through the debt overhang channel while also exerting a restricted influence on overinvestment. The elicited outcomes, focusing on the post-adoption period and the actual effects on firm investment decisions, corroborate past works in developed nations (Chen et al., 2023; Shroff, 2017).

This study added depth to the existing literature on the ex-post economic implications of accounting standards. Given the significant number of studies exploring the ex-ante effects of IFRS 16, this research emphasised the broader implications for firm operational and strategic decision-making. The effects of mandatory lease capitalisation on investment efficiency were extensively examined by emphasising the heterogeneous impact across different firm types. The current work proposed a customised approach to assessing the impacts of IFRS 16 based on firm-specific attributes that influence the adoption outcomes.

Policymakers and accounting standard setters can benefit from the practical implications derived from the study outcomes. Accounting standards like IFRS 16 should emphasise the faithful representation of economic substance without distorting business decisions (Durocher & Fortin, 2021). As such, standard setters should allow sufficient adaptation time and consider the readiness of firms in emerging markets. In this context, proactive financial planning and system upgrades can support firms in effectively integrating new lease reporting requirements into their strategic and investment decisions. Beyond its practical relevance, this study contributed to the theoretical understanding of how accounting standards affect firm behaviour through the learning and contracting channels. It provided a foundation for evaluating the broader economic implications of future accounting reforms, particularly

<sup>1</sup> To the best of current knowledge, research concerning IFRS 16 in developing countries is limited to the works of Ooi and Lim (2022) and Utami et al. (2024).

in settings where financial transparency and resource allocation are critical for sustainable growth.

The remaining sections proceed as follows. Section 2 reviews the literature and develops the hypotheses. Section 3 details the data and research design. Section 4 reports the empirical results. Section 5 discusses the findings, and Section 6 concludes the study.

## 2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

### 2.1. IFRS 16 adoption and corporate investment

#### 2.1.1. The learning channel

The substantial economic consequences of accounting treatment and reporting standards on the behaviour of reporting entities have been extensively examined (Lau, 2023; Merz, 2017; Scott, 2015). Managers tend to lack increased visibility of their firms' lease portfolios or fail to integrate off-balance-sheet lease information into their decision-making processes pre-IFRS 16 adoption. The time and cost constraints involved in gathering and processing lease-oriented information remain unresolved, given the extensive lease portfolios maintained by various firms (Sharma & Bansal, 2025; Shumsky, 2016; Trentmann, 2019).

Chen et al. (2023) reinforced that insufficient incentives in the context of moral hazards (e.g., empire-building and managerial overconfidence) limit the managerial oversight of lease portfolios. Furthermore, managerial constraints in terms of attention and information processing may limit the understanding of the advantages of systematically gathering lease information (Giner & Pardo, 2018). The failure to credibly disclose private information on off-balance-sheet commitments (particularly in institutional environments with less stringent enforcement mechanisms) may exacerbate these restrictions (Al-Refiay et al., 2023; Garrouch & Omri, 2024; Utami et al., 2024).

The introduction of IFRS 16 requires a holistic review of firm operations. Consistent with the agency theory, the need for more accurate information (to reduce agency costs between managers and shareholders) can influence managerial behaviour (Jensen & Meckling, 1976). The IFRS 16 provides increased transparency into lease obligations by mitigating the agency costs related to inefficient decision-making, potentially revealing underutilised leased assets, redundant business activities, or areas for divestiture (Roychowdhury et al., 2019). Hence, the increased visibility afforded by lease capitalisation compliance could lead to the reassessment of investment decisions and improvements in investment efficiency.

#### 2.1.2. The contracting channel

The efficient contracting theory highlighted the significance of financial reporting in facilitating organisational efforts to enhance contractual arrangements (Lau, 2023; Scott, 2015). Accounting standards and reporting requirements explicitly influence the contract structure by providing transparent, reliable information that mitigates agency costs and promotes informed decision-making between contracting parties. Mandating lease

capitalisation via IFRS 16 adoption alters how organisations report liabilities and assets, which then affects the terms and nature of their contracts (particularly those related to financing).

With regard to debt contracting, IFRS 16's requirement of lease capitalisation on the balance sheet increases both liabilities and assets. This change in accounting treatment affects the financial ratios used in debt covenants (leverage and debt-to-equity ratios), which strengthen the firm's relationship with creditors. The signalling theory posited that organisations may adapt their financing strategies to signal their financial health and reduce risk perceptions to external stakeholders (Spence, 1973). The increased visibility of lease obligations may lower firms' reliance on lease financing to avoid breaching debt covenants, thus triggering renegotiations or more stringent terms (Giner & Pardo, 2018; Morales-Díaz & Zamora-Ramírez, 2018). Consistent with the debt covenant hypothesis from the positive accounting theory, firms with proximity to debt covenant thresholds tend to adopt accounting practices that increase current earnings while decreasing reported liabilities to prevent breaches (Dichev & Skinner, 2002; Morshed, 2024; Taylor, 2013).

The adjustment in debt contracting practices due to IFRS 16 may reflect unintended consequences for firm investment decisions. Transaction cost economics (Williamson, 1981) posited that organisations aim to mitigate transaction costs incurred by renegotiating debt terms or adjusting financing arrangements in response to covenant violations. The increase in transaction costs related to these adjustments (higher interest rates, stricter covenants, or more stringent loan terms) can create a disincentive for organisations to pursue new investment opportunities (Ooi & Lim, 2022). In this vein, firms that face increased financing costs may reduce capital expenditures or delay projects with positive net present value (NPV), leading to inefficient investment decisions (Chen et al., 2023). With firms adjusting their financing structures to comply with IFRS 16 and mitigate covenant breaches, the increased cost of capital restricts efficient investment. This dynamic creates a negative feedback loop.

The effects of IFRS 16 may transcend debt contracts to influence other managerial decisions. Given the direct impact of performance metrics on lease capitalisation, the agency theory revealed that the transition in accounting treatment potentially influences executive compensation arrangements. Managers may abandon marginal projects to improve short-term financial metrics, further disrupting investment efficiency (Belesis et al., 2021; Giner & Pardo, 2018). Overall, the contracting effects of IFRS 16 extend to managerial incentives. This statement reinforces the negative influence of lease capitalisation on firm investment efficiency.

### 2.2. Hypotheses development

Firms that are mandated to capitalise substantial lease assets and liabilities under IFRS 16 experience significant changes in the information used for capital budgeting, specifically when managers base their decisions on the same (externally disclosed) information. Firms with high lease intensity are affected in two ways. First, they tend to perform rigorous evaluations of their operational practices,

including asset use and strategic priorities (Sharma et al., 2025; Shumsky, 2016; Trentmann, 2019). Second, they face increased susceptibility to a significant decline in debt covenant ratios, leading to more stringent restrictions on capital expenditures as creditors renegotiate terms and impose new constraints (Lau, 2023; Morales-Díaz & Zamora-Ramírez, 2018).

With regard to the learning channel, lease-intensive firms must reassess their lease commitments, which may offer key insights but also expose inefficiencies in current investments. In terms of the contracting channel, covenant violations that instigate hold-up dilemmas and increase financing costs disproportionately influence these firms. The dual effect of increased lease monitoring and debt constraints implies a non-linear, U-shaped relationship between lease intensity and the investment effects of mandatory capitalisation. As the dynamics could decrease investment efficiency, the following hypothesis was developed:

*H1: The negative effect of IFRS 16 adoption on investment efficiency is more pronounced for firms with higher lease intensity.*

Firms with higher learning opportunities could demonstrate more significant investment effects post-IFRS 16 adoption. They are more capable of expanding managerial information sets and increasing the monitoring of investment decisions (Bushman et al., 2004). The IFRS 16-driven mandatory capitalisation requires managers to scrutinise lease commitments and operational practices, as well as detect inefficiencies involving overinvestment in marginal projects. Increased transparency and the reassessment of investment decisions can lead firms with increased capacity to learn and adapt to make substantial adjustments.

Counterparts with low-quality internal information systems may encounter difficulties in effectively leveraging the additional data required under IFRS 16 (Morshed, 2024). The lack of preparedness to integrate detailed lease information into investment decision-making processes can drastically reduce investment efficiency (Chen et al., 2023; Utami et al., 2024). While the new reporting requirements may offer informational benefits, firms with greater learning opportunities may also face disproportionate disruptions. These firms may overreact to new data, misinterpret it, or overcorrect existing practices, especially during the initial adjustment period (Durocher & Fortin, 2021; Sharma & Bansal, 2025). Therefore, the impact of IFRS 16 on investment efficiency may be amplified among firms with a higher capacity to process and act on newly available information. Based on these discussions, the following hypothesis was developed:

*H2: The negative effect of IFRS 16 adoption on investment efficiency is more pronounced for firms with higher learning opportunities.*

The adoption of IFRS 16 alters firms' reported financial positions by capitalising lease liabilities, thereby increasing leverage and potentially deteriorating financial ratios used in debt covenants (Delgado-Vaquero et al., 2022; Lau, 2023; Morales-Díaz & Zamora-Ramírez, 2018). This accounting change may inadvertently trigger covenant violations or prompt debt renegotiations, especially among firms that rely heavily on lease financing. Through the contracting channel, such disruptions in

contractual agreements can restrict firms' access to external finance, increase borrowing costs, or lead to more stringent lending terms.

Financially constrained firms, which have limited internal funds, weak collateral, or few alternative sources of financing, are particularly vulnerable to these adverse contractual outcomes. The heightened risk of covenant breaches may compel these firms to defer or cancel positive NPV projects to maintain compliance or reduce financial risk. As a result, IFRS 16 may exacerbate underinvestment problems in these firms, reducing their overall investment efficiency. Based on these arguments, the following hypothesis was developed:

*H3: The negative effect of IFRS 16 adoption on investment efficiency is more pronounced for firms with higher financial constraints.*

### 3. RESEARCH METHODOLOGY

#### 3.1. Sample selection

Firm-level data were derived from the Refinitiv Eikon database. The current sample for Malaysia, Singapore, and the Philippines, ranging between 2016 and 2021, affords three years pre- and post-2019, when IFRS 16 took effect. Meanwhile, the sample for Indonesia and Thailand spanned between 2017 and 2022, affording three years pre- and post-IFRS 16 in 2020<sup>2</sup>. Firms in the financial services and utilities sectors were omitted due to their distinct nature of investment decisions and financial reporting norms (Bae et al., 2017; Ghazali et al., 2022; Khaw et al., 2023). A minimum of one valid observation was required in both the pre- and post-treatment periods. The final sample encompassed 11,418 firm-year observations following the exclusion of observations with missing values. Table 1 presents the sample selection procedure.

**Table 1.** Sample selection

<i>Descriptions</i>	<i>Observations</i>
Firm-year observations in the Refinitiv Eikon database after deleting firms in the financial services and utilities industries:	
Malaysia (from the years 2016–2021)	5,034
Singapore (from the years 2016–2021)	4,194
Philippines (from the years 2016–2021)	1,368
Indonesia (from the years 2017–2022)	3,912
Thailand (from the years 2017–2022)	4,056
Less:	
Observations with missing dependent or control variables	6,314
Observations available only in either the pre- or post-period	832
Final firm-year observations	11,418

#### 3.2. Investment efficiency

Firm investment efficiency was evaluated following Richardson's (2006) accounting-based residual measurement model.

<sup>2</sup> Based on the local accounting standards board, IFRS 16 was implemented in Malaysia, Singapore and the Philippines on January 1, 2019 (Institute of Singapore Chartered Accountants [ISCA], n.d.; Malaysian Accounting Standards Board [MASB], 2016; PricewaterhouseCoopers [PwC], 2019), and in Indonesia and Thailand on January 1, 2020 (Center for Investment and Business Advisory, 2018; HLB International Limited, 2022). We confirm that all firm-year observations falling into the post-period possess fiscal year-ends after IFRS 16 took effect.

$$INV_{i,t} = \alpha + \beta_1 SIZE_{i,t-1} + \beta_2 AGE_{i,t-1} + \beta_3 Q_{i,t-1} + \beta_4 LEVERAGE_{i,t-1} + \beta_5 CFO_{i,t-1} + \beta_6 SRET_{i,t-1} + \beta_7 INV_{i,t-1} + Firm\ FE + Industry \times Year\ FE + Country \times Year\ FE + \varepsilon_{i,t} \quad (1)$$

where,  $INV_{i,t}$  represents the sum of the annual changes in the value of fixed assets, intangible assets, and long-term investments, scaled by total assets, while  $\varepsilon_{i,t}$  is the deviation between actual and expected investment levels. Based on Ghazali et al. (2022) and Khaw et al. (2023), the absolute value of  $\varepsilon_{i,t}$  was multiplied by -1 to proxy for investment efficiency,  $INVEFF$ . As the deviation from the expected investment is lower, a larger  $-|\varepsilon_{i,t}|$  denotes greater investment efficiency.

### 3.3. Difference-in-differences design

The treatment groups ( $TREAT$ ) were defined as follows: lease intensity ( $LI$ ), an indicator variable equal to one if the ratio of average lease assets and liabilities to total assets is at the top tercile of the sample distribution post-IFRS 16 adoption; learning opportunities ( $LO$ ), an indicator variable equal to one if the number of industries in which the firm operates is at the top tercile of the sample distribution post-IFRS 16 implementation; and financial constraints ( $FC$ ), an indicator variable equal to one if the firm is at the bottom tercile of the sample distribution of firm size post-IFRS 16 implementation. Treatment firms were placed at the top tercile of the sample distribution within each respective category, in the year before IFRS 16 implementation, to address the concern of a trial effect on lessee firms (Ma & Xu, 2021). In contrast, firms that did not meet the aforementioned requirements within each respective category constituted the control group. As the indicator

$$INVEFF_{i,t} = \alpha + \beta_1 TREAT_{i,t} \times POST_{k,t} + \beta_2 V_{i,t} + Firm\ FE + Industry \times Year\ FE + Country \times Year\ FE + \varepsilon_{i,t} \quad (2)$$

$Firm\ FE$ ,  $Industry \times Year\ FE$ , and  $Country \times Year\ FE$  fixed effects were added to control unobservable time-invariant firm attributes, time-varying industry cycles, and changes in country-level macroeconomic conditions. As the study sample spanned the period of the economic recession (e.g., COVID-19 pandemic), these fixed effects could mitigate potential bias in the inferences resulting from unobservable macroeconomic factors. Correlations could be established between investment and the new lease standards adoption timing. A decline in investment may merely reflect an increase in financial constraints or a decrease in investment opportunities. Furthermore, the study clustered standard errors by country and truncated the top and bottom 1% of the continuous variables.

variable,  $POST$  took the value of one for observations recorded in the period following IFRS 16 implementation.

Treatment and control firms were matched by country, industry, and year. Following past works, industry characteristics, macroeconomic conditions, and regulatory frameworks at the country level exerted a significant influence on corporate investment decisions (Fazzari et al., 1987; Gulen & Ion, 2016).

### 3.4. Control variables

A set of control variables ( $V$ ) associated with firm investment behaviour and investment efficiency, such as the natural logarithm of total assets ( $SIZE$ ), the natural logarithm of the number of years a firm has been listed on the stock exchange ( $AGE$ ), the market value of equity scaled by total assets ( $Q$ ), the ratio of total liabilities to total assets ( $LEVERAGE$ ), the ratio of operating cash flows to total assets ( $CFO$ ), the firm's annual stock return ( $SRET$ ), and the tangibility of assets, measured as the ratio of fixed assets to total assets ( $TANG$ ), was incorporated into the study model (Bae et al., 2017; Biddle et al., 2009; Ghazali et al., 2022; Khaw et al., 2023).

### 3.5. Research design

The impact of IFRS 16 adoption on firm investment efficiency was examined via DiD regression (subscripts  $k$ ,  $i$ , and  $t$  indicate country, firm, and year, respectively):

The DiD estimator (interaction between  $TREAT$  and  $POST$ ) served as the variable of interest in Eq. (2). If IFRS 16 adoption negatively affects investment efficiency,  $\beta_1$  would be negative (as predicted).

## 4. RESULTS AND DISCUSSION

### 4.1. Descriptive statistics

Table 2 presents the summary statistics for the treatment and control samples pre- and post-IFRS 16 adoption. On average, treatment firms demonstrated lower investment efficiency levels compared to control firms in the post-treatment period (see Panels A to C).

Table 2. Summary statistics (Part 1)

Variables	Obs.	Mean	Std. dev.	Median	Obs.	Mean	Std. dev.	Median
<b>Panel A: Lease intensity</b>								
	<b>Treatment sample (pre-treatment)</b>				<b>Control sample (pre-treatment)</b>			
$INVEFF$	1,884	-0.043	0.068	-0.040	3,824	-0.046	0.063	-0.041
$SIZE$	1,884	5.656	0.510	5.649	3,824	5.801	0.679	5.744
$AGE$	1,884	1.471	0.178	1.462	3,824	1.442	0.190	1.398
$Q$	1,884	0.171	0.110	0.148	3,824	0.175	0.111	0.158
$LEV$	1,884	0.385	0.179	0.390	3,824	0.377	0.205	0.363
$CFO$	1,884	0.030	0.084	0.022	3,824	0.045	0.088	0.039
$SRET$	1,884	0.113	0.083	0.098	3,824	0.130	0.105	0.119
$TANG$	1,884	0.226	0.165	0.215	3,824	0.356	0.250	0.332

Table 2. Summary statistics (Part 2)

Variables	Obs.	Mean	Std. dev.	Median	Obs.	Mean	Std. dev.	Median
<b>Panel A: Lease intensity</b>								
	<i>Treatment sample (post-treatment)</i>				<i>Control sample (post-treatment)</i>			
INVEFF	1,885	-0.116	0.115	-0.106	3,825	-0.050	0.103	-0.054
SIZE	1,885	5.699	0.487	5.723	3,825	5.815	0.696	5.745
AGE	1,885	1.522	0.156	1.505	3,825	1.489	0.174	1.447
Q	1,885	0.162	0.114	0.133	3,825	0.173	0.118	0.159
LEV	1,885	0.402	0.200	0.392	3,825	0.401	0.266	0.384
CFO	1,885	0.029	0.090	0.027	3,825	0.050	0.099	0.041
SRET	1,885	0.075	0.079	0.054	3,825	0.061	0.131	0.043
TANG	1,885	0.230	0.170	0.219	3,825	0.350	0.255	0.325
<b>Panel B: Learning opportunities</b>								
	<i>Treatment sample (pre-treatment)</i>				<i>Control sample (pre-treatment)</i>			
INVEFF	1,895	-0.038	0.059	-0.041	3,813	-0.045	0.070	-0.049
SIZE	1,895	5.818	0.530	5.747	3,813	5.715	0.678	5.664
AGE	1,895	1.426	0.183	1.398	3,813	1.467	0.185	1.431
Q	1,895	0.183	0.162	0.164	3,813	0.179	0.141	0.172
LEV	1,895	0.360	0.182	0.347	3,813	0.391	0.204	0.390
CFO	1,895	0.046	0.099	0.050	3,813	0.042	0.065	0.047
SRET	1,895	0.124	0.074	0.099	3,813	0.129	0.083	0.104
TANG	1,895	0.297	0.203	0.263	3,813	0.319	0.248	0.293
	<i>Treatment sample (post-treatment)</i>				<i>Control sample (post-treatment)</i>			
INVEFF	1,896	-0.123	0.113	-0.112	3,814	-0.050	0.100	-0.056
SIZE	1,896	5.862	0.572	5.791	3,814	5.740	0.662	5.717
AGE	1,896	1.483	0.168	1.462	3,814	1.506	0.168	1.477
Q	1,896	0.156	0.182	0.131	3,814	0.166	0.071	0.148
LEV	1,896	0.377	0.199	0.334	3,814	0.413	0.256	0.404
CFO	1,896	0.049	0.110	0.057	3,814	0.035	0.075	0.029
SRET	1,896	0.072	0.088	0.061	3,814	0.058	0.108	0.032
TANG	1,896	0.301	0.193	0.282	3,814	0.317	0.254	0.273
<b>Panel C: Financial constraints</b>								
	<i>Treatment sample (pre-treatment)</i>				<i>Control sample (pre-treatment)</i>			
INVEFF	1,880	-0.052	0.081	-0.044	3,828	-0.048	0.085	-0.042
SIZE	1,880	5.743	0.683	5.712	3,828	5.576	0.606	5.693
AGE	1,880	1.445	0.197	1.397	3,828	1.455	0.180	1.431
Q	1,880	0.189	0.138	0.154	3,828	0.173	0.186	0.146
LEV	1,880	0.377	0.210	0.365	3,828	0.381	0.191	0.377
CFO	1,880	0.044	0.098	0.037	3,828	0.039	0.080	0.033
SRET	1,880	0.123	0.115	0.109	3,828	0.129	0.091	0.112
TANG	1,880	0.285	0.208	0.250	3,828	0.324	0.243	0.296
	<i>Treatment sample (post-treatment)</i>				<i>Control sample (post-treatment)</i>			
INVEFF	1,881	-0.100	0.105	-0.096	3,829	-0.052	0.098	-0.059
SIZE	1,881	5.764	0.698	5.727	3,829	5.785	0.614	5.741
AGE	1,881	1.495	1.778	1.447	3,829	1.502	0.164	1.477
Q	1,881	0.160	0.198	0.136	3,829	0.167	0.195	0.137
LEV	1,881	0.427	0.457	0.390	3,829	0.390	0.227	0.378
CFO	1,881	0.041	0.110	0.038	3,829	0.043	0.091	0.037
SRET	1,881	0.058	0.660	0.034	3,829	0.065	0.103	0.032
TANG	1,881	0.294	0.213	0.274	3,829	0.321	0.249	0.291

Note: The table reports summary statistics for our main variables of interest. Panels A, B, and C present the summary statistics comparing pre-IFRS 16 adoption to post-IFRS 16 adoption for both treatment and control groups regarding lease intensity, learning opportunities, and financial constraints samples.

## 4.2. Univariate results

Table 3 highlights the results of a univariate DiD analysis of the IFRS 16 adoption impact on firm investment efficiency. Compared to control firms, their treatment counterparts experienced an average decline in *INVEFF* of 0.073 for lease-intensive firms,

0.085 for those with higher learning opportunities, and 0.048 for financially constrained ones. While these univariate comparisons should be interpreted with caution, they provide preliminary evidence of the decline in investment efficiency post-IFRS 16 adoption.

Table 3. Univariate difference-in-differences analysis

Sample		Pre-treatment	Post-treatment	Diff.
		(1)	(2)	(2)-(1)
<b>Panel A: Lease intensity</b>				
Treatment sample	(a)	-0.043	-0.116	-0.073***
Control sample	(b)	-0.046	-0.050	-0.004
Diff.	(a)-(b)	0.003	-0.066***	-0.069***
<b>Panel B: Learning opportunities</b>				
Treatment sample	(a)	-0.038	-0.123	-0.085***
Control sample	(b)	-0.045	-0.050	-0.005
Diff.	(a)-(b)	0.007**	-0.073***	-0.080***
<b>Panel C: Financial constraints</b>				
Treatment sample	(a)	-0.052	-0.100	-0.048***
Control sample	(b)	-0.048	-0.052	-0.004
Diff.	(a)-(b)	-0.004	-0.048***	-0.044**

Note: The superscripts \*, \*\*, and \*\*\* denote significance at the confidence levels of 90%, 95%, and 99%, respectively.

### 4.3. Multivariate results

Table 4 details the primary analysis outcomes. The interaction term between *TREAT* and *POST* in column (1) proved negative and statistically significant at the 1% level. Apart from being statistically significant, the findings also hold considerable economic significance. The *INVEFF* of treatment firms decreased by approximately 12.87% (0.772/0.060) relative to the control firms post-IFRS 16 adoption. For the full sample, *INVEFF* reflects a mean of -0.060. The IFRS 16 implementation exerted a stronger, negative impact on investment efficiency for lease-intensive firms, hence supporting *H1*.

As presented in column (2), the coefficient on *TREAT* × *POST* proved negative and statistically significant at the 1% level. On average, the investment efficiency of treatment firms decreased by 22.12% (1.327/0.060) post-IFRS 16 adoption. Firms with higher learning opportunities experienced a significant

decrease in investment efficiency following the lease rule change, thus supporting *H2*.

The coefficient on *TREAT* × *POST* proved negative and statistically significant at the 1% level [see column (3)]. With financially constrained firms experiencing a significant reduction in investment efficiency post-IFRS 16 adoption, *H3* was supported. Regarding economic significance, a 26.55% (1.593/0.060) decrease was reported in the investment efficiency of treatment firms.

With regard to the key control variables, both *SIZE* and *AGE* were found to be significantly positive. Larger and older firms demonstrated an increase in investment efficiency due to superior resource allocation and economies of scale. Conversely, the negative coefficients on *LEVERAGE*, *SRET*, and *TANG* indicated that firms with high leverage, stock return, and tangibility are related to investment inefficiency. This reflects potential financial constraints that signify challenges or misaligned market optimism.

**Table 4.** The effect of IFRS 16 adoption on firm investment efficiency

Variables	<i>LI</i>	<i>LO</i>	<i>FC</i>
	(1)	(2)	(3)
<i>TREAT</i> × <i>POST</i>	-0.772*** (0.820)	-1.327*** (1.293)	-1.593*** (1.494)
<i>SIZE</i>	0.454*** (0.212)	0.504*** (0.239)	0.475*** (0.220)
<i>AGE</i>	0.532*** (0.690)	0.526*** (0.677)	0.577*** (0.702)
<i>Q</i>	0.190 (0.132)	0.224 (0.154)	0.159 (0.133)
<i>LEVERAGE</i>	-0.114*** (0.031)	-0.176*** (0.060)	-0.244*** (0.087)
<i>CFO</i>	0.451 (0.349)	0.435 (0.324)	0.430 (0.352)
<i>SRET</i>	-0.036** (0.030)	-0.039** (0.011)	0.052* (0.028)
<i>TANG</i>	-0.049*** (0.007)	-0.049*** (0.011)	-0.050*** (0.010)
<i>Firm FE</i>	Yes	Yes	Yes
<i>Industry</i> × <i>Year FE</i>	Yes	Yes	Yes
<i>Country</i> × <i>Year FE</i>	Yes	Yes	Yes
Adjusted R <sup>2</sup>	0.278	0.280	0.279
Observations	11,418	11,418	11,418

Note: The superscripts \*, \*\*, and \*\*\* denote significance at the confidence levels of 90%, 95%, and 99%, respectively.

### 4.4. Robustness tests

#### 4.4.1. Parallel trend analysis

To test the parallel trend assumption, in which treatment and control firms reflect similar trends in investment efficiency before the implementation of IFRS 16, five indicator variables were created to gauge the time relative to the change in lease rules:  $PRE_{t-2}$ ,  $PRE_{t-1}$ ,  $POST_t$ ,  $POST_{t+1}$ , and  $POST_{t+2}$ . These variables, functioning as the baseline comparison group, were included in DiD regressions as interactions with *TREAT*. Coefficients on the interaction terms between *TREAT* and  $PRE_{t-2}$ , as well as  $PRE_{t-1}$ , were insignificant across all three columns (see Panel A of Table 5). No significant difference was identified in investment efficiency before the changes in the lease rule, providing support for the parallel trend assumption. Notably, the interactions between *TREAT* and the variables capturing the post-period remained negative and significant across the three columns.

#### 4.4.2. Pseudo-event test

A falsification test was conducted by bringing forward the IFRS 16 adoption by one year (*PSEUDO\_POST*) and re-estimating the DiD model to address concerns about the findings merely reflecting a broader temporal trend. No statistically significant coefficients were identified on the interaction terms *TREAT* × *PSEUDO\_POST* across all three columns (see Panel B of Table 5). Hence, the observed decline in investment efficiency is attributable to general trends in corporate investment.

#### 4.4.3. Entropy balancing

Entropy balancing was employed to establish covariate balance across the first, second, and third moments of the control variable distributions following Hainmueller (2012) and McMullin and Schonberger (2020). In this vein, the differences between the treatment and control

firms do not influence the outcomes. Panel C of Table 5 presents consistent significant results. In summary, potential covariate imbalances between the treatment and control firms do not appear to affect the inferences.

#### 4.4.4. Alternative dependent variable

As the investment efficiency measure may influence the current outcomes, Biddle et al. (2009) employed an investment model was employed to construct an alternative proxy for investment efficiency (*INVEFF2*) with the following equation:

$$INV_{i,t} = \beta_0 + \beta_1 SG_{i,t-1} + \beta_2 NSG_{i,t-1} + \beta_3 (SG_{i,t-1} \times NSG_{i,t-1}) + \varepsilon_{i,t} \quad (3)$$

where, *SG* represents the growth rate of sales, and *NSG* denotes an indicator variable that takes a value of one if the firm reports negative sales growth (and zero otherwise). The study multiplied the absolute

value of the residuals by -1 and re-estimated the DiD model by substituting *INVEFF* with *INVEFF2*. The results remained significant and robust (see Panel D of Table 5).

Table 5. Robustness tests

Variables	LI	LO	FC
	(1)	(2)	(3)
<b>Panel A: Parallel trend assumption tests</b>			
<i>TREAT</i> × <i>PRE</i> <sub><i>t</i>-2</sub>	-0.187 (0.466)	0.398 (0.606)	0.464 (0.623)
<i>TREAT</i> × <i>PRE</i> <sub><i>t</i>-2</sub>	0.661 (0.823)	1.041 (1.087)	0.386 (0.514)
<i>TREAT</i> × <i>POST</i> <sub><i>t</i></sub>	-0.186** (0.497)	-1.546*** (1.398)	-0.569** (0.762)
<i>TREAT</i> × <i>POST</i> <sub><i>t</i>+1</sub>	-1.182*** (1.186)	-2.458*** (2.213)	-1.106** (1.050)
<i>TREAT</i> × <i>POST</i> <sub><i>t</i>+2</sub>	-0.719* (0.989)	-2.314*** (2.281)	-1.952*** (1.766)
Adjusted R <sup>2</sup>	0.278	0.281	0.279
Observations	11,418	11,418	11,418
<b>Panel B: Falsification tests</b>			
<i>TREAT</i> × <i>PSEUDO_POST</i>	-0.027 (0.026)	-0.089 (0.096)	-0.116 (0.124)
Adjusted R <sup>2</sup>	0.276	0.279	0.278
Observations	11,418	11,418	11,418
<b>Panel C: Entropy balancing</b>			
<i>TREAT</i> × <i>POST</i>	0.858*** (0.873)	1.330*** (1.452)	1.697*** (1.626)
Adjusted R <sup>2</sup>	0.280	0.283	0.282
Observations	11,418	11,418	11,418
<b>Panel D: Alternative investment efficiency measure</b>			
<i>TREAT</i> × <i>POST</i>	-0.571*** (0.672)	1.643*** (1.433)	-1.104*** (1.114)
Adjusted R <sup>2</sup>	0.331	0.332	0.331
Observations	11,418	11,418	11,418

Note: Control variables and fixed effects are included but not reported for brevity. The superscripts \*, \*\*, and \*\*\* denote significance at the confidence levels of 90%, 95%, and 99%, respectively.

## 4.5. Further analysis

### 4.5.1. Mechanisms

The study aimed to determine whether IFRS 16 adoption impacts under- and overinvestment via extended analysis. The fitter value  $\widehat{INV}_{i,t}$  was derived from Eq. (1). Furthermore, the firms were categorised into underinvestment (*UNDERINV*) and overinvestment (*OVERINV*) groups based on the residual values, based on Ward et al. (2020) and Phan et al. (2022). A negative residual value indicates underinvestment, while a positive one denotes overinvestment. The underinvestment proxy variable was  $UNDERINV_{i,t} = |\varepsilon_{i,t}|$  if  $INV_{i,t} < \widehat{INV}_{i,t}$ , (and zero otherwise), while the overinvestment proxy variable was  $OVERINV_{i,t} = |\varepsilon_{i,t}|$  if  $INV_{i,t} > \widehat{INV}_{i,t}$ , (and zero

otherwise). Subsequently, the tests in Table 6 were repeated using these investment inefficiency measures.

In Panel A, IFRS 16 adoption exacerbated underinvestment across all three columns. Lease capitalisation rules were found to negatively affect investment efficiency. In Panel B, only firms with higher learning opportunities experienced a noticeable reduction in overinvestment post-IFRS 16 implementation. The coefficient on the interaction term *TREAT* × *POST* in column (2) of Panel A was substantially larger than those in Panel B. An increase in underinvestment rather than overinvestment primarily catalysed the decline in investment efficiency. These findings highlight the key challenges posed by IFRS 16, particularly in terms of inhibiting the organisation from efficiently allocating capital.

**Table 6.** Under- and overinvestment

Variables	LI		LO		FC	
	(1)	(2)	(3)	(4)	(5)	(6)
<b>Panel A: Underinvestment</b>						
TREAT × POST	0.522*** (0.435)		0.696*** (0.634)		0.617*** (0.556)	
Adjusted R <sup>2</sup>	0.394		0.394		0.394	
Observations	11,418		11,418		11,418	
<b>Panel B: Overinvestment</b>						
TREAT × POST	-0.003 (0.004)		-0.018* (0.037)		0.001 (0.026)	
Adjusted R <sup>2</sup>	0.319		0.323		0.319	
Observations	11,418		11,418		11,418	

Note: Control variables and fixed effects are included but not reported for brevity. The superscripts \*, \*\*, and \*\*\* denote significance at the confidence levels of 90%, 95%, and 99%, respectively.

**4.5.2. Channels**

As IFRS 16 adoption was found to reduce investment efficiency due to underinvestment, this study explored two potential mechanisms underlying this effect: debt overhang and managerial risk aversion. Debt overhang and managerial risk-aversion are the two key determinants of underinvestment

(La Rocca et al., 2007). The current work aimed to determine whether the mandatory lease capitalisation significantly alters firm and managerial behaviour, hence contributing to the observed decline in investment efficiency. Consequently, a mediation analysis framework was applied to estimate the following regression models.

$$UNDERINV_{i,t} = \alpha + \beta_1 TREAT_{i,t} \times POST_{k,t} + \beta_2 V_{i,t} + Firm\ FE + Industry \times Year\ FE + Country \times Year\ FE + \varepsilon_{i,t} \tag{4}$$

$$CHANNEL_{i,t} = \alpha + \beta_1 TREAT_{i,t} \times POST_{k,t} + \beta_2 V_{i,t} + Firm\ FE + Industry \times Year\ FE + Country \times Year\ FE + \varepsilon_{i,t} \tag{5}$$

$$UNDERINV_{i,t} = \alpha + \beta_1 TREAT_{i,t} \times POST_{k,t} + \beta_2 CHANNEL_{i,t} + \beta_3 V_{i,t} + Firm\ FE + Industry \times Year\ FE + Country \times Year\ FE + \varepsilon_{i,t} \tag{6}$$

where, CHANNEL is the proposed mediating variables: debt overhang (DOH) and managerial risk-averse (RA). DOH was measured as the ratio of the sum of long-term and short-term debt to total assets in line with Barbiero et al. (2020). To proxy for RA, the study adopted Ooi and Hooy's (2022) methodology and calculated the standard deviation of the ratio of earnings prior to interest, taxes, depreciation, and amortization (EBITDA) to total assets with a rolling three-year window. This approach is chosen based on data availability (the absence of the executive's pay-performance incentives database renders the computation of Coles et al.'s (2013) Vega measure infeasible).

Panel A of Table 6 presents the regression results for Eq. (4), while Table 7 presents the regression results for Eqs. (5) and (6). The results detailed in Panel A imply the significant and positive impact of IFRS 16 adoption on debt overhang. The significant, positive coefficients on DOH debt overhang serve as the key factor influencing the relationship between mandatory capitalisation requirements and underinvestment. Contrarily, Panel B shows that managerial risk aversion exerts no significant effect, as most coefficients on RA are statistically insignificant, indicating it does not mediate the observed decline in investment efficiency caused by lease capitalisation requirements.

**Table 7.** Channel analysis

Variables	LI		LO		FC	
	(1)	(2)	(3)	(4)	(5)	(6)
<b>Panel A: Debt overhang</b>						
TREAT × POST	0.013** (0.010)	0.589*** (0.457)	0.020*** (0.009)	0.733** (0.635)	0.017*** (0.013)	0.678*** (0.576)
DOH		0.337** (0.511)		0.414** (0.602)		0.403** (0.619)
Adjusted R <sup>2</sup>	0.350	0.416	0.351	0.422	0.350	0.418
Observations	11,418	11,418	11,418	11,418	11,418	11,418
<b>Panel B: Managerial risk-aversion</b>						
TREAT × POST	-0.007 (0.006)	0.366 (0.279)	0.001 (0.006)	0.527** (0.433)	-0.005 (0.007)	0.573 (0.495)
RA		0.080 (0.217)		0.242 (0.359)		0.263 (0.382)
Adjusted R <sup>2</sup>	0.287	0.378	0.299	0.380	0.286	0.379
Observations	11,418	11,418	11,418	11,418	11,418	11,418

Note: Control variables and fixed effects are included but not reported for brevity. The superscripts \*, \*\*, and \*\*\* denote significance at the confidence levels of 90%, 95%, and 99%, respectively.

## 5. DISCUSSION

The outcomes demonstrate that IFRS 16 implementation significantly undermines investment efficiency, particularly among lease-intensive firms. These firms face greater challenges managing extensive lease portfolios once operating leases are capitalised, which increases the complexity of investment planning. Consistent with Shroff (2017), Shumsky (2016), and Trentmann (2019), integrating detailed lease information into investment decisions raises compliance costs and often leads managers to abandon marginal projects. This highlights that mandatory lease capitalisation can distort capital allocation, especially in ASEAN markets where lease dependence is high, and disclosure reforms impose substantial adjustment burdens.

Similarly, firms with greater learning opportunities experience pronounced declines in investment efficiency. This supports the learning channel, as weak internal information systems and limited adaptive capacity hinder firms' ability to respond effectively to regulatory changes (Chen et al., 2023; Utami et al., 2024). Complex operations amplify these inefficiencies because the assimilation of new lease rules strains decision-making and slows strategic adjustment. These findings suggest that managers must enhance internal reporting and monitoring systems to maintain investment effectiveness.

Consistent with the debt contracting channel, the adverse effect is amplified among financially constrained firms. Tightened debt covenants and restricted refinancing magnify financing frictions, reducing firms' flexibility to pursue value-enhancing investments (Lau, 2023; Morales-Díaz & Zamora-Ramírez, 2018). IFRS 16, therefore, intensifies pre-existing financial constraints, highlighting regulatory considerations for policymakers in supporting access to financing for constrained firms.

Further analysis reveals that the decline in investment efficiency is primarily driven by underinvestment rather than overinvestment. Mandatory lease capitalisation heightens caution in investment behaviour, reflecting debt-overhang effects and risk aversion linked to increased balance-sheet visibility (Lau, 2023; Shroff, 2017). While overinvestment adjustments occur for firms with higher learning opportunities, the dominant channel through which IFRS 16 influences investment behaviour is financial constraints rather than managerial risk preferences.

## 6. CONCLUSION

This study leveraged the adoption of IFRS 16 across ASEAN countries to examine the impact of mandatory lease capitalisation on firm investment efficiency. Resultantly, the decrease in investment

efficiency was more pronounced among lease-intensive firms, those with greater learning opportunities, and financially constrained ones following the adoption of IFRS 16. Mandatory capitalisation influences firm investment decisions through the learning and contracting channels. Based on further analysis, underinvestment (with debt overhang playing a key mediating role) led to the decline in investment efficiency. The study findings added depth to the literature on lease accounting by highlighting the negative impacts of mandatory lease capitalisation on firm investment efficiency.

The current work offers practical implications for firms and policymakers regarding the economic and regulatory consequences of IFRS 16 adoption, specifically its influence on contracting dynamics and investment decisions. Mandatory capitalisation increases contracting efficiency and financial reporting quality, as well as the costs associated with contracting, investing, and reporting. Such elevated costs can pose financing challenges for firms seeking alternative funding sources, ultimately undermining their investment efficiency. Moreover, the diminishing appeal of operating leases as off-balance-sheet items calls for reassessing the role of lease financing as a viable alternative to debt capital. In light of these challenges, policymakers in emerging markets could consider phased IFRS 16 implementation and provide guidance for financial planning to help lease-intensive and financially constrained firms adapt without compromising investment efficiency.

Several limitations were encountered in this study. While the research design controlled for industry cycles and macroeconomic shocks affecting both treatment and control firms, the temporal concentration of IFRS 16 adoption, which coincided with the COVID-19 period, limited the ability to fully disentangle the effects of concurrent external shocks on investment efficiency. Cross-country institutional differences, particularly in enforcement quality, further constrained the generalisability of the findings beyond the ASEAN-5 context. Finally, as the analysis focused exclusively on lessee firms, the implications for lessor entities remained outside the scope of the study, which also restricted broader generalisation. Although IFRS 16 has considerably preserved the accounting treatment for lessors under International Accounting Standards No. 17 (IAS 17), the changes in lessee accounting practices may have spillover effects on lessors. Retrospective capitalisation could elevate gearing ratios, trigger breaches of debt covenants by lessees, and hamper growth within the leasing sector for lessors. Potential scholars could consider exploring these avenues to advance the understanding of IFRS 16's broader economic and regulatory consequences.

## REFERENCES

- Al-Refiay, H. A. N., Al-Shaikh, S. S. K., & Abdulhusein, A. S. (2023). The International Financial Reporting Standards (IFRS) adoption and value relevance. *Corporate & Business Strategy Review*, 4(1), 69–86. <https://doi.org/10.22495/cbsrv4i1art7>
- Bae, G. S., Choi, S. U., Dhaliwal, D. S., & Lamoreaux, P. T. (2017). Auditors and client investment efficiency. *Accounting Review*, 92(2), 19–40. <https://doi.org/10.2308/accr-51530>
- Barbiero, F., Popov, A., & Marcin, W. (2020). Debt overhang, global growth opportunities, and investment. *Journal of Banking and Finance*, 120, Article 105950. <https://doi.org/10.1016/j.jbankfin.2020.105950>

- Belesis, N., Sorros, J., Karagiorgos, A., & Kousounadis, P. (2021). Cumulative effect of IFRS 15 and IFRS 16 on maritime company financial statements: A hypothetical case. *SN Business & Economics*, 1(3), Article 51. <https://doi.org/10.1007/s43546-021-00043-y>
- Biddle, G. C., Hilary, G., & Verdi, R. S. (2009). How does financial reporting quality relate to investment efficiency? *Journal of Accounting and Economics*, 48(2-3), 112-131. <https://doi.org/10.1016/j.jacceco.2009.09.001>
- Biondi, Y., Bloomfield, R. J., Glover, J. C., Jamal, K., Ohlson, J. A., Penman, S. H., Tsujiyama, E., & Wilks, T. J. (2011). A perspective on the joint IASB/FASB exposure draft on accounting for leases. *Accounting Horizons*, 25(4), 861-871. <https://doi.org/10.2308/acch-50048>
- Bushman, R., Chen, Q., Engel, E., & Smith, A. (2004). Financial accounting information, organizational complexity and corporate governance systems. *Journal of Accounting and Economics*, 37(2), 167-201. <https://doi.org/10.1016/j.jacceco.2003.09.005>
- Center for Investment and Business Advisory. (2018, June 4). *Adopting IFRS 9, 15 & 16 in Indonesia*. Crowe. <https://www.crowe.com/id/insights/adopting-ifrs-9-15-and-16-in-indonesia>
- Chen, C. W., Correia, M., & Urcan, O. (2023). Accounting for leases and corporate investment. *Accounting Review*, 98(3), 109-133. <https://doi.org/10.2308/TAR-2018-0406>
- Coles, J. L., Daniel, N. D., & Naveen, L. (2013). *Calculation of compensation incentives and firm-related wealth using ExecuComp: Data, program, and explanation*. <https://doi.org/10.2139/ssrn.2296381>
- Delgado-Vaquero, D., Morales-Díaz, J., & Zamora-Ramírez, C. (2022). IFRS 16 incremental borrowing rate: comparability issues and a methodology proposal for loss given default adjustment. *Accounting in Europe*, 19(2), 287-310. <https://doi.org/10.1080/17449480.2022.2046282>
- Dichev, I. D., & Skinner, D. J. (2002). Large-sample evidence on the debt covenant hypothesis. *Journal of Accounting Research*, 40(4), 1091-1123. <https://doi.org/10.1111/1475-679X.00083>
- Durocher, S., & Fortin, A. (2021). Financial statement users' institutional logic. *Journal of Accounting and Public Policy*, 40(2), Article 106819. <https://doi.org/10.1016/j.jaccpubpol.2021.106819>
- Elbolok, R., Elghateet, S., & Elhawary, E. (2022). Does IFRS convergence affect earnings quality and market volatility? *Corporate & Business Strategy Review*, 3(1), 64-84. <https://doi.org/10.22495/cbsrv3i1art7>
- Fazzari, S., Hubbard, R., Petersen, B., Blinder, A., & Poterba, J. (1987). *Financing corporate constraints investment* (NBER Working Paper No. 2387). National Bureau of Economic Research (NBER). <https://doi.org/10.3386/w2387>
- Garrouch, H., & Omri, A. (2024). IFRS adoption, information asymmetry and stock liquidity: Moderating effects of corporate governance mechanisms. *Corporate Governance and Sustainability Review*, 8(1), 20-31. <https://doi.org/10.22495/cgsrv8i1p2>
- Ghazali, A., Khaw, K. L. H., & Zainir, F. B. (2022). Development vs. political views of government ownership: How does it affect investment efficiency? *Finance Research Letters*, 48, Article 103034. <https://doi.org/10.1016/j.frl.2022.103034>
- Giner, B., & Pardo, F. (2018). The value relevance of operating lease liabilities: Economic effects of IFRS 16. *Australian Accounting Review*, 28(4), 496-511. <https://doi.org/10.1111/auar.12233>
- Goodacre, A. (2003). Assessing the potential impact of lease accounting reform: A review of the empirical evidence. *Journal of Property Research*, 20(1), 49-66. <https://doi.org/10.1080/0959991032000051962>
- Gulen, H., & Ion, M. (2016). Policy uncertainty and corporate investment. *Review of Financial Studies*, 29(3), 523-564. <https://doi.org/10.1093/rfs/hhv050>
- Hainmueller, J. (2012). Entropy balancing for causal effects: A multivariate reweighting method to produce balanced samples in observational studies. *Political Analysis*, 20(1), 25-46. <https://doi.org/10.1093/pan/mpr025>
- HLB International Limited. (2022, August 15). *IFRS/IFRS 16 leases guide*. HLB Thailand. <https://www.hlbthai.com/ifrs-tfrs-16-leases-guide/>
- Institute of Singapore Chartered Accountants (ISCA). (n.d.). *Leases*. <https://isca.org.sg/standards-guidance/financial-reporting/thought-leadership/leases>
- International Accounting Standards Board (IASB). (2016). *IFRS 16 Leases*. IFRS Foundation. <https://www.ifrs.org/issued-standards/list-of-standards/ifrs-16-leases/>
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360. [https://doi.org/10.1016/0304-405X\(76\)90026-X](https://doi.org/10.1016/0304-405X(76)90026-X)
- Khaw, K. L.-H., Chen, J., Gulzar, M. A., & Tajuddin, A. H. (2023). Equity pledge, pledgor type and investment efficiency. *Applied Finance Letters*, 12(1), 22-32. <https://doi.org/10.24135/afl.v12i1.616>
- La Rocca, M., La Rocca, E. T., & Cariola, A. (2007). Overinvestment and underinvestment problems: Determining factors, consequences and solutions. *Corporate Ownership & Control*, 5(1), 79-95. <https://doi.org/10.22495/cocv5i1p7>
- Lau, C. K. (2023). The economic consequences of IFRS 16 adoption: The role of gearing restriction in debt covenants. *Journal of Applied Accounting Research*, 24(3), 464-482. <https://doi.org/10.1108/JAAR-08-2021-0208>
- Ma, Y., & Xu, L. (2021). Major government customers and stock price crash risk. *Journal of Accounting and Public Policy*, 40(6), Article 106900. <https://doi.org/10.1016/j.jaccpubpol.2021.106900>
- Mahbubani, K., & Sng, J. (2017). *The ASEAN Miracle: A catalyst for peace*. NUS Press. <https://doi.org/10.2307/j.ctv1xz0m3>
- Malaysian Accounting Standards Board (MASB). (2016, April 15). *MASB issues a new standard which requires lessees to recognise all leases on the balance sheet*. [https://www.masb.org.my/press\\_list.php?id=252](https://www.masb.org.my/press_list.php?id=252)
- McMullin, J. L., & Schonberger, B. (2020). Entropy-balanced accruals. *Review of Accounting Studies*, 25(1), 84-119. <https://doi.org/10.1007/s11142-019-09525-9>
- Merz, A. (2017). What have we learned from SFAS 123r and IFRS 2? A review of existing evidence and future research suggestions. *Journal of Accounting Literature*, 38(1), 14-33. <https://doi.org/10.1016/j.jacclit.2017.06.001>
- Morales-Díaz, J., & Zamora-Ramírez, C. (2018). The impact of IFRS 16 on key financial ratios: A new methodological approach. *Accounting in Europe*, 15(1), 105-133. <https://doi.org/10.1080/17449480.2018.1433307>
- Morshed, A. (2024). Comparative analysis of accounting standards in the Islamic banking industry: A focus on financial leasing. *Journal of Islamic Accounting and Business Research*. <https://doi.org/10.1108/JIABR-12-2022-0349>

- Ooi, C.-A., & Hooy, C.-W. (2022). Muslim CEOs, risk-taking and firm performance. *Pacific-Basin Finance Journal*, 74, Article 101818. <https://doi.org/10.1016/j.pacfin.2022.101818>
- Ooi, S. C., & Lim, C. C. (2022). Was the change in accounting standard favourable to the financial reporting of AirAsia? From IAS 17 leases to IFRS 16 leases. *The CASE Journal*, 18(6), 995-1015. <https://doi.org/10.1108/TCJ-02-2022-0040>
- Phan, D. H. B., Tran, V. T., Ming, T. C., & Le, A. (2022). Carbon risk and corporate investment: A cross-country evidence. *Finance Research Letters*, 46(B), Article 102376. <https://doi.org/10.1016/j.frl.2021.102376>
- PricewaterhouseCoopers (PwC). (2019). *Disclosure of the expected impact of IFRS/PFRS 16 Leases*. <https://www.pwc.com/ph/en/audit/accounting-buzz/accounting-client-advisory-letters/2019/disclosure-of-the-expected-impact-of-ifrs-pfrs-16-leases.html>
- Richardson, S. (2006). Over-investment of free cash flow. *Review of Accounting Studies*, 11, 159-189. <https://doi.org/10.1007/s11142-006-9012-1>
- Roychowdhury, S., Shroff, N., & Verdi, R. S. (2019). The effects of financial reporting and disclosure on corporate investment: A review. *Journal of Accounting and Economics*, 68(2-3), Article 101246. <https://doi.org/10.1016/j.jacceco.2019.101246>
- Scott, W. R. (2015). *Financial accounting theory*. Pearson.
- Sharma, A., & Bansal, M. (2025). Impact of IFRS 16 on dividend payout: Evidence from India. *Asian Review of Accounting*, 33(5), 860-879. <https://doi.org/10.1108/ARA-09-2024-0289>
- Sharma, A., Bansal, M., & Ali, A. (2025). IFRS 16 meets ESG: Lease accounting and sustainability. *Finance Research Letters*, 86(Part D), Article 108700. <https://doi.org/10.1016/j.frl.2025.108700>
- Shroff, N. (2017). Corporate investment and changes in GAAP. *Review of Accounting Studies*, 22(1), 1-63. <https://doi.org/10.1007/s11142-016-9375-x>
- Shumsky, T. (2016, February 25). A silver lining to new lease accounting rules: Savings. *The Wall Street Journal*. <https://www.wsj.com/articles/BL-CFOB-10010>
- Solifi. (2024). *Global leasing report 2024*. <https://www.solifi.com/ebooks/global-leasing-report-2024/>
- Spence, M. (1973). Job market signaling. *The Quarterly Journal of Economics*, 87(3), 355-374. <https://doi.org/10.2307/1882010>
- Spencer, A. W., & Webb, T. Z. (2015). Leases: A review of contemporary academic literature relating to lessees. *Accounting Horizons*, 29(4), 997-1023. <https://doi.org/10.2308/acch-51239>
- Taylor, P. (2013). What do we know about the role of financial reporting in debt contracting and debt covenants? *Accounting and Business Research*, 43(4), 386-417. <https://doi.org/10.1080/00014788.2013.798551>
- Trentmann, N. (2019, January 22). CFOs uncover surprise savings as they implement new lease-accounting rules. *The Wall Street Journal*. <https://www.wsj.com/articles/cfos-uncover-surprise-savings-as-they-implement-new-lease-accounting-rules-11548176401>
- Utami, E. R., Sumiyana, S., Mustakini, J. H., & Barokah, Z. (2024). The IFRS 16 implementation in Asia-Pacific countries: Enhancing asset pronouncements or opaque information's conveyance. *Accounting Research Journal*, 37(1), 19-38. <https://doi.org/10.1108/ARJ-04-2023-0115>
- Ward, C., Yin, C., & Zeng, Y. (2020). Motivated monitoring by institutional investors and firm investment efficiency. *European Financial Management*, 26(2), 348-385. <https://doi.org/10.1111/eufm.12232>
- Williamson, O. E. (1981). The economics of organization: The transaction cost approach. *American Journal of Sociology*, 87(3), 548-577. <https://doi.org/10.1086/227496>
- Zhang, N. (2018). Leasing, legal environments, and growth: evidence from 76 countries. *Journal of Economics and Finance*, 42(4), 746-764. <https://doi.org/10.1007/s12197-017-9419-5>