Accounting for Equity Financial Instruments under International Financial Reporting Standard (IFRS) 9 *Financial Instruments*: Use, Determinants, Usefulness, and Cost

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Abstract

Standard setters, professional bodies, and practitioners consistently identify accounting for financial instruments as one of the standards that raises the most onerous concerns. Since the global financial crisis, there has been a growing demand to improve and simplify financial instruments reporting. The International Financial Reporting Standard (IFRS) 9 *Financial Instruments* replaced the International Accounting Standard (IAS) 39 *Financial Instruments: Recognition and Measurement*, with an effective date of on or after 1st January 2018.

Some of the reporting complexities come from accounting for equity financial instruments (EFAs), which present an important portion of companies' total assets. The prohibition of recycling fair value gains or losses on EFAs upon their derecognition and mandating fair value measurement without cost option are some of the major changes for EFA accounting in IFRS 9. Given the standard changes, this thesis investigates the use of EFAs, determinants of EFA classification, the value relevance of EFA information, costs related to EFAs, and whether these have been changed post IFRS 9. The investigation is conducted in three empirical studies in the context of EFA accounting standard changes under IFRS 9 in Australian listed companies.

The first study of this thesis examines the use of EFAs and their classification choice before and after IFRS 9. Using a sample of Australian Securities Exchange (ASX) 300 firms one year before and after IFRS 9 adoption, I find a significant increase in the classification of EFAs at fair value through profit or loss (FVTPL) post IFRS 9 via improved disclosure clarity regarding the classification choice. However, fair value through other comprehensive income (FVTOCI) remains the most widely used classification choice for EFAs both before and after IFRS 9. Although some evidence

shows that EFA classification location has a significant impact on financial firms' profitability ratios, the majority of firms have limited effect on profitability from their choice of EFA classification. The first study also provides descriptive evidence of the variations in the use of EFAs and classification behaviour between sectors and firm sizes.

Using a sample of both financial and non-financial ASX firms three years before and after IFRS 9 adoption, the second study examines factors that affect the choice of EFA classification and the usefulness of EFA information. I find that there is no practical change in the use of EFAs after IFRS 9 in both financial and non-financial firms, regarding whether to invest in EFAs or not, classification choice, and holding amounts. This result is in line with some evidence in Europe but in contrast to China. EFA classification determinants analysis implies a potential opportunistic use of the discretion given in IAS 39 to consider EFA effect on net income and contractual incentives of risk and compensation when making the classification decision in non-financial firms. Prior to IFRS 9, the opportunistic use of the EFA classification choice is also found in financial firms when they are exposed to a higher contractual risk. However, the potential exploitation of the accounting choice is constrained after IFRS 9. EFA amounts provide value relevance when they comprise a large portion of total assets after IFRS 9. The EFA effect on OCI only provides incremental value relevance in financial firms before but not after IFRS 9.

The third study of this thesis examines whether EFAs are related to audit fees and whether the relationship changed post IFRS 9 in non-financial ASX companies. I find that EFA holding is significantly positively related to audit fees, and this is driven by large companies. I further examine which EFA attributes drive the relationship and find that the higher audit fees are related to EFAs that are measured at level 3 fair value hierarchy, not

EFA amounts or the classification location. There is no evidence that the relationship between audit fees and EFA holding or EFA attributes changed post IFRS 9. In addition, I find that audit efficiency is not affected by EFAs, regardless of IFRS 9 adoption.

Overall, the contributions of this thesis are twofold. Firstly, the results of this thesis contribute to the standard-setting debates, which centre on whether to allow the FVTOCI option for EFA classification and recycle fair value gains or losses on EFAs from equity to profit or loss. The results provide insight to standard setters and regulators for future revision. Secondly, this thesis extends the literature on IFRS 9 by examining the effect and consequences of standard changes for EFAs, specifically. The results shed some light on the use of EFAs and the potential benefits and costs of IFRS 9.

Keywords: IFRS 9; IAS 39; Equity financial instruments; Available-for-sale assets; Accounting choice; Fair value; OCI; Value relevance; Audit fees; ASX

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List of Abbreviations

ABDC	Australian Business Deans Council
AFS	Available-For-Sale
AFTE	The French Association of Corporate Treasurers
ASC	Accounting Standards Codification
ASX	Australian Securities Exchange
AUD	Australian dollar
BCBS	Basel Committee on Banking Supervision
CAS	Chinese Accounting Standards
CDS	Credit Default Swap
CEO	Chief Executive Officer
CPI	Consumer Price Index
CTA	Capital Transitional Arrangement
DiD	Difference-in-Difference
EBIT	Earnings Before Interest and Taxes
ECB	European Central Bank
ECL	Expected Credit Loss
ED	Exposure Draft
EFA	Equity Financial Asset
EFRAG	European Financial Reporting Advisory Group
EU	European Union
FASB	Financial Accounting Standards Board
FTSE	Financial Times Stock Exchange
FVGL	Fair Value Gains or Losses
FVTOCI	Fair Value Through Other Comprehensive Income
FVTPL	Fair Value Through Profit or Loss
G20	Group of 20
GAAP	Generally Accepted Accounting Principles
GICS	Global Industry Classification Standard
IAS	International Accounting Standard
IASB	International Accounting Standards Board
IASC	International Accounting Standards Committee
IFRS	International Financial Reporting Standard
ISA	International Standards on Auditing
MENA	Middle Eastern and North African
OCI	Other Comprehensive Income
OLS	Ordinary Least Squares
PIR	Post-implementation Review
PSM	Propensity Score Matching
RFI	Request for Information
ROA	Return On Assets
ROE	Return On Equity
S&P	Standard & Poor's
SFAS	Statement of Financial Accounting Standards
SPPI	Solely Payments of Principal and Interest
UK	United Kingdom
US	United States

Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements); neither have I used artificial intelligence tools or generative artificial intelligence tools (unless it is clearly stated, and referenced, along with the purpose of use), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

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Declaration of Co-Authored works

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Chapter 1: Introduction

1.1 Motivations and Research Questions

Financial instrument accounting has long been an area of contention for standard setters, financial statements preparers, their auditors, and users of financial statements (Chatham et al., 2010; Gebhardt, 2012; PwC, 2016). The global financial crisis highlighted many problems relating to the complexity and opacity of financial instruments that put the International Accounting Standards Board (IASB) under strong pressure to revise the International Accounting Standard (IAS) 39 *Financial Instruments: Recognition and Measurement* (Duh et al., 2012). To reduce the complexity of financial instruments accounting, the IASB issued International Financial Reporting Standard (IFRS) 9 *Financial Instruments* to replace the longstanding IAS 39 in July 2014, effective on 1st January 2018 (Deloitte, 2021c).[1]

One cause of complexity was the classification and measurement of equity financial instruments (hereafter "EFAs": equity financial assets) under IAS 39. EFAs are investments in the equity of other entities. Under IAS 39, EFAs were classified either as fair value through profit or loss (FVTPL) or available-for-sale financial assets, with the classification determining the basis for their measurement either through profit or loss,

[1] The IASB allows early adoption of IFRS 9 (Deloitte., 2021c).

other comprehensive income (OCI), or amortised cost (IAS 39, para 43 and 46). The focus of this thesis on EFAs is motivated by the changes in the standard of financial instruments from IAS 39 to IFRS 9.

IFRS 9 unifies financial instruments classification and measurement, and indicates that the basis of how an EFA is measured is the way it is classified (PwC, 2017). IFRS 9 requires all fair value measurements for EFAs without the cost option (IFRS 9, para 4.1.2). The default classification for EFAs under IFRS 9 is the fair value through profit or loss (FVTPL), under which the fair value gains or losses (FVGL) on EFAs are presented in profit or loss. This contrasts with the OCI presentation of the FVGL on available-for-sale EFAs under IAS 39. Cumulative FVGL on available-for-sale EFAs could be recycled from equity to profit or loss on their derecognition under IAS 39 (IAS 39, para 43 and 46). However, IFRS 9 allows certain EFAs that are not held for trading[2] to be classified as fair value through other comprehensive income (FVTOCI), which is an unrecyclable option for the FVGL on EFAs after initial recognition (IFRS 9, para 4.1.2 and 5.7.5).

When the IASB was developing IFRS 9, extensive debate centred on whether to allow an alternative FVTOCI classification option, whether to recycle the FVGL on EFAs, and what items to present in OCI (Bradbury, 2016; EFRAG, 2015; Street, 2014). The IASB allows the FVTOCI option for EFA classification to deal with cross-holdings that are strategic investments. However, some suggest that the option can be abolished to reduce complexity if it is not important or does not provide value relevance (Löw and Erkelenz, 2022; Rees and Shane, 2012). Concerns arose over the value relevance of reported profit when FVGL on EFAs cannot be recycled to profit or loss under IFRS 9

[2] Held-for-trading: active buying and selling financial assets that are equity investments in other entities.

(EFRAG, 2015). However, the IASB was not persuaded by the view that the gains or losses on equity investments should be recognised only once (IASB, 2018, para 7.19).

Given the changes in accounting standards, this thesis investigates the effect of standard changes on EFAs in three independent but related empirical studies. Specifically, it provides evidence on the use of EFAs, determinants of EFA classification, the value relevance of EFA information, audit costs related to EFAs, and whether these have been changed post IFRS 9.

The first study examines the use of EFAs and classification choices before and after IFRS 9 and the impact on key financial ratios. The rationale for IFRS 9 allowing the FVTOCI option for EFA classification is that many firms have holdings in each other, and cross-holdings are strategic investments, which are not held for trading (Street, 2014). A separate FVGL on EFA presentation in OCI would make it easier to identify the related fair value changes and could give users useful information for making decisions (IASB, 2022a, para BC5.23). The FVGL on EFA presentation location involves judgement and discretion that indicate different information regarding management motivation. However, some firms may use the EFA classification choice to avoid passing gains and losses through profit and reduce net income volatility. Therefore, the alternative EFA classification choice allowed by the IASB may be negated. Consistent with this, the IASB reports that entities vary in how they use the classification choice for EFAs (IASB, 2022b). Prior research documents that managers typically stick to their previous accounting practices when given the option under new accounting standards (Kvaal and Nobes, 2012). Despite this uncertainty, there is a lack of systematic evidence on how entities use the classification choice allowed for EFAs. Therefore, I examine the following research questions in my first study.

RQ1. How frequently do firms choose the FVTOCI presentation for EFAs?

RQ2. What are the impacts of FVTOCI presentation choice for EFAs on financial ratios?

RQ3. What are the characteristics of firms that choose the FVTOCI presentation for EFAs?

The second study explores what factors drive firms' EFA classification choices, whether EFA information is useful to investors, and whether these have been changed after IFRS 9. Under IAS 39, the default EFA classification was available-for-sale assets, and the FVGL on these assets were presented in OCI. The cumulative FVGL were reclassified from equity to profit or loss on the derecognition of the associated EFAs (IAS 39, para 55). Extant research finds that when recycling of FVGL on EFAs is allowed, firms manage their earnings through selling EFAs to increase reported profit (Barth et al., 2017; Dong and Zhang, 2018; Lu et al., 2023). With the implementation of IFRS 9, firms are not able to recycle the FVGL on EFAs to profit or loss once FVTOCI is chosen at the initial recognition stage, which makes the EFA classification choice an important decision in this setting.

The classification of EFAs under IAS 39 considered management intentions in holding the assets. The intended effect of IFRS 9 is to reduce subjectivity in classifying EFAs by making the FVTPL the default classification but allowing irrevocable election of FVTOCI at initial recognition (BDO, 2018; Elnahass et al., 2018). Therefore, it is of interest to know the factors that affect firms' EFA classification choices and whether they changed after IFRS 9. Based on the nature and purpose of holding an EFA, I examine EFA characteristic factors that reflect underlying economics (EFA amount) and imply opportunistic use (EFA classification location and fair value measurement hierarchies) as the determinants. Further, I examine contractual incentives, including the risk of debt

covenant violation and management compensation, in determining EFA classification choice since the choice has an immediate effect on profitability. This leads to the following research question.

RQ4: What are the determinants for EFA classification choice both before and after IFRS 9?

The value relevance literature documents that available-for-sale assets measured at fair value provide a higher quality of information than they are measured at historical cost (Khurana and Kim, 2003). Since IFRS 9 eliminates the cost measurement alternative and mandates fair value measurement for EFAs, it is of interest to know the extent to which EFA amounts provide useful information to investors and whether it changed after IFRS 9. Literature has a mixed view on the usefulness of OCI (Cahan et al., 2000; Isidro et al., 2004; Khan et al., 2018). Rees and Shane (2012) suggest that if recycling FVGL on EFAs does not provide incremental value relevance, it should be terminated without making financial reporting complex. However, the European Financial Reporting Advisory Group (EFRAG) expresses concerns about the value relevance of reported profit when FVGL on EFAs are not recycled to profit or loss under IFRS 9 (EFRAG, 2015). Therefore, it is of interest to know whether FVGL on EFAs provide value relevance, whether the value relevance is related to the presentation location (either profit or loss or OCI), and whether it changed after IFRS 9. I examine the following research question.

RQ5: Does EFA information provide value relevance? Has it been changed after IFRS 9?

After understanding the use of EFAs, EFA classification determinants, and the usefulness of EFA information, I then investigate the cost related to EFAs in the third study. Fang et al. (2022) provide evidence that in China non-financial firms incur

significantly higher audit fees one year following the implementation of IFRS 9. They document that the fair value measurement for unquoted instruments without cost option and the new impairment model are the reasons for an audit fee increase (Fang et al., 2022). Fang et al. (2023) and Guo et al. (2023) investigate challenges auditors face in auditing the implementation of IFRS 9 in China and suggest that standardised audit procedures and professional auditing techniques help with the implementation of IFRS 9.

When auditing EFAs, auditors need to assess firms' compliance with the standards, evaluate the value of the assets, and verify whether EFA information disclosure is sufficient and accurate. Yet the relationship between EFAs and audit fees, and whether it changed after IFRS 9 is unclear. On the one hand, given the many changes from IAS 39 to IFRS 9, auditors may need to exert more effort to assess whether firms use the EFA accounting standards properly. On the other hand, with almost four years from the issuance of IFRS 9 to its implementation, auditors may be familiar with the standards such that it may not necessarily increase the cost. Further, the intention of a reduction in the accounting complexity of financial instruments combined with higher disclosure requirements may enhance the quality of financial reporting to the extent that less audit work is needed. This leads to the last research question for this thesis.

RQ6: Is the audit fee related to EFA, and has the audit fee been changed after IFRS 9?

1.2 Summary of Main Research Findings

This thesis addresses the six research questions in three separate but related empirical studies presented in Chapters 3 to 5. The studies are carried out in the context of EFA accounting standard changes from IAS 39 to IFRS 9 and use a sample of Australian

Securities Exchange (ASX) firms before and after IFRS 9 adoption.

Chapter 3, entitled "Does OCI Presentation for Equity Financial Instruments Matter?", examines the research questions RQ1 to RQ3. I use a sample of ASX 300 firms and investigate their EFA information one year before and after IFRS 9 adoption. To address RQ1 regarding the frequency of firms using FVTOCI presentation for their EFAs, I do not find a significant difference in the number of firms that have EFAs before and after IFRS 9 adoption. The FVTOCI presentation remains stable and dominates EFA classification choice in both years, indicating practitioners' compliance with the accounting standard by classifying not held-for-trading EFAs in FVTOCI under IFRS 9. With an increase in the disclosure clarity of EFAs, FVTPL classification increased significantly after IFRS 9. After using "what-if" analysis to calculate financial ratios, assuming different EFA classification choices are used, I find that there are no significant differences for any of the ratios, especially in non-financial firms. The result suggests that firms do not (cannot) use the EFA classification choice to maximise profit. To understand the characteristics of firms that choose FVTOCI for their EFAs, I find that financials and materials are the two sectors that have the greatest number of firms with EFAs both before and after IFRS 9. Large firms are more likely to invest in EFAs and less likely to use FVTOCI classification choice. The absence of a clear pattern between the choice of FVTOCI and income volatility indicates firms' FVTOCI classification is chosen without reducing income volatility.

Chapter 4, entitled "Accounting for Equity Financial Instruments from IAS 39 to IFRS 9: Use, Determinants, and Usefulness", investigates the use, determinants, and usefulness of EFAs in a sample of ASX 500 firms three years before and after IFRS 9 adoption. I find that the use of EFAs in terms of whether to invest in EFAs or not, EFA

amount, and classification choice has no significant change after IFRS 9. A potential opportunistic use of the EFA classification choice may exist under IAS 39, given that EFA effect on net income and contractual incentives affect the classification choice. However, after IFRS 9, EFA amount drives non-financial firms' EFA classification choice, reflecting the underlying economics that is a strategic investment. EFA characteristics and contractual incentives do not drive financial firms' EFA classification choice, suggesting compliance with the standard after IFRS 9. I find that EFA amount is value relevant when it comprises a large portion of firms' assets, and EFA effect on OCI provides value relevance for financial firms only before but not after IFRS 9.

Chapter 5, entitled "Is There an Audit Cost for Equity Financial Instruments Accounting? Evidence after IFRS 9", explores the relationship between EFAs and audit fees, and whether it changed after IFRS 9. Using a sample of ASX 500 non-financial companies three years before and after IFRS 9 adoption, I find that audit fees are significantly positively related to EFA holding, which is driven by large firms. With a detailed examination of the relationship between audit fees and EFA attributes, I find that the audit fee increase is driven by EFAs measured at level 3 fair value hierarchy, not EFA amount or classification location. Further, I find that audit efficiency is not affected by EFA holding or EFA characteristics. The relationship between EFA and audit fees or audit efficiency is not affected by the adoption of IFRS 9. We need to be cautious before interpreting the significant negative coefficient on IFRS 9 adoption in the audit fee model as an audit fee decrease following IFRS 9 adoption, since other standards were implemented simultaneously.

In a nutshell, this thesis finds that the impact of IFRS 9 on the use of EFAs is immaterial in Australia-listed firms. The potential opportunistic use of the EFA

classification choice discretion in IAS 39 is mitigated in IFRS 9. However, FVGL on EFAs that presented at OCI are value relevant in financial firms before IFRS 9 only. Level 3 fair value measurement for EFAs requires more audit efforts that lead to an increase in audit fees but is not related to the implementation of IFRS 9.

1.3 Contributions and Implications

The contribution of this thesis is twofold. Firstly, this thesis contributes to the standard-setting debate that centres on the alternative EFA FVTOCI classification choice and the recycling of the FVGL on EFAs. Secondly, this thesis broadens extant literature on IFRS 9 by adding evidence of the effect and consequences of EFA accounting standard changes on firms.

My first study provides practical evidence about firms' use of EFAs before and after IFRS 9 adoption, which speaks to standard setters on how firms implement the alternative EFA classification option. My results show that for most firms, the possible interruption of EFA accounting standard changes in IFRS 9 is not significant. FVTOCI dominates EFA classification choice both before and after IFRS 9 adoption, indicating the need to keep the alternative option. Except for some financial firms, no significant difference is found in firms' profitability with different FVGL on EFAs' presentation locations. The IASB conducted the first stage post-implementation review (PIR) of IFRS 9 for classification and measurement requirements from 2020 to 2022 (IASB, 2021d). As a result of the feedback it received from practitioners and academic research, "the IASB decided not to make any changes to the requirements for equity investments in IFRS 9, including the OCI presentation election" (IASB, 2022b, page 26).

The implication to standard setters is that more educational materials on how to disclose EFA information to IFRS enforcement agents are needed, since EFA information is presented in their names and there is insufficient disclosure of the reasons for FVGL on EFAs' presentation location.

The results of my second study highlight the potential abuse of the EFA classification discretion allowed in IAS 39 and one possible advantage of IFRS 9 in limiting the opportunistic use of discretion. Therefore, when FVGL on EFAs are not allowed to recycle from equity to profit or loss, earnings management via realising FVGL on available-sale assets is mitigated. Research shows that investors' and preparers' confidence in accounting information is increased when they are familiar with the standard (Alali and Foote, 2012; Mala and Chand, 2015). I contribute to the literature by showing that a longer notice period prior to the mandatory adoption of IFRS 9 could facilitate familiarity with the standard and reduce the potential costs associated with avoiding being negatively impacted by standard changes. I contribute to the literature on the usefulness of OCI components by showing that EFA effect on OCI is only value relevant before but not after IFRS 9 (Cahan et al., 2000; Khan et al., 2018). I call for caution in the overly positive interpretation of IFRS 9 in increasing the usefulness of financial information.

The results of my third study show a significant positive relationship between audit fees and EFA level 3 fair value measurement. This contributes to the fair value literature by extending the audit fee increasing in the complexity of the fair value estimation to equity financial instruments (Ettredge et al., 2014; Fang et al., 2023; Miah, 2019). The results of the third study offer insight into standard setters, showing that EFA accounting standard changes in IFRS 9 neither incur additional audit costs on firms nor

affect audit efficiency. I call for caution in interpreting the significant negative relationship between IFRS 9 adoption and audit fees as an audit fee decrease after IFRS 9, since other standards took effect concurrently with IFRS 9. However, this contrasts with findings in China, where audit fees increased one year after the implementation of the Chinese equivalent IFRS 9, indicating the effectiveness of IFRS adoption and enforcement environments may affect the cost of IFRS 9 between jurisdictions (Fang et al., 2022; Preiato et al., 2015).

Overall, IFRS 9 is newly effective, and studies in my thesis offer evidence regarding the impact and consequences of accounting standard changes to equity financial instruments on firms. These studies contribute to EFA standard-setting debates and IFRS 9 literature.

1.4 Structure of Thesis

The remainder of this thesis is organised as follows. Chapter 2 presents the institutional background of accounting for financial instruments and reviews the broad financial instruments literature related to IFRS 9, which leads to the research framework of this thesis.

Chapter 3 to Chapter 5 are the empirical chapters of this thesis. Chapter 3 examines the usage of equity financial instruments in a sample of ASX 300 firms in the IFRS 9 adoption year and one year before. Chapter 3 provides evidence of the effect of different EFA classification locations on financial ratios and firms' characteristics in classifying EFAs into different categories. Chapter 4 investigates factors that drive firms' EFA classification choice and whether EFA information provides value relevance. Further, chapter 4 examines whether IFRS 9 affects the determinants of EFA classification

choice and value relevance for EFAs. Chapter 5 examines the audit cost of EFAs and whether there is additional audit cost incurred after IFRS 9 adoption.

Each study develops research questions and hypotheses, details sample selection and research method, and presents descriptive statistics and results, followed by a conclusion and implications. Chapter 6 summarises findings, provides implications for various stakeholders, and discusses limitations and suggestions for future research. Table 1.1 displays an overview of the thesis structure with research questions, hypotheses, research design, and key findings.

[INSERT TABLE 1.1 HERE]

Table 1:1 Thesis structure

Chapter 2: Institutional Background, Literature Review, and Research Framework		
Chapter 3: Does OCI Presentation for Equity Financial Instruments Matter?		
RQs or Hypotheses	**Research Design**	**Key Findings**
RQ3.1: How frequently do firms choose the FVTOCI presentation for EFAs? **RQ3.2:** What are the impacts of FVTOCI presentation choice for EFAs on financial ratios? **RQ3.3:** What are the characteristics of firms that choose the FVTOCI presentation for EFAs?	**Sample:** all firms in the S&P/ASX 300 index on 22nd March 2021, excluding 25 investment entities, six firms that apply the US GAAP, one insurance firm that is exempt from adopting IFRS 9 till 2022, and 14 newly listed firms with annual reports available from 2019. **Period:** IFRS 9 adoption year and the previous year. **Research method:** descriptive analysis, "what if" analysis	OCI is the dominant presentation location for the FVGL on EFAs both during the adoption year and the pre-adoption year, suggesting that firms follow IFRS 9 to present EFAs at FVTOCI. While firms choosing to present the FVGL in profit or loss increased significantly during the adoption year, this is mainly due to the decrease in firms not disclosing the presentation location. For most firms, the impact of the presentation choice on profitability is statistically insignificant, suggesting that firms do not (and cannot) use the choice to influence profitability. EFA use and presentation vary across sectors and firm size quartiles. There is no clear pattern between EFAs' presentation and income volatilities.

Chapter 4: Accounting for Equity Financial Instruments from IAS 39 to IFRS 9: Use, Determinants, and Usefulness		
RQs or Hypotheses	**Research Design**	**Key Findings**
H4.1a: There is no relationship between EFA amount and FVTOCI classification choice, regardless of IFRS 9 adoption. **H4.1b:** There is no relationship between EFA effect on net income and FVTOCI classification choice, regardless of IFRS 9 adoption. **H4.1c:** There is a negative relationship between EFA level 3 fair value measurement and FVTOCI classification choice, regardless of IFRS 9 adoption. **H4.2a:** EFA amounts provide value relevance in firms, regardless of IFRS 9 adoption. **H4.2b:** EFA classification does not affect value relevance of FVGL on EFAs, regardless of IFRS 9 adoption.	**Sample:** ASX 500 firms, excluding 110 firms that do not have a six-year listing period on ASX, managed funds, firms that do not use IFRS, and insurance companies that are exempt from adopting IFRS 9 until IFRS 17 is effective. **Period:** three years before and after IFRS 9 adoption. **Research method:** logistic and OLS regression.	There is no practical change in the use of EFAs with regard to whether to invest in EFAs or not, EFA classification choice, and EFA holding amounts after IFRS 9 in both non-financial and financial firms, suggesting a longer notice period before mandatory adopting IFRS 9 could facilitate the familiarity of the standard and mitigate firms' potential cost from avoiding being adversely impacted by standard changes. EFA effect on net income and contractual incentives of risk and compensation are the main determinants for the choice of EFA classification in non-financial firms before IFRS 9, implying a potential opportunistic use of the discretion. However, after IFRS 9, the classification choice in non-financial firms is driven by EFA amount, which might reflect the underlying economics that is a strategic investment, and no significant relationship between the choice and EFA characteristics or contractual incentives in financial firms, implying compliance with the standard. EFA amount is value relevant when it comprises a large portion of assets after IFRS 9, and EFA effect on OCI is only value relevant in financial firms before IFRS 9.

Chapter 5: Is There an Audit Cost for Equity Financial Instruments Accounting? Evidence after IFRS 9		
RQs or Hypotheses	**Research Design**	**Key Findings**
H5.1: There is a positive relationship between audit fees and EFA holding, and IFRS 9 does not change the relationship. **H5.2:** There is no association between audit fees and EFA attributes, and IFRS 9 does not change the relationship.	**Sample:** ASX 500 companies, excluding 110 companies that do not have the full six years of the sample period, 20 managed funds and professional investment companies, nine companies that do not use IFRS, ten banks and ten insurance companies due to different reporting formats. **Period:** three years before and after IFRS 9 adoption. **Research method:** DiD regression, PSM and entropy balancing matching regression.	Audit fees are significantly positively related to EFA holding, and this is driven by large companies. The positive relationship does not change post IFRS 9. The audit fee increase is driven by EFAs that are measured at level 3 fair value hierarchy, not the EFA amount or classification location, regardless of IFRS 9 adoption. There is no significant relationship between EFA holding, EFA attributes and audit lag, regardless of IFRS 9 adoption, suggesting auditors consider EFAs when planning audit with the understanding that audit efficiency is unaffected.
Chapter 6: Conclusion		

Chapter 2: Institutional Background, Literature Review, and Research Framework

2.1 Introduction

This chapter firstly provides an overview of the institutional background, namely, the financial instruments standard-setting development and changes from the IAS 39 to IFRS 9 (Section 2.2). Though the standard changes cover all aspects of financial instruments, including the classification and measurement, new impairment models, and an overhaul of hedge accounting, studies in this thesis focus on classification and measurement for equity financial instruments. Specific accounting standards in relation to each study are discussed in their respective chapters.

This chapter further draws on the literature review for IFRS 9 based on its developing phases and provides implications to regulators, standard-setters, managers, and investors at the end of each academic research review section. Section 2.3.1 reviews studies on financial instruments classification and measurement; section 2.3.2 discusses research on impairment and risk management; section 2.3.3 summarises research on hedge accounting, and research on IFRS 9 as a whole is provided in section 2.3.4. Building on the institutional background and extant literature, section 2.4 sets out the research framework for this thesis.

2.2 Institutional Background

Accounting for financial instruments has been extensively debated over the decades, resulting in one of the most controversial standard-setting issues (Chatham et al., 2010; Gebhardt, 2012). This section discusses financial instruments from a standard-setting perspective, namely, the development of financial instruments accounting standards, the changes from a longstanding financial instrument accounting standard to a new one, accounting standards in financial instruments classification and measurement, and equity financial instruments accounting standards in particular.

2.2.1 Financial instrument accounting standards development

Accounting for certain types of financial instruments (e.g. hybrid instruments, derivatives, etc.) had been discussed since 1973; however, it was not until 1991 that an exposure draft (ED) on financial instruments — ED 40 *Financial instruments* — was issued to cover all elements of financial instruments (Hancock, 1994). Financial instrument was defined in ED 40 as "giving rise to a financial asset of one entity and a financial liability and/or equity instrument of another entity" (Hancock, 1994, page 9).

ED 40 was revised, completed, and replaced by ED 48 *Financial instruments* in 1994. Critical responses to ED 48 came from practitioners and accounting standard setters in various member countries, and it was difficult to establish one comprehensive accounting standard of financial instruments, including recognition, measurement, and

disclosure, at once. The International Accounting Standards Committee (IASC)[3] decided to divide the financial instrument accounting project into different phases after considering the evolving practices in the use of financial instruments (IAS 39, para IN3).

International Accounting Standard (IAS) 32 *Financial Instruments: Disclosure and Presentation* adopted the disclosure and presentation portion of ED 48 and was issued in 1995 before a comprehensive standard for recognition and measurement. The International Accounting Standards Board (IASB) amended the standard after it was initially issued by the IASC. To supply various users' evaluations of the significance of financial instruments for financial reporting and risk exposure qualitatively and quantitatively, a specific accounting standard was needed to provide guidance on disclosure related to financial instruments. Therefore, IAS 32 was amended only to include financial instrument presentation content and relocate its disclosure portion to a new standard – International Financial Reporting Standard (IFRS) 7 *Financial Instruments: Disclosures* in August 2005 (Deloitte, 2021b). As a result, the IAS 32 was changed to IAS 32 *Financial Instruments: Presentation.* The principle of IFRS 7 is to provide complementary disclosure requirements in standards of financial instruments recognition, measurement, and presentation (IFRS 7, para 2). Subsequent amendments of IFRS 7 reflect changes in other financial instruments standards.

IAS 39 *Financial instruments: Recognition and Measurement*, the first comprehensive standard on financial instruments dealing with recognition, measurement, and hedge accounting, was issued in 1998 (Deloitte, 2021b; IAS 39, pg 1021). IAS 39 went through several revisions and amendments after its issuance, for example, including fair value option in June 2005, amendments for eligible hedged items in July 2008, and

[3] IASC was renamed as the International Accounting Standards Board (IASB) and took effect from 1st July 2000 (Deloitte., 2022).

changes for embedded derivatives on reclassifications of financial assets in March 2009 (IAS 39, pg 1983). However, the fundamental approach to financial instrument accounting didn't change until the development of IFRS 9 *Financial Instruments* to replace IAS 39 (IAS 39, para IN3). Figure 2.1 displays a timeline of the development of financial instrument accounting standards.

[INSERT FIGURE 2.1 HERE]

2.2.2 From IAS 39 to IFRS 9

IAS 39 has been applied for many years, but it was questioned by financial statements preparers and users regarding the difficulty in understanding, applying, and interpreting requirements in the standard (IASB, 2009a). IAS 39 has been criticised for being "complex, inconsistent with the way entities manage their businesses and risks", and for deferring "the recognition of credit losses on loans and receivables until too late in the credit cycle" (PwC, 2017, page 5). These deficiencies were brought into sharper focus during the global financial crisis. The IASB responded to the requirement of improving accounting for financial instruments and divided the project to replace IAS 39 with IFRS 9 into three main phases. The project, which was endorsed by the Group of 20 leaders (G20), aimed at enhancing the understandability and reducing complexity of financial instruments accounting (IASB, 2009a, para IN6).

The first phase of IFRS 9 was issued in November 2009 with requirements related to the classification and measurement of financial assets (IASB, 2009d). The second phase added new impairment requirements to the completed version of IFRS 9 in July 2014 (Deloitte, 2021c). The IAS 39 uses an "incurred loss model" in recognising credit

losses, and it requires impairment provision based on objective evidence of a loss or trigger event (IAS 39, para 59). The impairment model has been criticised as too late to recognise loss in firms' financial reporting and creates room to postpone losses (IASB, 2014). The weakness of delayed recognition of credit losses on financial instruments in IAS 39 was magnified during the global financial crisis. After consulting widely with financial statements users, the IASB introduced the "expected credit loss (ECL)" impairment model in IFRS 9. The ECL model is based on three stages for calculating the loan loss provisions.

Stage 1: an entity shall measure the provision based on 12-month-expected credit losses if credit risk has not increased significantly since initial recognition.

Stage 2: if a financial asset has a significant deterioration in credit quality, the provision is determined based on lifetime-expected credit losses.

Stage 3: entity shall report lifetime-expected credit losses if there are incurred losses (Engelmann and Lam Nguyen, 2023; IASB, 2019; Oberson, 2021).

The ECL model involves assessing the expected credit risk of financial instruments, considering all reasonable and supportable information, even if it is forward-looking (IFRS 9, para 5.5.4). The implementation of the ECL model promotes a timely and accurate recognition of credit losses and enhances transparency in reporting (Awuye and Taylor, 2024).

Hedge accounting requirements in IAS 39 were developed when hedging activities were not widely and sophisticatedly applied and were criticised for falling short of providing investors with essential information in firms' risk management. In the third phase, the IASB undertook a fundamental overhaul of all aspects of hedge accounting to

provide a closer alignment with risk management and a better understanding of the effect of hedging activities on firms' financial reporting (IASB, 2014). One major change for hedge accounting requirements in IFRS 9 compared to IAS 39 is the qualifying criteria for hedge accounting. For example, firstly, IFRS 9 requires more hedge effectiveness disclosure in formal designation and documentation. Secondly, IFRS 9 extends eligible hedging instruments and items. Thirdly, IFRS 9 provides more principal-based hedging effectiveness requirements rather than 80%-125% in both prospective and retrospective hedge effectiveness testing in IAS 39. Lastly, discontinuation of hedge accounting is only allowed under specific circumstances in IFRS 9 compared to voluntary discontinuity in IAS 39 (IAS 39, para 85-102; IFRS 9, para 6.4). The hedge accounting chapter was added to IFRS 9 in November 2013. However, because the IASB is still working on a separate, fair value macro hedges project, it is optional for firms to apply hedge accounting requirements in IAS 39 or IFRS 9 (PwC, 2016).

Overall, a completed and integrated accounting standard for financial instruments — IFRS 9 — was issued in July 2014, with an effective date of on or after 1st January 2018, with earlier application permitted.[4]

2.2.3 Financial instruments classification and measurement

The IASB decided to begin the post-implementation review of IFRS 9 in October 2020 after IFRS 9 became effective in 2018 (IASB, 2020b). The first stage post-implementation review focuses on financial instruments' classification and measurement, which is the

[4] In 2016, the IASB introduced a temporary exemption from applying IFRS 9 for entities whose activities are predominantly related to insurance until IFRS 17 *Insurance contracts* is effective (IASB, 2020a).

foundation of financial instruments accounting.

IAS 39 went through multiple revisions after its issuance, and this thesis focuses on the 2009 version, which was in force before the IASB issued IFRS 9. IAS 39 classifies financial instruments into four categories: 1) a financial asset or financial liability at fair value through profit or loss; 2) held-to-maturity investments; 3) loans and receivables; 4) available-for-sale financial assets (IAS 39, para 9). Each category of financial instruments classifications has its own requirements for classification, measurement, and subsequent impairment.

Under IAS 39, financial assets' classification determines the basis for their measurement. Classification and measurement for financial assets are a "combination of the nature of the instrument, its manner of use and management choice" (IASB, 2009d, page 7). A financial asset or liability is classified at fair value through profit or loss (FVTPL) when it is designated or held for trading where managers have the intention to sell it in the near term or evidence shows a short-term profit-taking (IAS 39, para 9). Held-to-maturity investments are "non-derivative financial assets with fixed or determinable payments and fixed maturity that an entity has the positive intention and ability to hold to maturity." (IAS 39, para 9) If a financial asset has fixed or determinable payments but is not quoted in an active market, it is classified in the loans and receivables category. Available-for-sale financial assets are assets that do not belong to any of the other three categories and managers intend to sell them before they reach maturity (Deloitte, 2021a).

A longstanding and widespread stakeholder view was that the financial instruments classification and measurement approach in IAS 39 was too rule-based and complex (IASB, 2021b). Managers' intention to hold the financial assets is critical in their

initial classification, which creates space for earnings manipulation (Barth et al., 2017; Dong and Zhang, 2018). Many application issues focusing on financial assets' classification and measurement, including the complicated reclassification rules, have been raised during IAS 39 implementation.

IFRS 9 reduces the financial assets classification and measurement categories by providing a clearer rationale for financial assets' classification and measurement and is more principle-based (IASB, 2009d). Financial instruments classification and measurement are unified in IFRS 9 that how the financial assets are measured is the way they are classified (PwC, 2017). IFRS 9 classifies financial assets and financial liabilities separately and embeds classification into subsequent measurement, which reduces complexity. Financial assets are classified and measured at: 1) amortised cost;[5] 2) fair value through other comprehensive income (FVTOCI); and 3) FVTPL.

IFRS 9 introduces two tests to determine how financial assets should be classified and measured. One is the business model test, which means "how an entity manages its financial assets in order to generate cash flows" (IFRS 9, para B4.1.2A). For example, an entity may hold an asset in a business model whose objective is achieved by selling the asset, collecting contractual cash flows, or both. The business model test does not rely on management intentions and is a matter of fact considering information on "how cash flows were realised in the past, along with all other relevant information" (IFRS 9, para B4.1.2B). After initial recognition, only when the entity's business model has changed, are financial assets allowed to be reclassified, which is an uncommon event (IASB, 2014). The other is the contractual cash flow characteristics test. Once a business model has been

[5] A financial asset is measured at amortised cost, which means that the amount is measured at "initial recognition minus the principal repayments, minus the cumulative amortisation using the effective interest method of any difference between the initial amount and the maturity amount, adjusted for any loss allowance." (IFRS 9, pg A413)

identified, managers should consider whether the contractual cash flows of a financial asset are solely payments of principal and interest (SPPI). Only financial assets that pass the SPPI cash flow test can be classified as amortised cost or FVTOCI (IFRS 9, para B4.1.7). With the two tests, IASB has the intention of providing a better understanding of the amounts, timing and uncertainty of future cash flows on financial assets and business model-driven reclassification rules.

According to feedback received by the IASB, classification and measurement requirements for financial liabilities worked well in IAS 39; the substantial requirements remain unchanged in IFRS 9 (IASB, 2021b). Thus, most financial liabilities are measured at amortised cost with the FVTPL option when particular criteria are met (IASB, 2014). The only issue that has been consistently raised by stakeholders regarding financial liabilities is the gains and losses arising from changes in an entity's own credit risk. These "own-credit risk" changes increase entities' profit or loss volatility, and many financial information users found the result counterintuitive and confusing. IFRS 9 revised the requirement that fair value changes of an entity's own credit risk be recognised in OCI rather than profit or loss in IAS 39. Table 2.1 displays how financial instruments are classified and measured under IAS 39 and IFRS 9, respectively.

[INSERT TABLE 2.1 HERE]

2.2.4 Equity financial instruments accounting

Depending on the level of influence or control exerted by the investor, equity investments may be classified as subsidiaries, associates, or financial instruments. Subsidiaries are subject to full consolidation, associates are accounted for using the equity method, while

other equity investments are treated as financial instruments (BDO, 2021).

Equity financial instruments are investments in another entity where any contract evidences a residual interest in the assets of an entity after deducting all of its liabilities (equity financial assets, hereafter "EFAs") (IAS 32, para 11). The default classification for EFAs under IAS 39 is available-for-sale assets, and the fair value gains or losses (FVGL) on EFAs are presented at OCI (Taylor, 2017a). EFAs can be measured at cost if there is no quoted price in an active market. When derecognised, cumulated FVGL on EFAs can be recycled from equity to profit or loss (IAS 39, para 43 and 46). However, IFRS 9 removes the available-for-sale assets category, and EFAs are not subject to the business model test since they would never pass the SPPI test. IFRS 9 changes the default EFA classification to FVTPL but allows "an entity make an irrevocable election at initial recognition for particular investments in *equity instruments* that would otherwise be measured at fair value through profit or loss to present subsequent changes in fair value in other comprehensive income" (IFRS 9, para 4.1.4).

IFRS 9 mandates all fair value measurement for EFAs, and EFAs that previously measured at cost under IAS 39 can be measured at level 3 fair value hierarchy. IFRS 9 allows the irrevocable classification of EFAs at FVTOCI at initial recognition. Once FVTOCI is chosen, FVGL on EFAs cannot be recycled from equity to profit or loss when derecognised (IFRS 9, para 5.7.5). Detailed EFA accounting is discussed in each study of this thesis. Table 2.2 displays the changes in EFA accounting from IAS 39 to IFRS 9.

[INSERT TABLE 2.2 HERE]

2.3 Literature Review

Standard setters and various stakeholders have been calling for academic research on the effectiveness and consequences of IFRS 9 ever since the issuance of the standard (Deloitte, 2021d). This study reviews literature that focuses on IFRS 9 in the field of both accounting and finance. I use a keyword approach in searching related articles, incorporating terms of IFRS 9 either in the title or keywords, published in highly ranked journals.[6] Journals are sourced from the Australian Business Deans Council (ABDC) journal quality list, which is commonly used as a measure of journal quality (De Villiers and Hsiao, 2018).[7] Limiting the scope of journals helped us to better understand the importance of the topics analysed. In line with Awuye and Taylor (2024), additional studies are explored by reviewing the reference lists of selected articles. A total of 43 articles have been reviewed, ranging from 2014 to 2024. I organised the reviewed articles based on the development phases of IFRS 9, from research that discusses IFRS 9 as a whole to classification and measurement, impairment and risk management, and hedge accounting. Table 2.3 provides a summary of the literature reviewed in this section.

[INSERT TABLE 2.3 HERE]

2.3.1 Research on IFRS 9 as a whole

I identify 13 academic articles discussing IFRS 9 from the perspectives of its benefits, costs, and standard-setting process. One group of literature finds a reduction in firms' risk

[6] The keywords used in searching related articles include "IFRS 9", "IAS 39", "IAS 32", "IFRS 7", "Financial instruments", "available-for-sale", "securities", "ECL", "credit loss", etc. I manually check the abstract and introduction to exclude articles that are not related to IFRS 9.

[7] 36 (83.7%) of the articles reviewed are published in B or above B journals. Only 7 articles are published in a C journal (the majority from the Journal of Financial Reporting and Accounting) but highly related to the topic.

and an improvement in information usefulness after the implementation of IFRS 9. After a systematic review of academic research on the implementation effects of IFRS 9, Awuye and Taylor (2024) highlight some of the challenges that exist in applying IFRS 9, including data-related issues, forecasting uncertainties and the interaction of IFRS 9 with other regulatory standards. However, there is an improvement in risk management with stronger market discipline and transparency after IFRS 9 application despite the complexity of the standard. Consistent with Awuye and Taylor's (2024) argument, Kyiu and Tawiah (2023) find a reduction in banks' risk following the implementation of IFRS 9 after examining 666 banks across 61 countries from 2016 to 2019. Based on the findings, they attribute the risk decrease to the ECL model, which applies a forward-looking provision and provides a more timely and transparent loss recognition (Kyiu and Tawiah, 2023).

Orbán and Tamimi (2023) received a total of 120 questionnaires from academics, auditors, and bankers, who are experts in financial reporting standards in Europe. They find that IFRS 9 increases transparency along with the expanded disclosure requirements and enhances banks' confidence by gradually recognising expected credit losses (Orbán and Tamimi, 2023). However, they also find a significant positive relationship between IFRS 9 and bank risks during the COVID-19 pandemic, indicating the default of loan borrowers increases banks' risks that are not mitigated by IFRS 9 (Orbán and Tamimi, 2023).

Some literature compares IAS 39 and IFRS 9 in providing information usefulness. Mechelli et al. (2020) examine 110 European financial firms' annual reports in the transition year and compare the value relevance of the book value of equity between IAS 39 and IFRS 9. They find that both standards provide value relevance; however, IFRS 9

adds additional useful information for investors' decision making, implying the high quality of the standard-setting process and effectiveness of IFRS 9 (Mechelli et al., 2020).

Guo et al. (2023) provide evidence in China that the new impairment model under IFRS 9 increases value relevance in financial firms and firms with Big Four auditors. Zampella and Ferri (2024) show that IFRS 9 provides value relevance for banks in Europe, particularly in countries with good governance indicators and high bank authority strength. They document that differences in the implementation of IFRS 9 across countries suggest the varying capacities of the regulators in each jurisdiction to enforce prudential regulations and accounting standards (Zampella and Ferri, 2024).

After examining banks in 17 Asia-Pacific countries, Utami et al. (2023) find that IFRS 9 increases assets' opacity and that earnings forecast and information conveyancing may be affected. They argue that the mechanistic requirements in the standard enable managers to engage in a variety of volatile economic considerations, causing a blurring of information, resulting in a higher opacity for assets and earnings components in IFRS 9 than in other practices (Utami et al., 2023). However, the accounting information provided by IFRS 9 continues to be relevant to future earnings and share returns (Utami et al., 2023).

With challenges in applying the rules, IFRS 9 implementation has some potential costs and unfavourable effects on firms. Fang et al. (2022) examine the potential cost of the Chinese equivalent IFRS 9 adoption in non-financial firms. They find that firms sell their available-for-sale assets prematurely to avoid being adversely affected by the new standard and pay considerably higher audit fees one year after the implementation of the new standard (Fang et al., 2022). Fang et al. (2022) document that the implementation of IFRS 9 is associated with challenges and incurred additional costs, which mainly come

from the exclusion of the cost option in measuring unquoted investments and the ECL model.

Similarly to Fang et al. (2022), Guo et al. (2023) document two challenges for Chinese firms in applying IFRS 9. One is the difficulty in applying the new classification rules for equity instruments. Firms respond by selling their available-for-sale assets and start making fund investments instead (Guo et al., 2023). The other difficulty comes from estimating impairments by using the new ECL model, in which approximately 70% of firms do not report application date impact on the impairment estimation in comparison to the impairment under IAS 39 (Guo et al., 2023).

Norouzpour et al. (2023) examine the changes in earnings management and capital management after the adoption of IFRS 9 in European banks and find that capital management increased after IFRS 9; nevertheless, earnings management only increased for banks in countries with weak regulatory quality.

After examining firms from 50 countries, Li et al. (2024) document that IFRS 9 adoption has a negative effect on firms' bank debt reliance compared to public debt. IFRS 9 requires intense monitoring of borrowers to record timely credit losses, which makes firms experience more costly monitoring from banks (Li et al., 2024). With the implementation of IFRS 9, firms may switch from bank debt to public debt financing to avoid costly bank monitoring (Li et al., 2024).

Some research examines the standard-setting development of IFRS 9 and the market reaction to the new standard. Before binding for European Union (EU) based companies, the IFRS and its interpretations need to wait for an additional endorsement procedure in the EU. Bischof and Daske (2016) illustrate how the examination criteria can be applied in the endorsement practice of IFRS 9 in the EU. They argue that there is

insufficient evidence to reject the endorsement of IFRS 9 based on the qualitative criteria required for financial information, including understandability, relevance, reliability and comparability (Bischof and Daske, 2016). Further, Bischof and Daske (2016) document that the cost-benefit trade-off for the implementation of IFRS 9 in various stakeholders is a political decision. The EU is able to maintain its political influence on the IASB's standard-setting with the vagueness of endorsement criteria and discretion in the endorsement decision (Bischof and Daske, 2016).

Using an event study, Onali and Ginesti (2014) examine the market reaction to the adoption of IFRS 9 in European firms and find that investors have faith that IFRS 9 has the ability to address the issues inherent in IAS 39. The overall positive reaction to IFRS 9 is pronounced in countries with weaker rule of law and less variance between local GAAP and IAS 39 (Onali and Ginesti, 2014). Similarly, Onali et al. (2017) analyse market reaction over 22 events throughout the development of IFRS 9 from 2009 to 2014 in listed firms across 17 European countries. They find that market-adjusted returns are positively associated with lower information asymmetry and higher information quality, and financial firms respond less favourably to the IFRS 9 adoption events compared to non-financial firms (Onali et al., 2017).

Academic research has several implications for various stakeholders. Firstly, a reduction in banks' risk and providing additional useful information for investors' decision making after IFRS 9 implementation indicates the effectiveness of the new standard rather than a standard overreach (Kyiu and Tawiah, 2023; Mechelli et al., 2020). The new impairment model under IFRS 9 increases value relevance for financial companies and companies with Big Four auditors (Guo et al., 2023). International investors may benefit from the new standard, which is perceived as shareholder wealth

enhancing and increasing comparability across European firms (Onali and Ginesti, 2014). Allowing the gradual recognition of credit losses, IFRS 9 enhances European banks' confidence but has limited impact on reducing bank risks during the COVID-19 pandemic (Orbán and Tamimi, 2023).

Secondly, users may be mindful of the accounting information when implementing IFRS 9 since the opacity of assets and earnings components increased (Utami et al., 2023). IFRS 9 adoption may not result in a higher accounting quality for all firms. Thus, policymakers need to offer additional guidance to assist investors in comprehending the rules of IFRS 9 (Onali et al., 2017). Regulators may enhance the quality of their regulations to govern the behaviour of banks in managing their earnings and capital after the adoption of IFRS 9. Standard setters might set a limit on the use of forward-looking information (Norouzpour et al., 2023).

Thirdly, IFRS 9 increases bank monitoring, leading to a reduction of bank debt reliance in firms. Switching from bank debt to another source of debt may adversely affect firms' investment and labour employment (Li et al., 2024). The challenges in applying the classification and measurement rules under IFRS 9 may change firms' equity investment strategies (Guo et al., 2023).

Fourthly, IFRS 9 cannot reasonably be rejected in the EU endorsement procedure and, in the long run, the implementation of IFRS 9 will not place a substantial financial burden on any one party, with the exception of the insurance industry (Bischof and Daske, 2016). IFRS 9 should reflect different principles between non-financial and financial firms. Allowing the cost measurement and continuing the incurred loss model in non-financial firms may reduce costs associated with applying IFRS 9 (Fang et al., 2022).

Lastly, existing research on IFRS 9 mainly focuses on the European context and

financial firms. Further research on the implementation challenges and consequences in other jurisdictions and non-financial firms may help standard setters have a full picture of the IFRS 9 implementation (Awuye and Taylor, 2024).

2.3.2 Financial instruments classification and measurement

Literature discussing the classification and measurement of IFRS 9 is nascent. I identify five studies that discuss the classification and measurement of financial instruments under IFRS 9 from their application and usefulness perspectives.

Using a sample of 139 banks from 28 European countries from 2014 to 2022, Kvaal et al. (2023) find that the standard changes for classification and measurement in IFRS 9 have a limited impact on the structure of the balance sheet. Kvaal et al. (2023) argue that the requirements for classification and measurement under IFRS 9, specifically the business model test and contractual cash flow characteristics test, may result in a better reflection of the timing, amount, and uncertainty of future cash flows than IAS 39.

Zang et al. (2022) provide descriptive evidence on the use of equity financial instruments in Australia-listed firms and find that FVTOCI dominates the classification for equity instruments both before and after IFRS 9, indicating the limited impact of standard changes on firms' practice. They document that the increase in the use of FVTPL after IFRS 9 is attributed to the improvement in disclosure clarity of classification location.

Löw and Erkelenz (2022) examine the trend of long-term and short-term investments in European banks and find that IFRS 9 has a limited impact on investment maturity. Given that the FVTOCI option is not important for equity instruments in banks,

they suggest that the IASB eliminate this classification category (Löw and Erkelenz, 2022). The criticism that the classification and measurement changes made to IFRS 9 have increased earnings volatility cannot be ascertained (Löw and Erkelenz, 2022).

Pinto and Morais (2022) examine the determinants and usefulness of equity instruments' classification on a sample of the top 100 UK and 50 European firms (FTSE 100 and EURO STOXX 50). They find that firms' financial leverage drives their reclassification from available-for-sale assets to FVTOCI when transitioning from IAS 39 to IFRS 9. Both CEO variable compensation and level 3 fair value measurement affect the percentage of equity instruments classified as available-for-sale assets before IFRS 9, while level 3 fair value hierarchy becomes the only factor that determines equity instruments' classification after IFRS 9 (Pinto and Morais, 2022). FVGL on equity instruments presented at OCI becomes value relevant after IFRS 9, implying that IFRS 9 increases investors' attention to the changes in the fair value of equity instruments as recognised in OCI (Pinto and Morais, 2022).

Ben Ltaief and Moalla (2023) examine the impact of different financial instrument classifications on firm value after the implementation of IFRS 9 in a sample of Middle Eastern and North African banks. They find that, under IFRS 9, firm value is positively related to FVTOCI assets and negatively associated with FVTPL and amortised cost assets, making the overall effect of IFRS 9 implementation on firm value insignificant (Ben Ltaief and Moalla, 2023). IFRS 9 highlights the importance of financial asset classification choice and gives the bank some direction in managing their financial assets to increase their value (Ben Ltaief and Moalla, 2023).

These academic studies express a consistent view that the classification and measurement changes in IFRS 9 are working as intended. With the standard changes in

classification and measurement, IFRS 9 provides a better reflection of firms' future cash flow (Kvaal et al., 2023). The FVTOCI option in classifying equity instruments is applied appropriately per IFRS 9. The potential disruption of the standard changes is immaterial to the majority of firms (Ben Ltaief and Moalla, 2023; Zang et al., 2022). IFRS 9 improves the disclosure of equity instruments' classification location and has not resulted in an observable increase in earnings volatility (Löw and Erkelenz, 2022; Zang et al., 2022). Evidence on the prohibition of recycling FVGL on EFAs is that it does not adversely impact the usefulness of financial information, and supports the IASB's decision to recognise FVGL only once (Pinto and Morais, 2022).

Academic research also proposes some improvements for consideration. Firstly, a single classification and measurement model based on fair value would provide the most relevant information and simplify complexity and application in firms (Kvaal et al., 2023). The associated disclosure for fair value measurement mitigates the limitations of amortised cost that the disclosure requirements may be developed along with the fair value measurement (Kvaal et al., 2023). Secondly, as required in IFRS 7, firms may need to disclose the reason for choosing the alternative EFA classification location and dividends recognised during the period. However, inadequate disclosure in firms suggests that the IASB may offer more explanations and illustrations to improve the disclosure and ensure the standards are complied with (Pinto and Morais, 2022; Zang et al., 2022). It is recommended that disclosure of the fair value movements for equity instruments that are classified as FVTPL be made mandatory (Pinto and Morais, 2022). Lastly, standardised and mandatory disclosure requirements for financial assets' residual maturity breakdown may improve transparency and comparability among banks that may be considered to be included in the IFRS 7 (Löw and Erkelenz, 2022).

2.3.3 Financial instruments impairment and risk management

One of the major changes from IAS 39 to IFRS 9 is the introduction of the new ECL impairment model. Under the incurred credit loss model in IAS 39, credit losses can only be recognised until there is evidence of a trigger event, which has been criticised for delaying the recognition of loan losses, especially during the global financial crisis (Goh et al., 2021; IASB, 2014). The ECL model under IFRS 9 requires loss allowance to be recognised based on expected credit losses when the credit risk is increased subsequent to initial recognition (IFRS 9, para 5.5.1 and 5.5.4). The impairment model changes may influence firms' financial reporting and risk management, and more than half of the academic research reviewed in this study discusses the impairment approach in IFRS 9. The impact of the new impairment approach is greater on financial firms than on other firms, with banks being the focus of existing research.

The ECL model improves timely recognition of loan loss provisions with the possible increase in earnings management. Using Greek government bonds of an EU bank as an example, Gebhardt (2016) explains the impairment treatment and how to apply the impairment model under IAS 39 and IFRS 9 in detail. They point out that the impairment rules in IAS 39 do not reflect credit losses that are expected to be incurred after the reporting date. However, the ECL model in IFRS 9 lacks readily measurable economic correspondents and relies heavily on management expectations for the default probability, providing more opportunities for earnings management (Gebhardt, 2016). Earnings management behaviour through loan loss provisions following IFRS 9 is detected in European banks, which experience less income volatility after IFRS 9 adoption and cannot be suppressed by prestigious auditors (Nnadi et al., 2023). Nevertheless, IFRS 9

provides an identical model for all financial assets and improves impairment rules since credit losses can be recognised earlier (Gebhardt, 2016). While there is an improvement in accounting standards for loan loss provision under IFRS 9, accounting quality may not necessarily improve (Nnadi et al., 2023).

Using a sample of 1416 quarter observations for 69 banks across 24 countries, Oberson (2021) documents that the ECL model under IFRS 9 improves the timely recognition of loan loss provisions. However, the greater accounting discretion inherent in the ECL model increases earnings smoothing via loan loss provisions after IFRS 9 adoption. The relevance of loan loss provision in credit default swap (CDS) pricing is improved after IFRS 9 adoption but mostly in banks with weaker pre-IFRS 9 information environments (Oberson, 2021). Strong governance contributes to the relevance of loan loss provision in CDS pricing after IFRS 9 (Oberson, 2021).

Using experiments, Gomaa et al. (2019) examine the efficacy of replacing the incurred loss model with the ECL model. They find that the ECL model increases flexibility and enables managers to incorporate the likelihood of credit loss information such that both the amount and adequacy of credit loss provisions are increased (Gomaa et al., 2019). However, the ECL model increases management discretion, which may result in higher earnings management related to compensation schemes (Gomaa et al., 2019).

Goh et al. (2021) examine whether accounting conservatism impacts the recognition of loan loss provisions differently between IAS 39 and IFRS 9. Using an experimental setting, Goh et al. (2021) argue that the ECL model increases timely recognition of credit losses in banks but allows a greater managerial discretion. They find that when there is a higher accounting conservatism, firms are more likely to recognise a

loan loss provision and a larger amount with the ECL model (Goh et al., 2021). However, given a more rule-based impairment model in IAS 39, accounting conservatism does not impact the provision of loan losses (Goh et al., 2021). Similarly to Goh et al. (2021), Du et al. (2023) conduct an experiment with 72 bank managers and find that with the ability to incorporate forward-looking expectations in estimating the ECL, bank managers are less likely to adjust downward credit risk for optimistic projections when there is a default history. Combined with managers' preference for short forecast horizons, Du et al. (2023) document unconditional conservatism of the new ECL model.

In the analysis of 293 banks from 74 countries, López-Espinosa et al. (2021) find that the ECL model is more predictive of future bank risk than the incurred credit loss model, particularly in countries experiencing credit deterioration. They document that the disclosure of the impact of IFRS 9's first application leads to lower stock returns and higher changes in credit default swap spreads (López-Espinosa et al., 2021). However, they do not find evidence in supporting more earnings or capital management through using the loan loss provision discretion; therefore, the ECL model results in more informative provisions (López-Espinosa et al., 2021).

Some studies examine the effect of COVID-19 on the application of the ECL model. Barnoussi et al. (2020) document the challenges banks face when applying the ECL model during the COVID-19 pandemic. The ECL model needs to estimate potential default risk and future macro-economic factors, which are subject to considerable uncertainty in the event of a pandemic (Barnoussi et al., 2020). They note that the types of assumptions made, sensitivity analyses and other operational aspects of the ECL model are a "black box" for parties outside of banks and that more disclosure is important to investors, particularly in challenging times (Barnoussi et al., 2020).

Engelmann and Lam Nguyen (2023) assess the effect of COVID-19 on banks' loan loss provisions under IFRS 9 and find that loan loss provision differences exist among different regions of the world. With the exception of China, which maintains stable total loan loss provisions and has slightly lower lifetime expected losses, total loan loss provisions increased globally after COVID-19, while credit risk parameters are consistently used in estimating the loan loss provision (Engelmann and Lam Nguyen, 2023). Engelmann and Lam Nguyen (2023) provide evidence that banking systems in Canada, Oceania, and Western Europe are affected more severely by COVID-19 than China in terms of the preparation for the credit shock. Similarly to Engelmann and Lam Nguyen (2023), Salazar et al. (2023) find that credit risk parameters in calculating the loan loss provisions remain stable during the COVID-19 period, and the provisions moratoria during COVID-19 reduce the substantial ECL provision impact on banking risk.

Evidence on the ECL model under IFRS 9 in lessening procyclicality compared to IAS 39 is mixed.[8] Moderating excessive procyclicality in the loan loss provisions — which are especially tied to credit risk — is crucial for risk management in banks (Olszak et al., 2017). Salazar et al. (2023) examine in detail the improvements made to loan loss provisions in anticipation of future credit risk in European banks and find that the stage 2 provision, which requires lifetime expected loss provision if there is significant deterioration in credit quality, is the key to lessening the procyclical effect of IAS 39. Evidence from Spanish banks shows that tier 1 regulatory capital is increased with a timelier recognition of credit losses after the implementation of IFRS 9, and the negative

[8] Procyclicality refers to the propensity of the financial system to trigger booms and busts and, more precisely, to those mechanisms that reinforce the financial movements. Loan loss provisions decline in economic booms and rise during recession, showing procyclical behaviour (Borio., 2019; López-Espinosa and Penalva., 2023).

impact on lending under the COVID-19 shock only occurs for small banks after the adoption of IFRS 9, suggesting IFRS 9 is less procyclical compared to IAS 39 (López-Espinosa and Penalva, 2023).

Both Hansen et al. (2024) and Pastiranová and Witzany (2022) discuss the impact of IFRS 9 on the procyclicality of loan loss provisions, which is one of the factors that contribute to financial stability. Hansen et al. (2024) analyse 51 banks from 12 European Monetary Union countries and find that loan loss provisions under IFRS 9 only dampen procyclicality after the COVID-19 exogenous shock. Pastiranová and Witzany (2022) examine banks from 28 EU member countries and document that the ECL model under IFRS 9 incorporates forward-looking information of macroeconomic forecasts, and debtors are expected to behave countercyclically. However, their results cannot reject the hypothesis of existing estimates assumption about the procyclical effects of IFRS 9 (Pastiranová and Witzany, 2022). Pastiranová and Witzany (2022) interpret that during an economic downturn, banks' predictions and estimates used in the ECL model might be imperfect such that the credit losses may not be recognised in a timely manner.

The standard setting of financial instruments is not only a technical issue but also a political process and is closely related to regulators' supervision. Novotny-Farkas (2016) discusses the interaction of the new expected credit loss provision approach under IFRS 9 with supervisory rules and financial stability in the European Union from minimum regulatory capital requirements, supervisory review and market discipline perspectives. He concludes that the ECL model in IFRS 9 incorporates a larger set of information and addresses certain supervisory concerns (Novotny-Farkas, 2016). The earlier recognition of expected credit loss and extended disclosure requirements enhance transparency that is likely to contribute to more effective market discipline (Novotny-

Farkas, 2016). However, he notes that the new impairment model increases managerial judgement and discretion compared to the model in IAS 39 (Novotny-Farkas, 2016).

Standard-setters and regulators may not always have the same objective. The Basel Committee on Banking Supervision (BCBS) introduced a capital transitional arrangement (CTA) to provide banks an opportunity to delay the full application of the ECL model in IFRS 9 to adapt their risk management (Dong and Oberson, 2022; Mora, 2022). CTA aims to attenuate the potential adverse consequences of the ECL model (i.e. a potential capital shock) that allows banks to take up to five years to rebuild their capital resources. After examining 101 banks across 26 European countries from 2016 to 2019, Dong and Oberson (2022) find that the ECL model may influence bank risk-taking, while the CTA policy may decrease banks' exposure to systematic risk. The CTA policy helps smooth transfer to the ECL model under IFRS 9, which prevents a sharp impact on banks' regulatory capital (Dong and Oberson, 2022).

According to a study in a developing country, there is no expectation of a material decline in equity following the initial adoption of IFRS 9, and the impact of the new ECL provisions is limited (Dib and Feghali, 2021). Dib and Feghali (2021) suggest that applying conservative provisions as required by local regulators during the previous few years may help lessen the possible impact caused by the ECL model once IFRS 9 is implemented.

Stander (2021) uses simulation studies to analyse sources of volatility in the impairments after IFRS 9 adoption in South Africa. Incorporating forward-looking information in the ECL model makes impairments volatility less than straightforward to explain. Stander (2021) highlights the need for strong model risk governance since model flaws can have a detrimental effect on impairments and lead to reputational risk.

Literature also discusses the ECL model from a standard development perspective. After analysing 327 comment letters, Hewa et al. (2020) argue that the IASB remains independent in the due process when developing the ECL model in IFRS 9 and that the influence from interest groups is not significant. However, the IASB incorporates interest groups' inputs to make the standard less complex, more operational and comparable. Orthaus and Rugilo (2023) analyse 750 comment letters the IASB received related to the developing process of the impairment requirements from 2008 to 2014 and revisit how the ECL model goes from being reluctant to be included in the revised impairment model due to their conceptual shortfalls to becoming part of IFRS 9. They demonstrate the importance of constituents to safeguard the IASB's independence (Orthaus and Rugilo, 2023).

Drawing on interviews with key European actors and 683 comment letters from constituents to the IASB, Pucci and Skærbæk's (2020) study documents that the forward-looking expected loss approach under IFRS 9 is a failure of a collaborative initiative between the IASB and FASB as well as an unsuccessful attempt to establish an ideal-type model. They demonstrate how a standard-setting objective that is based on financial economics is approximated while creating linkages with other matters of concern, and the 12-month loss horizon is a tolerable solution in standard-setting (Pucci and Skærbæk, 2020).

An overview of the standards and proposals related to the new credit loss model development in both IASB and FASB is given by Hashim et al. (2019). Given difficulties in recognising credit losses in a timely manner in standard-setting, the IASB and FASB are unable to achieve convergence in developing a credit loss model, such that the IASB issued the ECL model independently (Hashim et al., 2019). Considering the issues arising

during the development of the impairment model, Hashim et al. (2019) propose that a more straightforward route from the ECL model could lead to an improvement in the accounting method for credit losses.

Academic research has some implications for regulators, standard setters, companies and various stakeholders. Firstly, extant research agrees that though impairment still seems "little" and "late", the impairment requirements are improved in IFRS 9 compared to IAS 39 since credit losses are recognised earlier and in a more comprehensive way (Gebhardt, 2016).

Secondly, the ECL model allows more discretion to managers and the amount of impairment can be affected by accounting conservatism (Goh et al., 2021). Greater discretion in the ECL model makes managers smooth earnings aggressively through loan loss provision, and strong governance is imperative in the relevance of loan loss provision for CDS pricing (Oberson, 2021). Bank regulators should pay attention to the adverse effects of managers' unintentional bias from unconditional conservatism in incorporating forward-looking information in ECL estimation (Du et al., 2023). Regulators may need to identify additional tools to monitor earnings management practices (Nnadi et al., 2023). Standard setters may restrict the extent to which managers can use forward-looking information in credit loss provisions and reduce managers' ability to manage earnings (Gomaa et al., 2019). New audit standards or procedures may be introduced to take the tendency of earnings management into account (Gomaa et al., 2019).

Thirdly, significant regional variations exist in the world for the expected credit loss provisions under IFRS 9 (Engelmann and Lam Nguyen, 2023). When economic conditions worsen, ECL is more important for understanding how accounting rule changes in procyclicality and may amplify the crisis in the absence of regulatory and

supervisory intervention (López-Espinosa et al., 2021). Though the ECL model increases timely recognition of loan loss provisions, caution is needed before concluding that IFRS 9 is less procyclical than IAS 39 (López-Espinosa and Penalva, 2023; Salazar et al., 2023). Regulators and standard setters may need to increase the quality of ECL model and apply stress tests in adverse scenarios to help address the procyclicality (Hansen et al., 2024; Pastiranová and Witzany, 2022).

Fourthly, there are some practical difficulties in setting an idea-type impairment approach, and it is important to embed value-usefulness of financial reporting into standard-setting (Pucci and Skærbæk, 2020). In the event of exceptional economic circumstances, the ECL model can be developed in a radical way rather than another, less aggressive route (Hashim et al., 2019). The IASB remains independent by incorporating inputs from various interest groups when developing the ECL model in IFRS 9 (Hewa et al., 2020). Constituents are important to preserve the IASB's independence (Orthaus and Rugilo, 2023).

Fifthly, applying the expected loss rules properly and consistently determines whether or not the model will yield the expected benefit. Bank regulators play an important role in harmonising supervisory practices and consistent application of the new impairment model in IFRS 9 (Novotny-Farkas, 2016). Prudent provision requirements from the regulators may help decrease the impact of the ECL model on banks' equity (Dib and Feghali, 2021). A transitional policy, such as the CTA, can be used to bridge the gap between different objectives of standard-setters and regulators (who are mainly concerned with the provision of information and financial stability, respectively) in applying the ECL model in IFRS 9 (Dong and Oberson, 2022; Mora, 2022).

Lastly, full and informative disclosure of the assumptions, sensitivity analyses,

and other estimations made in the ECL model in banks is important to financial statement users, especially at the time of the COVID-19 pandemic (Barnoussi et al., 2020). Given the complex nature of the ECL model, greater disclosure may reduce information asymmetries and is viewed positively on regulators and investors (Stander, 2021). Regulators and standard setters need to provide more clarification and improvement in the wording of the terminology in standards since some terms are used inconsistently (Salazar et al., 2023).

2.3.4 Hedge accounting

Entities have the accounting policy option to stick with the hedge accounting standards of IAS 39 rather than the new requirements in IFRS 9 until the IASB's macro hedge accounting project is finalised (Müller, 2020; PwC, 2016; Taylor, 2017b). The implementation and effect of new hedge accounting requirements in IFRS 9 on firms is under research. I identify three studies that discuss hedge accounting in IFRS 9 from the perspectives of its impact on decision making, portfolio earnings, and audit cost.

Gumb et al. (2018) interview 48 treasurers from the French Association of Corporate Treasurers and find that the mandatory changes in accounting standards for derivatives from IAS 39 to IFRS 9 impact corporate treasurers' economic decisions, which is a complex, nuanced and dynamic learning process. Treasurers' main concern is an increase in earnings volatility given that earnings may be managed through an increase in the use of OCI as an alternative to net income (Gumb et al., 2018).

Applying a Monte Carlo transaction-based simulation approach, Müller (2020) analyses the consequences of hedge accounting changes between IFRS 9 and IAS 39 on

portfolio earnings. The simulation results show that applying hedge accounting rules in IAS 39 may lead to higher portfolio earnings volatility in the time period of the hedging relationship compared to IFRS 9 (Müller, 2020). However, whether to switch from IAS 39 to IFRS 9 hedge accounting depends on firms' specific risk management policy and objectives (Müller, 2020).

Jiang and Ye (2024) provide evidence of an audit fee reduction in non-financial firms after applying the new hedge accounting rules in the Chinese equivalent of IFRS 9. They document that the loosened hedge accounting qualifications in IFRS 9 may help effective use of hedge accounting in Chinese non-financial firms that may lead to a reduction of audit work (Jiang and Ye, 2024). However, the favourable effect of IFRS 9 is only significant in firms with better corporate governance and stronger external monitoring (Jiang and Ye, 2024).

These studies provide early evidence of the impact and consequences of hedge accounting rule changes in IFRS 9 that are useful to standard setters, regulators, managers, and investors. The change in accounting standards affects managerial behaviour, which may have a negative impact on the real economy (Gumb et al., 2018). However, a partially-ineffective hedging relationship does not necessarily result in an earnings decrease compared to a fully-effective counterpart (Müller, 2020). Improvements in accounting standards alone may be insufficient to produce positive results for firms, and efforts to strengthen internal and external monitoring systems are also important (Jiang and Ye, 2024). Overall, there is a lack of evidence on the impact of hedging standard changes in IFRS 9, and further research is needed (Awuye and Taylor, 2024).

2.4 Research Framework

Drawing from the standard-setting institutional background and IFRS 9 literature, research questions for this thesis are identified in Figure 2.2. After reviewing the literature on IFRS 9, there is a lack of evidence on the effect and consequences of classification and measurement standard changes for equity financial instruments on firms. My first empirical study (Chapter 3) uses a sample of ASX 300 firms to examine the usage of EFAs in the IFRS 9 adoption year and one year before adoption. This study provides a picture of how firms use EFAs and whether it changes after the adoption of IFRS 9. Further, I provide evidence on the effect of EFA classification choice on firms' financial ratios and firms' characteristics in choosing alternative EFA classification locations.

With the possibility of using the EFA classification choice opportunistically (Barth et al., 2017; Lu et al., 2023), I then examine what drives firms' EFA classification choice and whether it changed after IFRS 9 (Chapter 4). Understanding the value relevance of EFA information provides further evidence of the importance of the accounting standard changes to investors. Lastly, I examine whether there is an additional cost incurred in firms to hold an EFA and, if so, where the cost comes from and whether it changed after IFRS 9 (Chapter 5). Figure 2.2 displays the research framework of this thesis.

[INSERT FIGURE 2.2 HERE]

Figure 2:1 Timeline of financial instrument accounting standards development

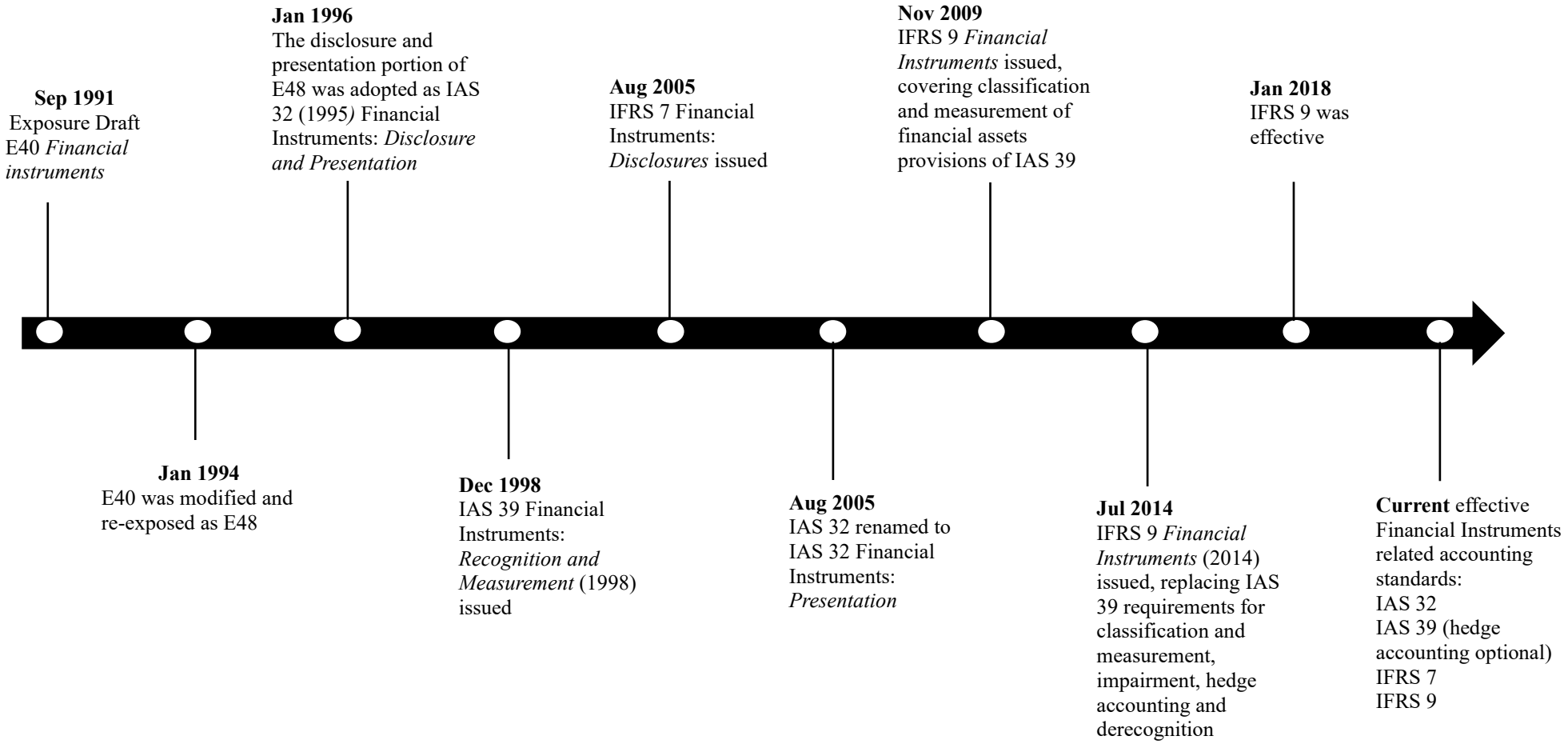

Figure 2:2 Research framework

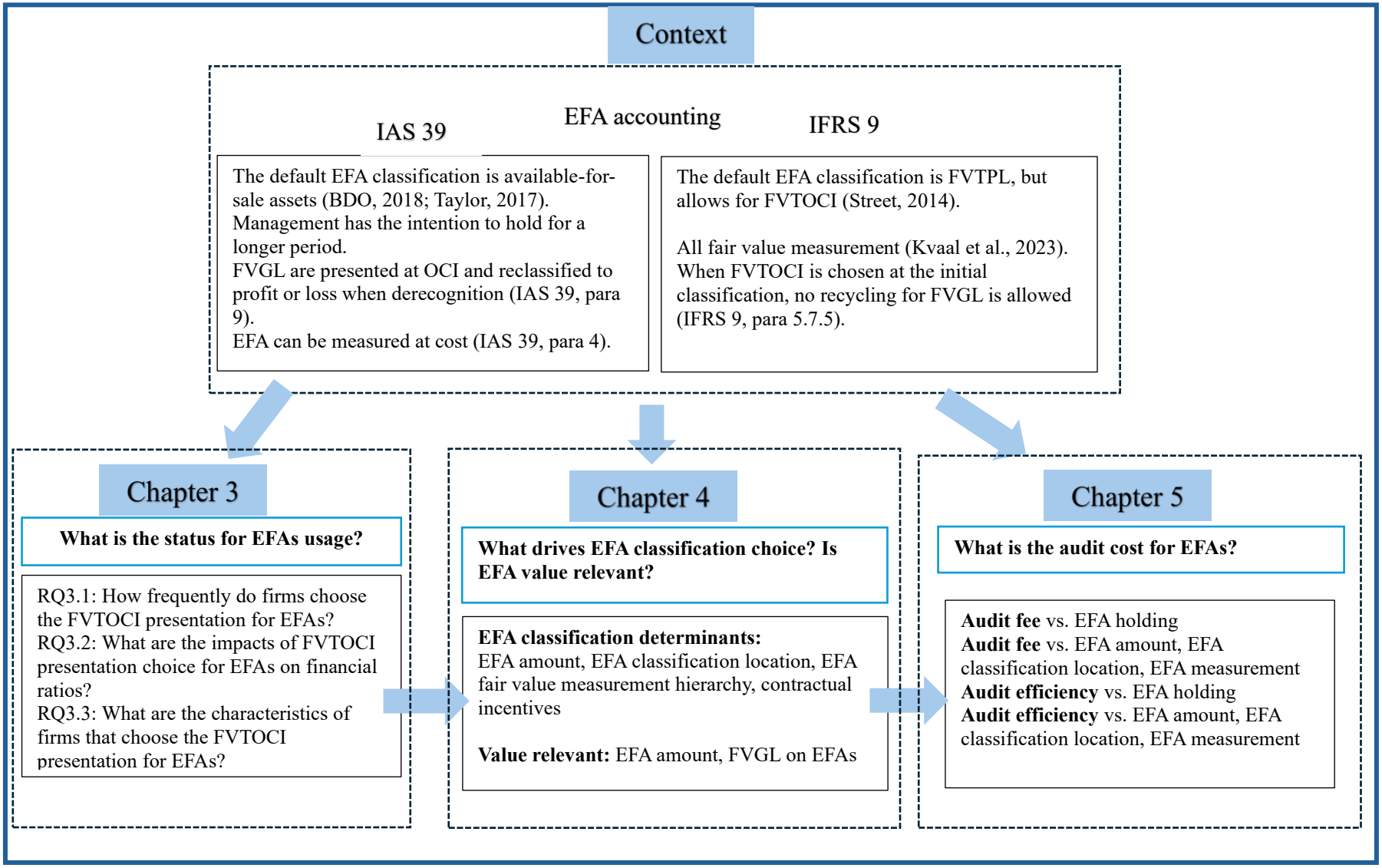

Table 2:1 Financial instruments classification and measurement

Category	Classification criteria	Measurement	Derecognition
Panel A: Financial instruments classification and measurement in IAS 39			
Fair value through profit or loss (FVTPL)	Designated or held for trading, sell in the near term for short-term profit-taking	Fair value and changes in fair value are measured in profit and loss.	Changes in fair value are measured in profit and loss.
Held-to-maturity investments	Non-derivative financial assets with fixed or determinable payments and fixed maturity to hold to maturity	Fair value and subsequent measured at the initial amount minus principal repayments, plus or minus the cumulative amortisation of any difference between that initial amount and the maturity amount, and any loss allowance.	Changes in fair value are measured in profit and loss.
Loans and receivables	With fixed or determinable payments but are not quoted in an active market	Fair value and subsequent measured at the amount recognised at initial recognition minus principal repayments, plus or minus the cumulative amortisation of any difference between that initial amount and the maturity amount, and any loss allowance.	Changes in fair value are measured in profit and loss.
Available-for-sale financial assets	Residual category that managers have the intention to sell before maturity	Fair value and changes in fair value are measured in OCI. The assets can be measured at cost when there is no quoted market price in an active market.	Cumulative gain or loss previously recognised in OCI shall be reclassified from equity to profit or loss.

Category	Classification criteria	Measurement	Derecognition
Panel B: Financial instruments classification and measurement in IFRS 9			
Financial assets/liabilities at amortised cost	The objective of the business model is to collect contractual cash flows and the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest (SPPI) on the principal amount outstanding.	Fair value and subsequent measured at the amount recognised at initial recognition minus principal repayments, plus or minus the cumulative amortisation of any difference between that initial amount and the maturity amount, and any loss allowance. Interests use the effective interest method.	Changes in fair value are measured in profit and loss.
Financial assets/liabilities at FVTPL	Shall be measured at FVTPL unless is measured at amortised cost or FVTOCI.	Fair value and changes in fair value are measured in profit and loss.	Changes in fair value are measured in profit and loss.
Fair value through other comprehensive income (FVTOCI)	The objective of the business model is achieved by both collecting contractual cash flows and selling financial assets and the contractual terms of the financial asset give rise on specified dates to cash flows that are SPPI on the principal amount outstanding. Or an equity instrument for which the FVOCI option is irrevocably elected at the time of initial recognition.	Fair value and changes in fair value are measured in OCI.	Loans and receivables: changes in fair value previously recognised in OCI and accumulated in equity are reclassified to profit and loss. Equity instruments: Changes in fair value are recognised in OCI and are never recycled to profit and loss.

Table 2:2 Equity financial instruments standards in IAS 39 and IFRS 9

	IAS 39	IFRS 9
Rational	EFA classification and measurement are separated and are in a sequence.	EFA classification and measurement are unified.
Criteria	Classification and measurement are according to managers' holding intention.	Classification is about past practices of how such assets are managed.
Classification	Default classification is available-for-sale assets and must be classified as FVTPL if it is acquired for the purpose of selling in the near term or if there is evidence of a recent actual pattern of short-term profit-taking. An EFA can be classified as FVTPL if the conditions in IAS 39, para 9, definition of a financial asset or financial liability at fair value through profit or loss, (b) are met.	Default EFA classification is FVTPL but allows FVTOCI option. The FVTOCI option is only available if the asset is not held for trading nor contingent consideration recognised by an acquirer in a business combination (IFRS 9, para 5.7.5).
Measurement	Fair value, and for those EFAs when fair value cannot be measured with reliability can be measured at cost. Fair value gains and losses (FVGL) on EFAs is recycled from equity to profit or loss upon derecognition.	All are measured at fair value and no cost option. FVGL in OCI is irrevocable when FVTOCI is chosen at initial recognition.

Table 2:3 Studies on IFRS 9

Authors (Year)	Methodology	Sample & Period	Main findings	Implications
Panel A: Studies on IFRS 9 as a whole				
Awuye & Taylor (2024)	Literature review	35 research articles	Some of the challenges in applying IFRS 9 include data-related issues, forecasting uncertainties and the interaction of IFRS 9 with other regulatory standards. There is an improvement in risk management with stronger market discipline and transparency after IFRS 9 application despite the complexity of the standard.	More research is needed about the IFRS 9 implementation challenges and consequences in non-Europe jurisdictions and non-financial firms. There is a lack of evidence on the impact of hedging standard changes in IFRS 9 so that further research is needed.
Kyiu & Tawiah (2023)	Pool regression	666 banks across 61 countries; 2016-2019	There is a decrease in the risk of banks following the implementation of IFRS 9.	A potential benefit of IFRS 9 is that it may lower risk in banks, indicating the effectiveness of the new standard rather than a standard overreach.
Orbán & Tamimi (2023)	Descriptive analysis; questionnaire	Experts in financial reporting standards and financial instruments at European banks, universities in five European countries; 120 questionnaires received	IFRS 9 increases transparency along with the expanded disclosure requirements and enhances banks' confidence by gradually recognising expected credit losses.	There is a significant positive relationship between IFRS 9 and bank risks during the COVID-19 pandemic, indicating the default of loans in borrowers increases banks' risks that are not mitigated by IFRS 9.
Mechelli et al. (2020)	Cross-sectional regression	110 financial entities from 20 EU countries; the transition year	Both IAS 39 and IFRS 9 provide value relevance; however, IFRS 9 adds additional useful information for investors' decision making.	The high quality of the standard-setting process and effectiveness of IFRS 9.

Guo et al. (2023)	Descriptive analysis; pool regression	China listed firms; 2015-2020	The challenges for Chinese firms in applying IFRS 9 are the difficulty in applying the new classification rules for equity instruments and impairments estimation by using the new ECL model.	The challenges in applying the classification and measurement rules under IFRS 9 may change firms' equity investment strategies. The new impairment model under IFRS 9 increases value relevance for financial firms and firms with Big Four auditors.
Zampella & Ferri (2024)	Pool regression	215 European banks from 14 European countries; 2015-2020	IFRS 9 provides value relevance for banks in Europe, particularly in countries with good governance indicators and high bank authority strength.	The value relevance of IFRS 9 is affected by the strength of governance and banking authority, and regulators may enhance their role to ensure overall stability.
Utami et al. (2023)	Pool regression	Banks in 17 Asia-Pacific countries; 2010-2021	The accounting information provided by IFRS 9 continues to be relevant to future earnings and share returns.	Users may be mindful of the accounting information when implementing IFRS 9 since the opacity of assets and earnings components has increased.
Fang et al. (2022)	Cross-sectional and pool regression	All listed non-financial firms in China; 2016-2019	Non-financial firms sell their available-for-sale assets prematurely and pay considerably higher audit fees one year after the implementation of the new standard, which are some of the potential costs for IFRS 9 implementation.	IFRS 9 should reflect different principles between non-financial and financial firms. Allowing the cost measurement and continuing the incurred loss model in non-financial firms may reduce costs associated with applying IFRS 9.
Norouzpour et al. (2023)	Pool regression	86 banks in 19 European countries; 2015-2019	Capital management increased after IFRS 9; nevertheless, earnings management only increased for banks in countries with weak regulatory quality.	Regulators may enhance the quality of their regulations to govern the behaviour of banks in managing their earnings and capital after the adoption of IFRS 9. Standard setters might set a limit on the use of forward-looking information.
Li et al. (2024)	Cross-sectional and pool regression	20,468 firms from 50 countries; 2014-2019	IFRS 9 requires intense monitoring of borrowers to record timely credit losses, which makes firms experience more costly monitoring from banks.	Switching from bank debt to the other source of debt may adversely affect firms' investment and labour employment.

Bischof & Daske (2016)	Content analysis	Historical documents of the IAS 39 and IFRS 9 endorsement procedure.	The cost-benefit trade-off for the implementation of IFRS 9 in various stakeholders is a political decision. EU is able to maintain its political influence on the IASB's standard-setting with the vagueness of endorsement criteria and discretion in the endorsement decision.	In the long run, the implementation of IFRS 9 will not place a substantial financial burden on any one party except for the insurance industry.
Onali & Ginesti (2014)	Event-study	20 events from15 July 2009 to 31 December 2012; 5480 firms from 17 Europe countries; 2009-2012	The overall positive reaction to IFRS 9 is pronounced in countries with weaker rule of law and less variance between local GAAP and IAS 39.	International investors may benefit from the new standard, which is perceived as enhancing shareholder wealth and increasing comparability across European firms.
Onali et al. (2017)	Event study; cross-sectional and pool regression	22 IFRS 9 adoption events; all listed firms in 17 European countries; 2009-2014	Market-adjusted returns are positively associated with lower information asymmetry and higher information quality, and financial firms respond less favourably to the IFRS 9 adoption events compared to non-financial firms.	Policymakers need to offer additional guidance to assist investors in comprehending the rules in IFRS 9.

Authors (Year)	Methodology	Sample & Period	Main findings	Implications
Panel B: Studies on financial instruments classification and measurement				
Kvaal et al. (2023)	Literature review and descriptive analysis	139 banks from 28 European countries; 2014-2022	The requirements for classification and measurement under IFRS 9 may result in a better reflection of the timing, amount, and uncertainty of future cash flows than IAS 39.	A single fair value-based classification and measurement model would simplify the complexities and application issues associated with the current standard.
Zang et al. (2022)	Descriptive analysis	ASX 300; one year before and after IFRS 9 adoption	FVTOCI dominants EFA classification choice both before and after IFRS 9, and the stable FVTOCI choice indicates that firms appropriately present their EFAs in FVTOCI as allowed in IFRS 9.	The potential disruption of EFA classification in IFRS 9 is immaterial for the majority of firms. The IASB may provide more examples to improve firms' EFA disclosures and enhance standards compliance.
Löw & Erkelenz (2022)	Descriptive analysis; single factor and pool regression	87 banks supervised by the European Central Bank (ECB); 2014-2020	IFRS 9 has no impact on banks' investment maturities and the trend towards the long-term nature of bank investments.	Standardised and mandatory disclosure requirements for financial assets' residual maturity breakdown may improve transparency and comparability among banks that may be considered to be included in the IFRS 7.
Pinto & Morais (2022)	Pool regression	FTSE 100 and EURO STOXX 50; 2016-2020	Firms with higher financial leverage have more available-for-sale assets to be reclassified as FVTOCI in the IFRS 9 transition year. IFRS 9 leads investors to pay more attention to the changes in fair value that are recognised in the OCI.	IFRS 9 is working as intended. IFRS 7 may include more specific and standardised disclosure requirements regarding equity instruments that are financial assets.
Ben Ltaief & Moalla (2023)	Pool regression	55 listed banks in the Middle Eastern and North African (MENA) region; 2017-2019	Under IFRS 9, firm value is positively related to FVTOCI assets and negatively associated with FVTPL and amortised cost assets, making insignificant the overall effect of IFRS 9 implementation on firm value.	IFRS 9 highlights the importance of financial asset classification choice and directs banks in managing their financial assets to increase their value.

Authors (Year)	Methodology	Sample & Period	Main findings	Implications
Panel C: Studies on financial instruments impairment and risk management				
Gebhardt,G. (2016)	Case study	Greek government bonds of an EU bank; 2009-2011	The impairment rules in IAS 39 do not reflect credit losses that are expected to incur after the reporting date. However, the ECL model in IFRS 9 lacks readily measurable economic correspondents and relies heavily on management expectations for the default probability, providing more opportunities for earnings management.	The IFRS 9 provides an identical model for all financial assets and improves impairment rules since credit losses can be recognised earlier.
Nnadi et al. (2023)	Pool regression	100 commercial banks across 37 countries in the Europe; 2011-2019	Earnings management behaviour through loan loss provisions following IFRS 9 is detected in European banks.	Regulators may need to identify additional tools to monitor earnings management practices through loan loss provision after IFRS 9 adoption.
Oberson (2021)	Pool regression	69 IFRS banks across 24 countries; 2014-2019	The greater accounting discretion inherent in the ECL model increases earnings smoothing via loan loss provisions after IFRS 9 adoption. Strong governance contributes to the relevance of loan loss provision in CDS pricing after IFRS 9.	Strong governance is imperative in the relevance of loan loss provision for CDS pricing.
Gomaa et al. (2019)	Experimental	Undergraduates and graduates at a medium-size North American university; 63 participants	The ECL model increases the amount and adequacy of credit loss provisions. ECL model increases management discretion, which may result in higher earnings management related to compensation schemes.	Standard setters may restrict the extent to which managers can use forward-looking information in credit loss provisions and reduce managers' ability to manage earnings. New audit standards or procedures may be introduced to take the tendency of earnings management into account.

Goh et al. (2021)	Experimental	65 accountants from Singapore; 2018	Managerial conservatism is positively related to the recognition of loan loss provisions and the amount under the ECL model. Accounting conservatism has no impact on loan loss provisions under the incurred credit loss model in IAS 39.	The impairment under the ECL model is affected by accounting conservatism.
Du et al. (2023)	Experimental	72 bank managers	Bank managers prefer short forecast horizons and are sensitive to forecast losses from longer forecast horizons. These results are consistent with the unconditional conservatism of the new ECL model.	Bank regulators should pay attention to the adverse effects of managers' unintentional bias from unconditional conservatism in incorporating forward-looking information in ECL estimation.
López-Espinosa et al. (2021)	Pool regression	293 banks from 74 countries; 2014-2018	The ECL model is more predictive of future bank risk than the incurred credit loss model, particularly in countries experiencing credit deterioration. No evidence supports more earnings or capital management through using the loan loss provision discretion that the ECL model results in more informative provisions.	When economic conditions worsen, ECL is more important in understanding how accounting rules change in procyclicality and may amplify the crisis in the absence of regulatory and supervisory intervention.
Barnoussi et al. (2020)	Content analysis	IFRS 9 and ASC326, and related regulatory and standard document analysis; 2016-2020	Banks face challenges when applying the ECL model during the COVID-19 pandemic. The types of assumptions made, sensitivity analyses and other operational aspects of the ECL model are a "black box" for parties outside of banks.	Full and informative disclosure of the assumptions, sensitivity analyses, and other estimations made in the ECL model in banks is important to financial statement users, especially at the time of the COVID-19 pandemic.

Engelmann & Lam Nguyen (2023)	Descriptive analysis; pool regression	Bank loan portfolios and reporting from 105 banks across the world by geographical region; 2019-2020	Except for China, which maintains a stable total loan loss provisions and has slightly lower lifetime expected losses, total loan loss provisions increased globally after COVID-19, while credit risk parameters are consistently used in estimating the loan loss provisions.	Banking systems in Canada, Oceania, and Western Europe are affected more severely by COVID-19 than China in terms of the preparation for the credit shock.
Salazar et al. (2023)	Pool regression	64 listed European banks from 15 countries; 2015-2021	Loan loss provisions in IFRS 9 improve the anticipation of future credit risk in European banks, and stage 2 provision is the key to lessen the procyclical effect of IAS 39. Credit risk parameters in calculating the loan loss provisions remain stable during the COVID-19 period.	Regulators and standard setters need to provide more clarification and improvement in the wording of the terminology in standards since some terms are used inconsistently.
López-Espinosa & Penalva (2023)	Descriptive analysis; pool regression	Spanish quoted banks; 2014-2020	The negative impact on lending under the COVID-19 shock only occurs for small banks after the adoption of IFRS 9.	IFRS 9 is less procyclical than IAS 39.
Hansen et al. (2024)	Pool regression	51 banks from 12 European countries; 2015-2021	Loan loss provisions under IFRS 9 only dampen procyclicality after the COVID-19 exogenous shock.	Standard setters and regulators should monitor the cyclicality of loan loss provisions under IFRS 9 for further standard revision. Auditors should be mindful of the potential procyclical effects of using the ECL model.
Pastiranová & Witzany (2022)	Pool regression	Banks from 28 EU member countries; 2015-2020	The results cannot reject the hypothesis of existing estimates assumption about the procyclical effects of IFRS 9.	Regulators and standard setters may need to increase the quality of the ECL model and apply stress tests in adverse scenarios to help address the procyclicality.

Novotny-Farkas. (2016)	Explanation	Pillar reports and banks' disclosures for credit risk models in Europe; 2009-2014	The earlier recognition of expected credit loss and extended disclosure requirements enhance transparency that are likely to contribute to more effective market discipline. However, the new impairment model increases managerial judgement and discretion compared to the model in IAS 39.	Bank regulators play an important role in harmonising supervisory practices and consistent application of the new impairment model in IFRS 9.
Dong & Oberson (2022)	Pool regression	101 banks from 26 European countries; 2016-2019	The ECL model may influence bank risk-taking, while the CTA policy may decrease banks' exposure to systematic risk.	A transitional policy can be used to bridge the gap between different objectives of standard-setters and regulators.
Dib & Feghali (2021)	Pool regression	19 consolidated banks in Lebanese; 2017	The impact of the new ECL model is not material to the banks' equity.	Applying conservative provisions as required by local regulators during the previous few years may help lessen the possible impact caused by the ECL model once IFRS 9 is implemented.
Stander (2021)	Simulation study; descriptive analysis	A hypothetical portfolio of South African exposures.	Incorporating forward-looking information in the ECL model makes impairment volatility less straightforward to explain.	Greater disclosure may reduce information asymmetries and is viewed positively on regulators and investors.
Hewa et al. (2020)	Mix-method of content analysis	327 comment letters from IASB 2009,2011,2013 proposal	IASB incorporates interest groups' inputs to make the standard less complex, more operational and comparable.	The IASB maintains independence in the due process of developing the ECL model in IFRS 9.
Orthaus & Rugilo (2023)	Content analysis; descriptive analysis	750 Comment letters the IASB received during its development of the impairment requirements of IFRS 9; 2018-2014	Revisit how the ECL model goes from being reluctant to be included in the revised impairment model due to their conceptual shortfalls to becoming part of IFRS 9.	The importance of constituents in safeguarding the IASB's independence.

Pucci & Skærbæk (2020)	Content analysis; interview	683 comment letters; 2009-2014 And 22 Interviews; 2014-2016	The forward-looking expected loss approach under IFRS 9 is a failure of a collaborative initiative between the IASB and FASB as well as an unsuccessful attempt to establish an ideal-type model. A standard-setting objective that is based on financial economics is approximated while creating linkages with other matters of concern.	There are some practical difficulties in setting an idea-type impairment approach, and it is important to embed the value-usefulness of financial reporting into standard-setting.
Hashim et al. (2019)	Content analysis	FASB and IASB publications, recordings of meetings, conversations with senior observers of the process, comment letters; 2009-2016	IASB and FASB are unable to achieve convergence in developing a credit loss model that the IASB issued ECL model independently. A more straightforward route from the ECL model could lead to an improvement in accounting methods for credit losses.	In the event of exceptional economic circumstances, the ECL model can be developed in a radical way rather than another, less aggressive route.

Authors (Year)	Methodology	Sample & Period	Main findings	Implications
Panel D: Studies on hedge accounting				
Gumb et al. (2018)	Interview	48 interviews with the AFTE (the French Association of Corporate Treasurers); 2011-2012	The mandatory changes in accounting standards for derivatives from IAS 39 to IFRS 9 impact corporate treasurers' economic decisions, which are complex and nuanced, including a dynamic learning process. The main concern of the treasurers is a rise in earnings volatility that earnings may be managed through increased use of OCI as an alternative to net income.	The changes in accounting standards affect managerial behaviour, which may have a negative impact on the real economy.
Müller (2020)	Simulation study	An average listed non-financial firm	Applying hedge accounting rules in IAS 39 may lead to a higher portfolio earnings volatility compared to IFRS 9.	Whether to switch from IAS 39 to IFRS 9 hedge accounting depends on firms' specific risk management policy and objectives.
Jiang & Ye (2024)	Pool regression	China listed non-financial firms; 2016-2021	There is an audit fee reduction in non-financial firms after applying for new hedge accounting rules in Chinese equivalent IFRS 9, which mitigate earnings volatility and accruals management. However, the favourable effect of IFRS 9 is only significant in firms with better corporate governance and stronger external monitoring.	Improvements in accounting standards alone may be insufficient to produce positive results for firms, and efforts to strengthen internal and external monitoring systems are also important.

Chapter 3: Does OCI Presentation for Equity Financial Instruments Matter?

Abstract

One significant change in International Financial Reporting Standard (IFRS) 9 *Financial Instruments* is how firms' equity financial assets (EFAs) are presented. The default EFA presentation is at fair value through profit or loss (FVTPL); however, IFRS 9 allows irrevocable presentation of fair value through other comprehensive income (FVTOCI). Although FVTOCI is the most common presentation for EFAs both before and after IFRS 9, there is a significant increase in the use of FVTPL post IFRS 9 via an improvement in disclosure clarity about presentation location. To assess the impact of EFA presentation, I recalculate profitability ratios assuming different presentation locations and find some evidence of significant differences for financial firms. I also provide descriptive evidence that EFAs use and presentation behaviour vary between sectors and firm size quartiles. This study expands the literature on EFA accounting and provides a timely response to IFRS 9 post-implementation review by shedding some light on EFA use and presentation locations under IFRS 9.

3. 1 Introduction

In its effort to reduce financial instruments accounting complexity, the International Accounting Standards Board (IASB) issued International Financial Reporting Standard (IFRS) 9 *Financial Instruments,* which supersedes International Accounting Standard (IAS) 39 *Financial Instruments: Recognition and Measurement.* One significant change relates to the presentation of fair value gains or losses (FVGL) on financial assets that are equity investments in other entities (hereafter EFAs: equity financial assets). Under IAS 39, the FVGL on EFAs classified as at fair value through profit or loss (FVTPL) are presented in profit or loss, but the FVGL on available-for-sale (AFS) EFAs are presented in other comprehensive income (OCI) (IAS 39, para 55). IFRS 9 removes the AFS category for financial assets and uses profit or loss as the default presentation location for their FVGL on EFAs. However, it allows not held-for-trading EFAs to be presented at fair value through OCI (FVTOCI) (IFRS 9, para 4.1.4 and 5.7.5).[9]

The rationale for IFRS 9 allowing the FVTOCI presentation category for FVGL on EFAs is that a separate presentation in OCI for some EFAs would make it easier to identify the associated fair value changes and could provide decision useful information to users (IASB, 2022a, para BC5.23). However, prior literature suggests that managers tend to continue their previous accounting policies when a choice is allowed in new standards (Kvaal and Nobes, 2012). Therefore, managers may continue to present the FVGL on EFAs that are previously classified as AFS assets in OCI. Alternatively, managers may present the FVGL in OCI for more EFAs to exploit the presentation choice given in IFRS 9. As judgement and discretion are involved in EFAs presentation choice, the FVGL may signal different information about management motivation depending on

[9] FVTOCI is a presentation choice rather than a classification or measurement choice for FVGL on EFAs (IFRS 9, para 5.7.5).

where it is presented. Managers may choose FVTOCI presentation for EFAs if they want to reduce the variability in net profit, which is usually used in contracts (e.g. bonus and debt covenants). These choices may defeat the purpose for which the IASB allows the FVTOCI category. However, it is unclear how managers will exercise this choice. Further, the exercise of the choice may result in similar EFAs being treated differently, thus compromising the comparability of accounting information for EFAs.

The IASB is now reviewing the implementation of the classification and measurement requirements of IFRS 9. It issued a Request for Information (RFI) in September 2021, seeking constituents' feedback on how these requirements are working (IASB, 2021b). Driven by this standard-setting motivation, and in particular to gain insight into Question 4 asked in the RFI, I examine how frequently the FVGL on EFAs is presented in OCI and the impact of this presentation choice on financial statements.[10] I also provide descriptive evidence about whether firms' EFAs presentation choice under IFRS 9 varies by sector, firm size, or income volatility. There has also been a standard-setting debate on what items to present in OCI, and my paper informs this debate (Bradbury, 2016; Hodgson and Russell, 2014). Thus, I examine the following research questions:

RQ1. How frequently do firms choose the FVTOCI presentation for EFAs?

RQ2. What are the impacts of FVTOCI presentation choice for EFAs on financial ratios?

RQ3. What are the characteristics of firms that choose the FVTOCI presentation for

[10] RFI Question 4 is "(a) Is the option to present fair value changes on investments in equity instruments in OCI working as the Board intended? Why or why not? (b) For what equity instruments do entities elect to present fair value changes in OCI? (c) Are there any unexpected effects arising from the option to present fair value changes on investments in equity instruments in OCI? How significant are these effects?" (IASB, 2021b).

EFAs?

My sample comprises the S&P/Australian Securities Exchange (ASX) 300 index firms, and I examine a firm's EFAs one year before and after IFRS 9 adoption in its annual reports both at firm-level and individual line-item level.[11] I find that there is no significant change in the number of firms that have EFAs from the prior year to the IFRS 9 adoption year. FVTOCI dominates EFAs presentation choice in the adoption year, despite the fact that FVTPL is the default presentation for EFAs in IFRS 9. Compared with the prior year, the percentage of firms choosing FVTOCI for FVGL on EFAs remains largely stable. However, I find that the percentage of firms choosing only FVTPL presentation for EFAs increased significantly in the adoption year, which is mainly due to a significant decrease in firms that have no EFAs presentation choice disclosure. I find similar results when I consider the presentation at the EFA individual line item-level.

These are encouraging indications that first, as FVTOCI presentation choice remains stable, practitioners are choosing to present not-held-for-trading EFAs in FVTOCI under IFRS 9, which is in accordance with the IASB's intention for allowing FVTOCI presentation. Second, the disclosure clarity of EFAs presentation location has improved since the adoption of IFRS 9. I infer that the potential disruption of EFAs presentation in IFRS 9 is minimal, which are positive signs for preparers, users and the IASB.

In terms of the impacts of FVTOCI presentation choice for EFAs on financial ratios in RQ2, I calculate profitability ratios assuming different presentation choices are used. With both non-parametric and parametric tests, I do not find statistically significant differences for any of the ratios. However, there is some evidence that suggests ROE and

[11] Australia applies Australian Accounting Standards Board (AASB) 9, which incorporates IFRS 9 word for word. I just use the term IFRS 9 for consistency and convenience.

EBIT margin are higher if all EFAs use FVTPL rather than FVTOCI for financial firms, but not for non-financials. The profitability ratios are not statistically significantly different between as reported and using different presentation assumptions. Though further analysis is needed, financial firms report larger EFA values than non-financial firms and thus material changes are largely confined to this industry. Furthermore, it appears that firms do not (and in many cases cannot) choose between FVTOCI and FVTPL to maximise profit.

To understand the characteristics of firms that choose the FVTOCI presentation for EFAs in RQ3, I find that the two sectors that have the greatest number of firms with EFAs are financials and materials both before and after IFRS 9 adoption. EFAs presentation choice varies by sector, with all firms in utilities, health care, and communication services sectors presenting their EFAs in FVTOCI only in both years. Using only FVTOCI presentation for EFAs in financial firms decreases a lot from the prior year to the IFRS 9 adoption year. Furthermore, firm size affects EFAs presentation choice as larger firms are more likely to have EFAs and are less likely to use FVTOCI. This may be because larger firms tend to have multiple EFA line items that use different presentation locations, and financial firms in the larger size quartiles are FVTPL users. I do not find a clear pattern in the choice of the FVTOCI presentation for EFAs according to income volatility, which provides evidence that firms use FVTOCI presentation as allowed in IFRS 9 without reducing income volatility intentionally.

This study responds to IASB's post-implementation review of IFRS 9 in its work plan with particular emphasis on EFAs presentation choice (IASB, 2020b) and speaks to standard setters on how the alternative EFAs presentation option is implemented by firms. First, as IFRS 9 is newly effective, my paper is among the first to show firms' EFAs use and materiality by discussing EFAs presentation choices under IFRS 9. Second, this study

offers practical contributions to managers, auditors, and investors by shedding some light on EFAs presentation location requirements in IFRS 9. I emphasise differences across sectors, with the particular importance of EFAs in financial firms. As Australian accounting standards adopt IFRS "word for word" (Thomson, 2009; Wang, 2019), the results of this study are likely generalisable to other IFRS jurisdictions.

The remainder of this paper is organised as follows. Section 3.2 examines the background and related literature from both standard-setting and academic research perspectives. Section 3.3 describes the sample selection and research methods employed. Section 3.4 presents the results of this study. Section 3.5 concludes.

3. 2 Background and Related Literature

3.2.1 EFAs standard setting

IAS 39, issued in 1999, is the first comprehensive standard dealing with the recognition, derecognition, and measurement of financial instruments, and hedge accounting (Deloitte, 2021a). The standard went through multiple revisions after its issuance. In this study, I focus on the 2009 version of IAS 39 that was in force before the IASB issued IFRS 9.

IAS 39 classifies financial assets into four categories: 1) a financial asset at FVTPL; 2) held-to-maturity investments; 3) loans and receivables; and 4) AFS financial assets (IAS 39, para 9). EFAs are classified as FVTPL or AFS assets according to the manner of use and management choice (IASB, 2009d). All EFAs, except for those whose fair value cannot be measured with reliability, must be measured at fair value at each

balance date (IAS 39, para 46).[12] The FVGL on EFAs that are classified as FVTPL must be presented in profit or loss. FVGL on AFS must be taken to OCI with the cumulative FVGL reclassified to profit or loss once the assets are derecognised (IAS 39, para 55). Although the classification and measurement of EFAs in IAS 39 have been widely applied for many years, it is criticised for being too rule-based and complex, and creating opportunities for subjective application by managers (Barth et al., 2017; Dong and Zhang, 2018; Fang et al., 2022; IASB, 2021b).

IFRS 9 requires fair value measurement for all EFAs, with presentation in profit or loss being the default presentation basis for FVGL on EFAs (IFRS 9, para 4.1.4). However, firms may irrevocably choose to use FVTOCI at initial recognition when the EFA is "neither *held for trading* nor contingent consideration recognised by an acquirer in a business combination to which IFRS 3 applies (IFRS9, para 5.7.5)". Once FVTOCI presentation is selected, EFAs gains and losses from fair value changes are recognised in OCI, and the cumulative FVGL previously recognised in OCI are not reclassified to profit or loss on derecognition.

3.2.2 EFAs and OCI presentation research

Examining the implementation of the local equivalent to IFRS 9, Fang et al. (2022) find a decrease in EFAs use immediately before its adoption in China. They suggest that firms respond to the risk of fair value fluctuations increasing earnings volatility by decreasing their EFA holdings (Fang et al., 2022).

Prior research has also examined whether firms' AFS assets use is opportunistic

[12] Under IAS 39, EFAs that cannot be measured with reliability are measured at cost at each balance date.

(Barth et al., 2017; Dong and Zhang, 2018; Guo et al., 2019). Dong and Zhang (2018) find that United States (US) banks selectively trade their AFS assets for earnings management purposes, and this behaviour is not due to a lack of fair value measurement reliability (Dong and Zhang, 2018). Barth et al. (2017) find consistent evidence that US banks manipulate earnings by realising gains and losses on AFS assets. Furthermore, banks' earnings management behaviour is not eliminated by including gains and losses on AFS assets in OCI (Barth et al., 2017). Guo et al. (2019) use one Chinese company as a case study to provide a closer look at accounting treatments for EFAs under the Chinese accounting standard that converges with IAS 39. They find that the company strategically classified their equity investments as AFS assets and presented FVGL in OCI to reduce the volatility of net profit. Besides, by increasing the holding percentage of the equity investments, the company reclassified their EFAs to long-term equity investments, to which equity accounting IAS 28 *Investments in Associates and Joint Ventures* applies, for the purpose of smoothing earnings.[13]

OCI, which is a repository of items that are not included in net income, is perceived as a "dumping ground" for controversial items that are frequently complex and ambiguous (Detzen, 2016; Rees and Shane, 2012). A stream of literature discusses the usefulness of OCI in decision making (Kabir and Laswad, 2011; Mechelli and Cimini, 2014; Wang et al., 2019). Mechelli and Cimini (2014) find that total OCI is value relevant in a sample of listed European entities. In contrast, Kabir and Laswad (2011) do not find incremental value relevance of OCI in New Zealand listed companies though OCI is able to predict one-year-ahead cash flows from operating activities.

One argument for excluding unrealised gains or losses from profit or loss and

[13] Bradbury et al. (2022) suggest that fair value may be more useful than the equity method of accounting, but that is perhaps only the case if it is available and verifiable.

presenting them in OCI is that incorporating these in profit or loss would induce volatility in profit (Black, 2016; Bradbury, 2016). Since EFAs presentation location affects firms' net income or OCI, it is possible that firms use EFAs presentation choice as a tool to reduce income volatility or smooth earnings. This study explores firms' sector, firm size, and income volatility as three main factors in understanding firms' EFAs presentation choice behaviour.

3.3 Research Design

3.3.1 Sample and data

My initial sample for this study comprises all firms in the S&P/ASX 300 index on 22nd March 2021. S&P/ASX 300 firms account for about 85% of the market capitalisation of ASX firms. The index includes firms from all the 11 Global Industry Classification Standard (GICS) sectors and covers large-cap, mid-cap, and small-cap firms, allowing me to examine whether the exercise of the presentation choice varies by sector and firm size.

I exclude from the initial sample 25 investment entities (e.g., exchange traded or managed funds), six firms that apply the US Generally Accepted Accounting Principles (US GAAP), one insurance firm that is exempt from adopting IFRS 9 till 2022, and 14 newly listed firms with annual reports available from 2019. This selection process yields a sample of 254 firms. Panel A in Table 3.1 describes the sample selection process.

[INSERT TABLE 3.1 HERE]

IFRS 9 is effective on or after 1st January 2018, with earlier application

permitted.[14] Panel B in Table 3.1 displays the distribution of firms' IFRS 9 adoption by year, and I note that firms without EFAs may still adopt IFRS 9 early for other financial instruments. The majority of firms with EFAs applied IFRS 9 in 2019. This is the effective year for firms whose balance dates are other than 31st December. Since 30th June is the most common balance date for Australian firms, IFRS 9 became effective in 2019 for most sample firms.

I hand-collect EFAs data from the sample firms' annual reports, which I download from firms' websites or the ASX website, in the IFRS 9 adoption year and the previous year for comparison (508 firm-years in total). I read each firm's financial statements to confirm if the firm has an EFA. For these firms that have EFAs, I collect what the EFAs are, what securities the firm invests in, the number of EFA line items, where in the statement of profit or loss and OCI the firm presents the FVGL on EFAs, the value of EFAs both at the firm-level and individual line item-level, and the effect of EFAs on profit or loss and OCI. Other firm financial data are collected from the Eikon database.

3.3.2 Research method

I classify a firm as an only FVTPL (only FVTOCI) user if it presents the FVGL on EFAs in profit or loss (OCI) only. Some firms have multiple EFA line items and classify some EFAs as FVTPL and other EFAs as FVTOCI (classified as both FVTOCI and FVTPL users). Last, if a firm does not disclose where it presents the FVGL, it is classified as a no FVTOCI/FVTPL disclosure user. To provide any insight into the change in the choice of FVTOCI presentation between before and after IFRS 9 adoption, I report results in

[14] IASB provided a temporary exemption from applying IFRS 9 for entities whose predominant activities are issuing insurance contracts until 2021 (Deloitte., 2016).

grouping term any FVTOCI (FVTPL) users who are the only FVTOCI (only FVTPL) users plus both users category at firm level analysis.

To examine what the EFAs are, I collect the name of each EFA item. A word cloud figure is displayed to demonstrate the word or phrase used in naming EFAs and the frequency of the word or phrase used. When generating the word cloud figure, I exclude conjunction, article and preposition, for example, “at”, “in”, “and”, “to”, “the”, “of”, and “as”. The font size of the word or phrase in the figure represents the frequency of the word used in naming EFAs.

I report EFAs statistics for both un-deflated and deflated values at the firm and line item-level and for each presentation category separately for the adoption and pre-adoption years. I use total assets and market capitalisation as deflators. Deflated values allow me to evaluate the quantitative materiality of EFAs. I also report the statistics for financial and non-financial firms separately.

For RQ2, I focus on the impact of OCI presentation choice for EFAs on firms’ profitability ratios because investors are interested in firm profit performance, and analysts’ forecast and managerial compensation are linked to profitability (Bishop et al., 2005; Efendi et al., 2007; Farouk and Hassan, 2014; Yu, 2010). I consider two measures of profitability: return on equity (ROE) and earnings before interest and tax (EBIT) margin (Stent et al., 2010).[15] ROE is net income scaled by total common equity, and EBIT margin is EBIT scaled by total revenue.

I calculate the profitability ratios using three sets of numbers. First, I calculate the ratios using the reported numbers (termed “Reported ratios”). Second, I assume that all firms categorise their EFAs as FVTPL and recalculate the ratios (termed “All FVTPL

[15] I choose ROE rather than return on assets (ROA) since ROE is more consistent with the investor decision-making objective of financial reporting.

ratios"). Third, I assume that all firms categorise their EFAs as FVTOCI and recalculate the ratios (termed "All FVTOCI ratios"). I report differences using the non-parametric Wilcoxon test and Student t-test for robustness between the sets of ratios.

For RQ3, I explore whether FVTOCI presentation choice varies by sector, firm size, and income volatility. I first report how many firms have EFAs and how many firms are in each presentation category in each sector. I then repeat this analysis by dividing the full sample firms (254 firms) into quartiles according to their total assets. To explore whether firms' EFAs presentation choice is related to income volatility, I use the standard deviation of ROE as my income volatility proxy. I divide the full sample into quartiles according to the standard deviation of ROE, calculated over a five-year window up to and including the IFRS 9 adoption year (Hunt et al., 2000; Jayaraman, 2008).

3.4 Results

3.4.1 The use of EFAs: Frequency, Names and Magnitudes

Table 3.2 reports the frequency of different EFAs presentation categories at the firm-level and line item-level. I find that 111 (43.7%) firms have EFAs at their IFRS 9 adoption year-end, which is not significantly different from the prior year. I also find that only FVTOCI is most widely used during both the adoption and pre-adoption year (47.7% and 50.5%, respectively), followed by only FVTPL (38.7% in the adoption year and 25.7% in the pre-adoption year) and both FVTOCI and FVTPL methods (10.8% in the adoption year and 9.2% in the pre-adoption year). 46 (86.8%) of the 53 firms that are only FVTOCI users in the IFRS 9 adoption year are also only FVTOCI users in the previous year.

[INSERT TABLE 3.2 HERE]

I make two inferences based on my results. First, the consistent use of FVTOCI suggests that firms choose the FVTOCI presentation for not-held-for-trading EFAs, which were classified as AFS securities under IAS 39, without violating IASB's purpose of allowing the FVTOCI category in IFRS 9. Second, the FVTPL users increase significantly from the prior year to the adoption year. This is mainly because of the decrease in the percentage of firms that do not disclose where they present the FVGL on EFA (16 (14.6%) during the pre-adoption year vs. 3 (2.8%) during the adoption year). This suggests that IFRS 9 has improved firm disclosures about their EFAs presentation location.[16]

As shown in Panel B of Table 3.2, a total of 197 EFA line items are reported in the 111 firms' annual reports, with an average of 1.77 EFA line items per firm. 60 firms report only one EFA line item (data not in the table). The use of different presentation locations is relatively even in the adoption year, with 94 (47.7%) using FVTOCI presentation and 100 (50.8%) using FVTPL. Again, I find a significant increase in the EFA line items using the FVTPL presentation and a decrease in no-disclosures in the adoption year.[17] Thus, the results at the line item-level support my inferences from the firm-level analysis.

It is also of interest to know what each EFA is. I examine this by displaying keywords used in the naming of each EFA item, with the font size of each word or phrase representing the frequency of the word or phrase used (Figure 3.1). Among 1003 total words or phrases used in naming EFA items, the most common "Non-current" appeared 102 (10.2%) times, followed by "Financial-assets" 88 (8.8%) times, and "investments"

[16] Another explanation, that amounts going through FVTPL in pre-adoption year are not material to disclose separately, seems less likely as the newly disclosed gains or losses from EFAs in the adoption year are below conventional materiality thresholds.

[17] I note that no disclosure firms could have multiple EFA line items for which they do not disclose where FVGL were presented. Thus, 16 no disclosure firms have 21 no disclosure EFA line items in the pre-adoption year.

87 (8.7%) times. Some typical EFA item names are "Non-current investment in unlisted securities at fair value", "Investment in listed entities", and "Non-current investments in equity instruments designated as FVTOCI". Based on my experience of reading firm disclosures, I find that EFA item names are informative. For example, firms disclose in the names whether the EFA is a current asset or non-current asset, whether the EFA is presented at FVTOCI or FVTPL, what the investment is, and whether the EFA is listed equity or unlisted equity. In contrast, notes provide variable and often sparse details about EFAs. For example, Tabcorp Holdings Ltd disclosed the reason for their EFAs presentation election as "Equity instruments at fair value through other comprehensive income are equity instruments which the Group intends to hold for the foreseeable future (see page 85 of Tabcorp Holdings Ltd 2019 annual report)." However, from my observation, not many firms disclosed the reason for their FVTOCI presentation election.

[INSERT FIGURE 3.1 HERE]

Table 3.3, Panel A shows the descriptive statistics for EFAs magnitudes at the firm-level. The average EFA value is AUD$1,933.6 million (AUD$1,730.5 million) in the adoption year (pre-adoption year). However, the median value is only AUD$44.3 million (AUD$40.0 million in pre-adoption year). The large difference between mean and median is due to a large value of EFAs in financial firms, whereas EFAs value in non-financial firms is often much smaller. Considering differences in EFAs use between financial and non-financial firms, I provide separate descriptive statistics of EFA values in financial and non-financial firms. The average EFA value in financial firms is AUD$5,615.2 million, whereas the number is AUD$92.8 million in non-financial firms in IFRS 9 adoption year.

[INSERT TABLE 3.3 HERE]

I also report descriptive statistics for EFA value, deflated by total assets and market capitalisation in each category, respectively. The mean (median) EFAs to total assets is 12.5% (0.9%) in IFRS 9 adoption year. The mean (median) EFAs to market capitalisation is 30.0% (1.1%). Judged by a quantitative materiality threshold of five per cent of total assets, EFAs are not material for 71.2% of firms. However, EFAs are material for 59.5% of the financial firms. For example, the median EFAs to total assets is 8.3% for financial firms but only 0.5% for non-financial firms in IFRS 9 adoption year. There are no significant differences for any EFA value between IFRS 9 adoption year and the prior year using univariate tests. This suggests that firms do not change their EFA holding levels in response to IFRS 9.

Panel B of Table 3.3 provides descriptive statistics of EFAs at line item-level. The largest EFA line item is "Financial assets measured at FVTPL-equity securities and listed managed investment schemes" at AUD$55,894 million, and the smallest EFA line item is "Non-current Listed Securities-Other" at AUD$0.007 million. Since the magnitudes are at the line item-level, the magnitudes of the statistics are smaller in Panel B than in Panel A.

3.4.2 The effect of EFA on financial ratios

Table 3.4 displays the impact of OCI presentation on firms' profitability ratios in the adoption year. The sample in Panel A is 111 firms that have EFAs. Using the reported figures ("Reported ratios" columns), the mean ROE is 12.5%, and the mean EBIT margin is 10.3%. When I recalculate ratios assuming that all EFAs are presented at FVTPL ("All FVTPL ratios"), the mean ROE and EBIT margin is 12.7% and 15.1%, respectively. On the other hand, when assuming that all EFAs are presented at FVTOCI ("All FVTOCI

ratios"), the average ROE is 12.3%, and the EBIT margin is 9.4%.

[INSERT TABLE 3.4 HERE]

I report differences between the sets of ratios using non-parametric Wilcoxon test and Student t-test for robustness. The differences in mean ROE under these scenarios are not significant at conventional levels. I observe similar results for EBIT margin; however, the difference in mean EBIT margin between "All FVTPL ratios" and "All FVTOCI ratios" is marginally significant with t-test. In addition, in un-tabulated analysis of firms with material EFAs, I find no significant difference in ROE between FVTPL and FVTOCI presentations.[18] The difference in EBIT margin between these presentation alternatives approaches only marginal significance (p=0.11).

Figure 3.2 illustrates the magnitude of change in ratios in the 111 firms that have EFAs in IFRS 9 adoption year. More than 90% of firms' profitability ratios' changes are within five per cent when presenting FVGL for EFAs at different locations. However, some firms' ratios experience large changes when different EFAs presentation locations are chosen. For example, one non-financial firm's ROE changes from 15.5% as reported to -13.4% in "All FVTPL ratios". The ROE of another non-financial firm changes from 35.2% ("Reported ratios") to 54.8% ("All FVTPL ratios). Most financial firms are only FVTPL users that may experience a large change in ROE if FVTOCI presentation is selected. For example, one company's ROE was 15.1% as reported but -4.8% in "All FVTOCI ratios". Almost all large EBIT margin changes happen in financial firms.

[INSERT FIGURE 3.2 HERE]

Next, I report results for any FVTOCI users (Panel B), financial firms (Panel C)

[18] In this analysis, I use a materiality threshold of five per cent of total assets for EFAs.

and non-financial firms (Panel D) in Table 3.4. For simplicity, I only report the mean and median ROE and EBIT margin for these sub-samples. Similar to the results in Panel A, there are no significant differences for any of the ratios in the subsamples. However, there is some evidence that shows the mean ROE (EBIT margin) of financial firms significantly changes from 13.4% (54.3%) under the "All FVTPL" scenario to 12.0% (36.7%) under the "All FVTOCI" scenario. These results suggest that the presentation choice affects profitability significantly for financial firms only. However, there is no difference between what is reported ("Reported ratios") and either "All FVTPL ratios" or "All FVTOCI ratios" for financial firms. I infer that presentation choice is not solely driven by an intention to influence the profitability ratios.

3.4.3 Firm characteristics and EFAs presentation location

In this section, I explore whether EFAs presentation location differs by firm characteristics. Figure 3.3 shows EFAs use by presentation locations by GICS sectors during both the adoption and pre-adoption years in my sample. Differences exist between sectors in EFAs use frequency and presentation choice. Financials and materials are the sectors that have the greatest number of firms with EFAs. Un-tabulated results also show that these are the sectors that have the highest percentage of firms with EFAs (financials = 84.1%; materials = 57.1%). In contrast, utilities and healthcare are the sectors with the least number of firms that have EFAs. All utilities, healthcare, and communication services firms present their EFAs at FVTOCI. Only 25.0% of real estate firms with EFAs are FVTOCI users (either only FVTOCI users or both users) without change from pre-adoption year to IFRS 9 adoption year. There are declines for FVTOCI users on adoption of IFRS 9 in the financial and information technology sectors, from 52.8% to 46.0% and 75.0% to 33.3%, respectively. The proportion of both FVTOCI and FVTPL users in the

financial sector stays consistent at approximately 20% after adoption. The percentage of financial firms that are only FVTPL users increases from 38.9% in the pre-adoption year to 54.1% after IFRS 9 is adopted. More than 60% of firms in the consumer staples, energy, consumer discretionary and industrials sectors choose FVTOCI presentation for their EFAs.[19]

[INSERT FIGURE 3.3 HERE]

I next explore whether EFAs presentation choice varies by firm size. Figure 3.4 shows firms' EFAs presentation choice in IFRS 9 adoption year by firm size quartiles, as proxied by total assets.[20] I find that the largest and large quartiles of firms have more EFAs, consistent with larger firms having more cash flows for investing in EFAs. However, only 33.3% of firms with EFAs use only FVTOCI presentation in the largest firm size quartile, compared to a relatively more even split with other presentation locations in the other size quartiles. The largest quartile of firms has multiple EFA items requiring different presentation locations that 25.6% are both FVTOCI and FVTPL users.

[INSERT FIGURE 3.4 HERE]

I examine the effect of profit dispersion using ROE volatility. Since I require five years of ROE, including the IFRS 9 adoption year, I lose 22 firms from the full sample due to a lack of sufficient data. Hence, I end up with 232 firms, out of which 104 (44.8%) firms have EFAs. I consider volatility relative to the broader sample to allow me to benchmark if firms with EFAs are more or less volatile. Figure 3.5 shows firms' EFAs

[19] It's interesting to know that industry norms from the other areas of accounting may flow into affecting their EFA choices. The low number of FVTOCI users in the real estate sector could be due to the fact that most of their assets are carried at FVTPL (most investment properties in this sector are carried at FVTPL in Australia). It could be possible that firms have the propensity to choose the classification the same way as other assets. For example, firms in sectors that generally use cost (for example, retail or manufacturing) might be less disposed to use FVTPL than firms in sectors where many of their other assets are also measured at FVTPL.

[20] Using market capitalisation as the proxy for firm size gives similar results.

presentation choice in different ROE volatility quartiles.[21] 56.7% of firms with EFAs in the lowest ROE volatility quartile are FVTOCI users, and the percentage in low, high and highest quartiles is 57.7%, 65.5% and 52.6%, respectively. No clear relation between income volatility and EFAs presentation choice is visible; however, as income volatility may also be driven by firm size and industry (Gao and Zhang, 2015; Jayaraman, 2008), further analysis may be warranted.

[INSERT FIGURE 3.5 HERE]

3.5 Summary and Conclusions

With growing criticism from various stakeholders about the complexity and difficulty in applying the classification and reclassification rules (Crump, 2012), the IASB issued IFRS 9 to supersede IAS 39 with an effective date of on or after 1st January 2018. One major change is how EFAs are classified, measured, and presented. First, only two presentation options for FVGL on EFAs, which are FVTPL or FVTOCI (IFRS 9, para 5.7.5), are provided in IFRS 9 instead of allowing the cost option in IAS 39 (Deloitte, 2021d; IAS 39, para 46). Second, the default EFAs presentation in IFRS 9 is FVTPL, which is different from AFS assets in IAS 39 to which the OCI presentation applied. Third, once the FVTOCI choice is made in IFRS 9, it is irrevocable without reclassifying the cumulative gains or losses from equity to profit or loss when the EFA is derecognised. The IASB has launched a post-implementation review of IFRS 9, investigating, among others, the implementation of these changes in accounting for EFAs and the impact thereof (IASB, 2021b). My study provides early evidence on how firms respond to the

[21] When dividing the full sample firms into quartiles according to their ROA and EBIT margin volatility, the results remain qualitatively similar that there is no clear relation between income volatility and EFAs presentation location.

presentation choice allowed for EFAs, and hence, is relevant to the IASB and its constituents.

My first question examines firms' EFAs presentation implementation. I observe that OCI is the dominant presentation location for the FVGL on EFAs both during the adoption year and the pre-adoption year. The percentage of firms using the OCI presentation remains stable, suggesting that firms follow IFRS 9 to present EFAs at FVTOCI. While firms choosing to present the FVGL in profit or loss increased significantly during the adoption year, this is mainly due to the decrease in firms not disclosing the presentation location.

To understand the impact of EFAs presentation choice, RQ2 examines the impact on financial ratios, and I find that EFA is not a material asset for most non-financial firms. However, as expected, it is a material asset for financial firms. Consistent with the materiality of EFAs for financial firms, some evidence shows that the presentation location has a significant impact on their profitability ratios. However, for most firms, the impact of the presentation choice on profitability is statistically insignificant. These results suggest that firms do not (and cannot) use the choice to influence profitability.

For RQ 3, EFAs use and presentation vary across sectors and firm size quartiles. Financial and material are the two sectors that have the greatest number of firms with EFAs. Only FVTOCI users in financial industry have a large decrease in the adoption year, which suggests that financial firms follow IFRS 9 to use the default FVTPL presentation for their EFAs. Large firms are more likely to have high EFA values and multiple EFA line items. Finally, I do not find a clear pattern between EFAs presentation and income volatilities.

This study contributes to Question 4 of the IASB's RFI post-implementation

review of IFRS 9 (IASB, 2021b). Question 4 (a) asks "Is the option to present fair value changes on investments in equity instruments in OCI working as the Board intended?" Based on my sample, I infer that firms appropriately present their EFAs in FVTOCI as allowed in IFRS 9. This comes from the stability of OCI presentation of FVGL on EFAs under both IAS 39 and IFRS 9. Besides, there is no clear relation between firms' income volatility and the choice of FVTOCI, suggesting that the choice is not driven by any motivation to influence income volatility. Taken together, the potential disruption of EFAs presentation in IFRS 9 is immaterial for the majority of firms. Question 4(b) asks, "For what equity instruments do entities elect to present fair value changes in OCI?" Based on my observations from reading firms' EFAs disclosures, I find that firms disclose where the FVGL of EFAs goes to (FVTOCI or FVTPL) and what the investments are (e.g., listed or unlisted equities) in EFA item names. However, there is insufficient disclosure of the reasons for EFAs presentation choice. As the disclosures are required in standards, I suggest IASB provides more examples of improving firms' EFAs disclosures to IFRS enforcement agents (e.g., audit committee, independent auditors, and stock market regulators) to ensure that the requirements are complied with. Last, Question 4(c) is, "Are there any unexpected effects arising from the option to present fair value changes on investments in equity instruments in OCI?" I find that the presentation location of the FVGL on EFAs does not impact profitability significantly; however, there is some evidence that it can impact the profitability of some financial firms.

Figure 3:1 Word frequency of EFA names

A total of 1003 words or phrases were used in naming EFAs. The font size of each word represents the frequency of the word used. The 10 most common words or phrases are: Non-current (10.2%); Financial-assets (8.8%); investments (8.7%); assets(5.2%); listed(4.3%); unlisted(3.9%); securities(3.4%); fair-value (3.0%); current (2.9%); equity-investments (2.8%).

Figure 3:2 Magnitude of change in ratios in IFRS 9 adoption year

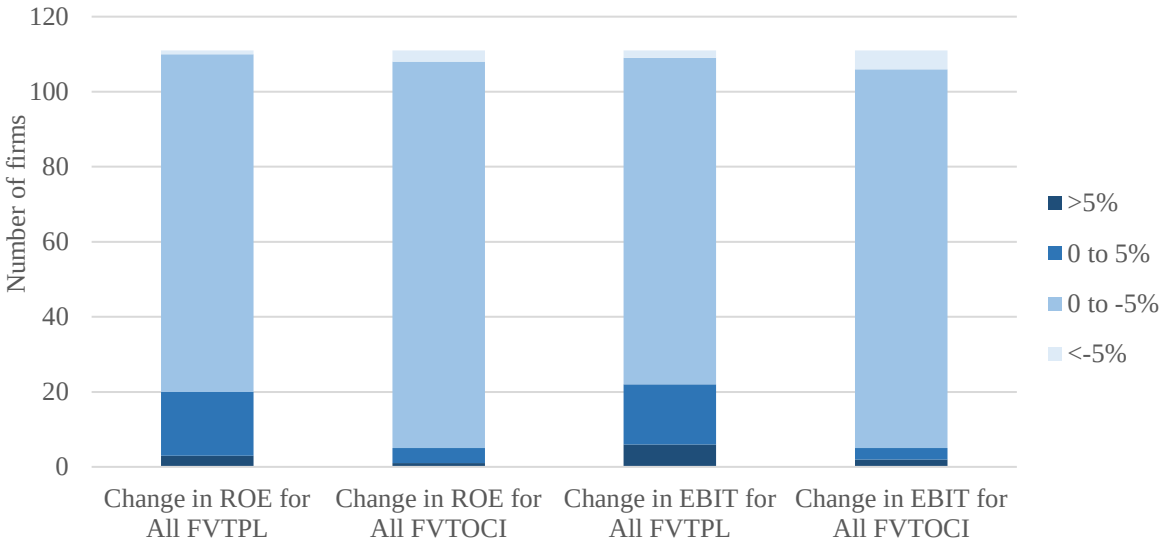

Figure 3:3 EFAs use and presentation location by GICS sectors in IFRS 9 adoption and pre-adoption years

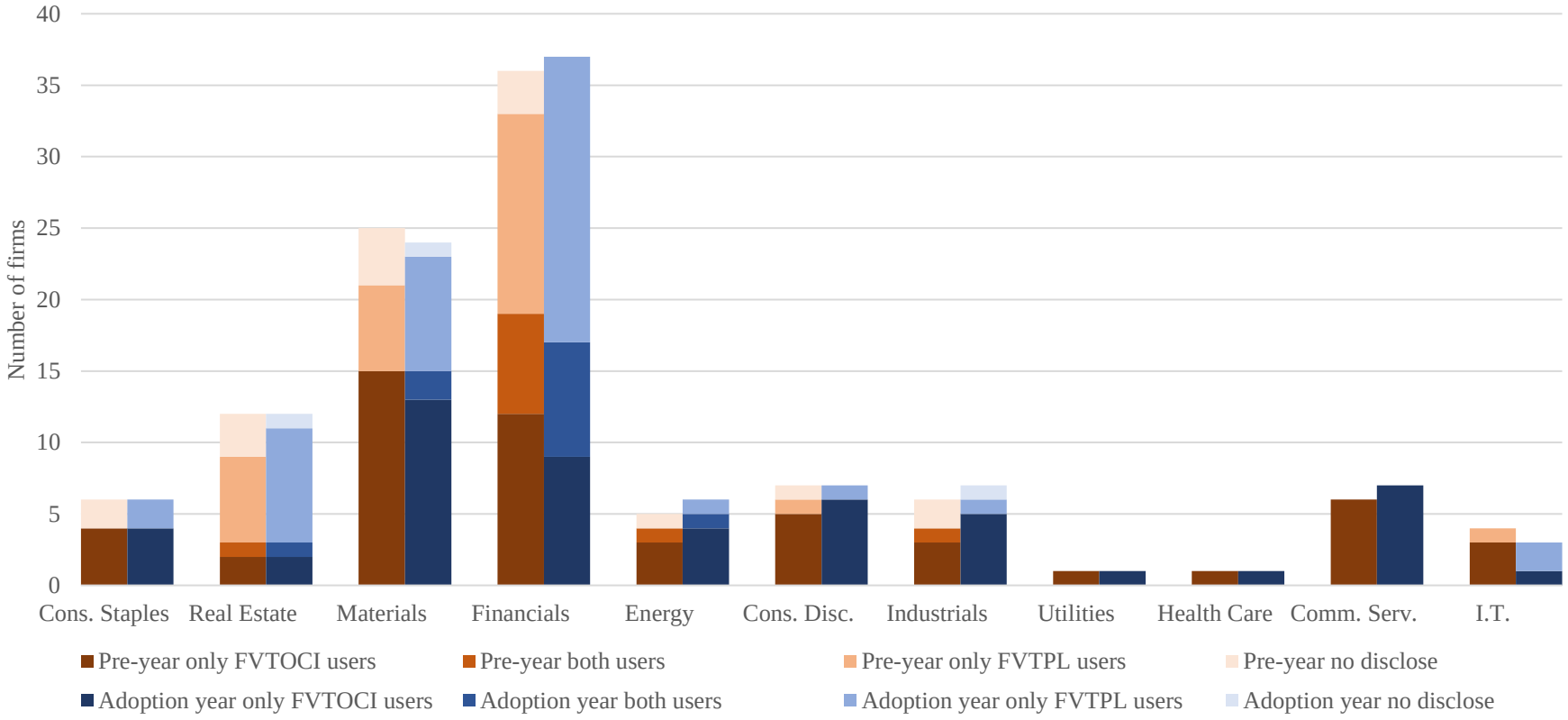

Figure 3:4 EFAs presentation location by total assets quartiles

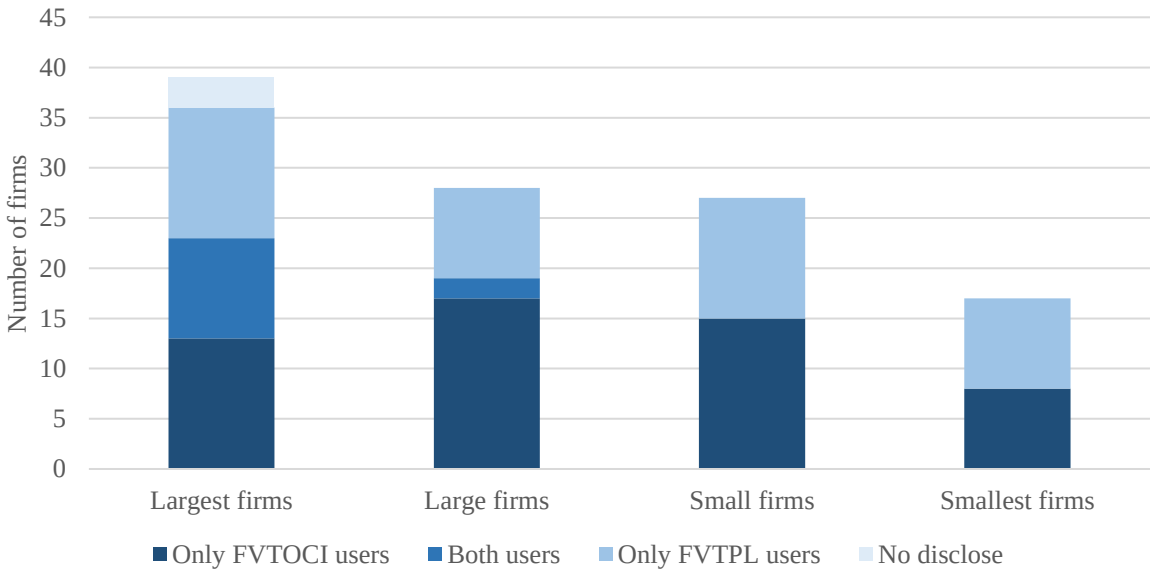

Figure 3:5 EFAs presentation location by ROE volatility quartiles

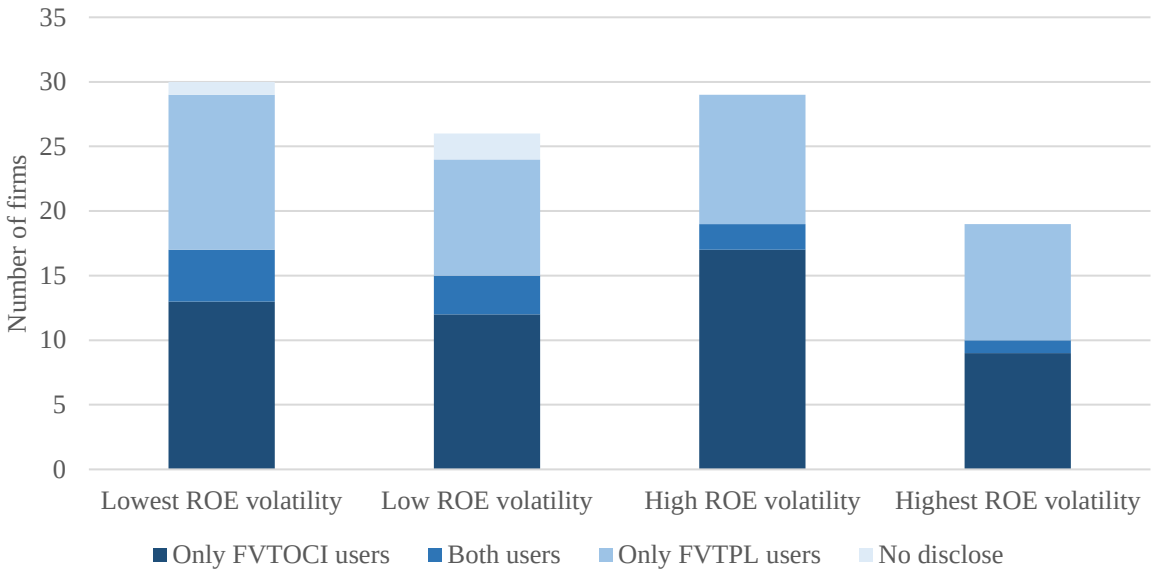

Table 3:1 Sample

Panel A: Sample selection process

	No. of firms
Total number of firms	300
Less: Funds	-25
US GAAP users	-6
Exempt from adopting IFRS 9	-1
Newly listed with annual report available from 2019	-14
Total firms to check for EFAs (Full sample)	**254**
Firms with EFAs in the adoption year	**111**

Panel B: Sample by IFRS 9 adoption year

IFRS 9 adoption year	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Total**
Firms in full sample	4	10	7	8	39	186	**254**
Firms with EFAs	3	6	3	2	13	84	**111**

Table 3:2 The use of EFAs presentation at firm-level and line item-level

Panel A: Use of EFAs presentation at firm-level

	IFRS 9 adoption year		Pre-adoption year		Chi-square
	No.	%	No.	%	
Only FVTOCI users	53	47.7	55	50.5	0.047
Only FVTPL users	43	38.7	28	25.7	3.682*
Both FVTOCI and FVTPL users	12	10.8	10	9.2	0.190
No FVTOCI/FVTPL disclosure users	3	2.8	16	14.6	14.993***
Any FVTOCI users	65		65		0.026
Any FVTPL users	55		38		4.861**
Firms with EFAs	111	43.7	109	42.9	0.032

Panel B: Use of EFAs presentation at line item-level

	IFRS 9 adoption year		Pre-adoption year		Chi-square
	No.	%	No.	%	
FVTOCI EFA items	94	47.7	103	53.9	1.619
FVTPL EFA items	100	50.8	67	35.1	9.990***
No FVTOCI/FVTPL disclosure EFA items	3	1.5	21	11.0	14.888***
EFA items	197	100	191	100	
Average EFA items per firm	1.77		1.75		

Any FVTOCI (FVTPL) users are only FVTOCI (FVTPL) users plus both FVTOCI and FVTPL users. % for different categories indicates the percentage of firms (items) in that category to the total firms (items) with EFAs. % for firms with EFAs indicates the percentage of firms have EFAs in full sample. Chi-square tests are reported on the change in number of different EFAs presentation users in pre- and IFRS 9 adoption year. Chi-square test is performed for each of the categories and the other categories are grouped together as a different category. ∗, ∗∗ and ∗∗∗ represent the test of statistical significance at the 10, 5 and 1% levels, respectively.

Table 3:3 Descriptive statistics of EFAs magnitudes at firm-level and line item-level

Panel A: Descriptive statistics of EFAs magnitudes at firm-level

		Adoption year					Pre-adoption year		t-test	z-score
	Obs	Mean	Median	S.D.	Min.	Max.	Mean	Median		
All firms with EFAs										
EFA value	111	1933.6	44.3	9596.7	0.0	75792.0	1730.5	40.0	1.430	0.053
EFA/Total assets	111	12.5%	0.9%	27.1%	0.0%	100.0%	12.7%	1.3%	0.123	-0.503
EFA/Market capitalisation	111	30.0%	1.1%	116.6%	0.0%	1127.1%	19.9%	1.1%	1.496	0.223
Financial firms with EFAs										
EFA value	37	5615.2	916.1	16136.6	0.2	75792.0	5060.7	728.5	1.462	-0.199
EFA/Total assets	37	32.8%	8.3%	39.5%	0.0%	100.0%	33.2%	8.7%	0.466	0.055
EFA/Market capitalisation	37	83.1%	23.0%	192.3%	0.0%	1127.1%	53.2%	8.3%	1.581	-0.872
Non-financial firms with EFAs										
EFA value	74	92.8	19.9	243.2	0.0	1547.8	88.2	19.8	0.510	-0.110
EFA/Total assets	74	2.4%	0.5%	4.9%	0.0%	26.1%	2.6%	0.6%	0.689	0.593
EFA/Market capitalisation	74	3.5%	0.7%	10.2%	0.0%	62.1%	3.9%	0.6%	1.352	0.244
Only FVTOCI users										
EFA value	53	366.6	24.3	1152.6	0.0	6409.6	370.5	37.9	0.018	0.713
EFA/Total assets	53	12.8%	0.7%	30.1%	0.0%	98.1%	13.6%	1.2%	0.153	0.698
EFA/Market capitalisation	53	14.1%	0.8%	33.8%	0.0%	116.5%	14.6%	1.0%	0.080	0.476
Only FVTPL users										
EFA value	43	561.0	60.0	1509.2	0.1	9599.0	370.9	66.7	0.762	-0.329
EFA/Total assets	43	14.0%	1.7%	26.9%	0.0%	100.0%	19.1%	3.3%	0.719	-1.247
EFA/Market capitalisation	43	19.4%	2.6%	40.8%	0.0%	149.0%	21.2%	3.5%	0.102	-0.353
Both FVTOCI and FVTPL users										
EFA value	12	14253.8	934.0	26836.4	4.9	75792.0	15520.6	1285.3	0.109	-0.330
EFA/Total assets	12	9.5%	2.6%	15.7%	0.0%	52.1%	9.1%	2.6%	0.058	-0.264
EFA/Market capitalisation	12	145.8%	21.2%	328.1%	0.0%	1127.1%	75.6%	16.8%	0.647	0.330

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	Adoption year						Pre-adoption year		t-test	z-score
	Obs	Mean	Median	S.D.	Min.	Max.	Mean	Median		
No FVTOCI/FVTPL disclosure users										
EFA value	3	12.0	2.7	17.6	0.9	32.3	166.1	7.1		
EFA/Total assets	3	0.1%	0.0%	0.2%	0.0%	0.3%	0.8%	0.1%		
EFA/Market capitalisation	3	0.1%	0.0%	0.2%	0.0%	0.4%	1.1%	0.4%		
Any FVTOCI users										
EFA value	65	2930.4	40.5	12423.7	0.0	75792.0	2701.3	51.8	0.108	0.484
EFA/Total assets	65	12.2%	0.8%	27.9%	0.0%	98.1%	12.9%	1.4%	0.160	0.836
EFA/Market capitalisation	65	38.4%	1.0%	148.6%	0.0%	1127.1%	24.0%	1.1%	0.697	0.286
Any FVTPL users										
EFA value	55	3548.5	118.1	13455.6	0.1	75792.0	4357.7	134.5	0.263	0.633
EFA/Total assets	55	13.0%	2.0%	24.8%	0.0%	100.0%	16.5%	3.2%	0.616	1.305
EFA/Market capitalisation	55	47.0%	3.0%	161.2%	0.0%	1127.1%	34.9%	3.5%	0.451	0.422

Panel B: Descriptive statistics of EFAs magnitudes at line item-level

	Adoption year						Pre-adoption year		t-test	z-score
	Obs	Mean	Median	S.D.	Min.	Max.	Mean	Median		
EFA line items										
EFA item value	197	1089.5	21.3	4878.0	0.0	55894.0	985.6	20.9	0.209	0.131
EFA item/Total assets	197	7.1%	0.4%	20.6%	0.0%	100.0%	7.3%	0.4%	0.092	0.378
EFA item/Market capitalisation	197	16.9%	0.7%	71.8%	0.0%	831.2%	11.4%	0.5%	0.946	-0.413
EFA line items in financial firms										
EFA item value	88	2360.9	140.7	7113.8	0.0	55894.0	2065.9	137.5	0.275	-0.364
EFA item/Total assets	88	13.8%	0.9%	0.3%	0.0%	100.0%	13.6%	0.7%	0.055	-0.311
EFA item/Market capitalisation	88	35.0%	1.9%	104.6%	0.0%	831.2%	21.6%	1.5%	1.053	-1.051

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	Adoption year					Pre-adoption year		t-test	z-score
	Obs	Mean	Median	S.D.	Min.	Max.	Mean	Median		
EFA line items in non-financial firms										
EFA item value	109	63.0	8.0	189.7	0.0	1529.3	62.5	10.3	0.020	0.437
EFA item/Total assets	109	1.6%	0.3%	0.0%	0.0%	26.1%	1.9%	0.3%	0.414	0.935
EFA item/Market capitalisation	109	2.3%	0.4%	8.0%	0.0%	57.6%	2.8%	0.4%	0.349	0.425
FVTOCI EFA line items										
EFA item value	94	715.6	19.4	2752.4	0.0	22309.0	505.5	19.9	0.600	0.231
EFA item/Total assets	94	7.5%	0.4%	23.0%	0.0%	98.1%	7.5%	0.3%	0.001	0.225
EFA item/Market capitalisation	94	12.9%	0.4%	47.5%	0.0%	395.2%	8.5%	0.4%	0.794	-0.343
FVTPL EFA line items										
EFA item value	100	1473.4	41.8	6298.8	0.0	55894.0	1992.9	69.7	0.452	0.674
EFA item/Total assets	100	6.9%	0.5%	18.5%	0.0%	100.0%	9.0%	0.9%	0.660	1.228
EFA item/Market capitalisation	100	21.2%	0.8%	89.8%	0.0%	831.2%	19.2%	1.4%	0.169	0.594
No FVTOCI/FVTPL disclosure EFA line items										
EFA item value	3	12.0	2.7	17.6	0.9	32.3	126.6	7.1		
EFA item/Total assets	3	0.1%	0.0%	0.2%	0.0%	0.3%	0.6%	0.0%		
EFA item/Market capitalisation	3	0.1%	0.0%	0.2%	0.0%	0.4%	0.9%	0.2%		

EFA value and EFA line item value are presented in AUD millions. Univariate t-test and non-parametric Wilcoxon test examine the EFA value differences between IFRS 9 adoption year and the prior year. The z-score column reports the z-score in Wilcoxon test. ∗, ∗∗ and ∗∗∗ represent two-tailed test of statistical significance at the 10, 5 and 1% levels, respectively. No statistical test is performed when the number of observations is less than five.

Table 3:4 The impact of OCI presentation on financial ratios

Panel A: Firms with EFAs

	Reported ratios		All FVTPL ratios		All FVTOCI ratios	
	ROE(%)	EBIT margin(%)	ROE(%)	EBIT margin(%)	ROE(%)	EBIT margin(%)
Mean	12.5	10.3	12.7	15.1	12.3	9.4
Median	10.2	20.5	10.4	20.4	9.3	19.7
S.D.	15.0	133.5	15.6	144.4	15.3	133.3
Min	-31.0	-1186.5	-32.4	-1231.4	-31.0	-1186.5
Max	98.2	119.7	98.2	364.3	98.2	119.7
	z-score		t-test			
Reported vs. FVTPL	0.120	0.027	0.431	1.468		
Reported vs. FVTOCI	-0.313	-0.268	1.214	0.802		
FVTPL vs. FVTOCI	-0.429	-0.285	0.988	1.660*		

Panel B: Any FVTOCI users

	Reported ratios		All FVTPL ratios		All FVTOCI ratios	
	ROE(%)	EBIT margin(%)	ROE(%)	EBIT margin(%)	ROE(%)	EBIT margin(%)
Mean	11.4	4.2	11.7	12.3	11.4	4.1
Median	11.4	16.5	10.4	16.5	9.5	16.5
	z-score		t-test			
Reported vs. FVTPL	-0.179	-0.030	0.438	1.475		
Reported vs. FVTOCI	0.007	0.023	1.417	1.079		
FVTPL vs. FVTOCI	0.191	0.042	0.486	1.482		

Panel C: Financial firms with EFAs

	Reported ratios		All FVTPL ratios		All FVTOCI ratios	
	ROE(%)	EBIT margin(%)	ROE(%)	EBIT margin(%)	ROE(%)	EBIT margin(%)
Mean	12.5	38.9	13.4	54.3	12.0	36.7
Median	8.6	41.2	10.5	42.1	8.2	39.6
	z-score		t-test			
Reported vs. FVTPL	0.638	0.184	1.658	1.620		
Reported vs. FVTOCI	-0.411	-0.270	0.814	0.623		
FVTPL vs. FVTOCI	-0.984	-0.422	1.743*	1.752*		

Panel D: Non-financial firms with EFAs

	Reported ratios		All FVTPL ratios		All FVTOCI ratios	
	ROE(%)	EBIT margin(%)	ROE(%)	EBIT margin(%)	ROE(%)	EBIT margin(%)
Mean	12.5	-4.0	12.3	-4.5	12.4	-4.3
Median	10.3	14.5	10.3	14.5	9.9	13.9
	z-score		t-test			
Reported vs. FVTPL	-0.236	-0.054	0.441	0.826		
Reported vs. FVTOCI	-0.138	-0.150	1.255	1.602		
FVTPL vs. FVTOCI	0.090	-0.094	0.132	0.326		

The z-score column reports the z-score in non-parametric Wilcoxon test ∗, ∗∗ and ∗∗∗ represent two-tailed test of statistical significance at the 10, 5 and 1% levels, respectively.

Chapter 4: Accounting for Equity Financial Instruments from IAS 39 to IFRS 9: Use, Determinants, and Usefulness

Abstract

International Financial Reporting Standard (IFRS) 9 *Financial Instruments* prohibits recycling of the cumulative fair value gains or losses (FVGL) on equity instruments (EFAs) when derecognised and mandates all fair value measurement, compared to International Accounting Standard (IAS) 39 *Financial Instruments: Recognition and Measurement*. Using a sample of Australian firms, I find no change in the use of EFAs in contrast to evidence from other jurisdictions. After examining EFA classification determinants reflecting underlying economics and implying opportunistic use of the choice, I find the potential exploitation of the accounting choice is constrained after IFRS 9. However, I call for caution in interpreting IFRS 9 in improving financial information usefulness since investors only perceive EFA effect on OCI before IFRS 9 but not thereafter.

4.1 Introduction

Effective from January 2018, International Financial Reporting Standard (IFRS) 9 *Financial Instruments* replaced International Accounting Standard (IAS) 39 *Financial Instruments: Recognition and Measurement* (IASB, 2020b). One of the major changes is the classification and measurement requirements for investments in equity instruments (equity financial assets, hereafter "EFAs"). IFRS 9 requires all fair value measurements for EFAs and the default presentation of the fair value gains or losses (FVGL) on EFAs in profit or loss. However, the standard allows firms to present the FVGL on certain EFAs in other comprehensive income (OCI) and prohibits recycling of the cumulative FVGL on these EFAs upon their derecognition (IFRS 9, para 4.1.2 and 5.7.5). Sir David Tweedie, the former International Accounting Standards Board (IASB) Chair, expressed concerns about the potential abuse of this choice (Street, 2014). The IASB constituents also hold divergent views on this choice, the prohibition on recycling and the usefulness of the FVGL on EFAs presented in OCI (EFRAG, 2015, 2022). Therefore, evidence on the use of EFAs, determinants of the choice, and the usefulness of EFAs is of interest to the IASB and its constituents.

IAS 39 uses an available-for-sale category for EFAs and requires the FVGL on these assets to be presented in OCI. Further, the standard requires FVGL "previously recognised in OCI shall be reclassified from equity to profit or loss as a reclassification adjustment (IAS 39, para 55)" at the time of derecognition. Several studies observe that firms tend to sell EFAs on purpose to boost reported profit when the recycling of the FVGL on EFAs is allowed (Barth et al., 2017; Dong and Zhang, 2018; Lu et al., 2023). However, the choice to classify certain EFAs at fair value through OCI (FVTOCI) is irrevocable and the recycling of the FVGL on these EFAs is not permitted under IFRS 9,

which makes the EFA FVTOCI classification a major decision in this setting. The IASB allowed the classification choice in IFRS 9 in the belief that the separate presentation of the FVGL on certain EFAs in OCI would be useful to investors. With the application of IFRS 9, I provide empirical evidence on the changes in using EFAs, determinants of the classification choice and investors' perceptions of EFAs classification location.

Using data from the ASX 500 firms three years before and after IFRS 9 adoption, I firstly examine EFAs information in annual reports and find that there is no practical change in the use of EFAs with regard to whether to invest in EFAs or not, EFA classification choice, and EFA holding amounts after IFRS 9 in both non-financial and financial firms. This result is consistent with findings in European banks (Löw and Erkelenz, 2022) but contrary to a study in China, which finds firms prematurely selling their available-for-sale assets before the mandatory adoption of Chinese equivalent IFRS 9 (Fang et al., 2022). I propose that the difference could perhaps stem from the variations in the notice period given before the mandatory application of IFRS 9. Specifically, the period from issuance to implementation of IFRS 9 is approximately four years, relative to less than one year in China. This short notice period could lead to an overreaction to the financial consequences, causing the changes in EFA holding behaviour observed in China. Literature documents that familiarity with the standard enhances the confidence of preparers and investors in accounting information (Alali and Foote, 2012; Mala and Chand, 2015). Thus, I contribute to the debate of whether to recycle FVGL on EFAs by showing that there is no impact on firms' use of EFAs in practice and suggest that a longer notice period before mandatory adoption of IFRS 9 could facilitate the familiarity of the standard and mitigate firms' potential cost from avoiding being adversely impacted by standard changes.

Secondly, I investigate the determinants of EFA classification choice in non-financial and financial firms both before and after IFRS 9, respectively. The results show that EFA effect on net income and contractual incentives of risk and compensation are the main determinants for the choice of EFA classification in non-financial firms before IFRS 9, implying a potential opportunistic use of the discretion. Non-financial firms may prefer to present FVGL on EFAs directly in earnings when the impact of EFAs on net income is greater, the risk of breaching debt covenants is higher, and the CEO's compensation includes a larger variable component. The opportunistic use of the choice is also found in financial firms when they are under higher contractual risk before IFRS 9. However, after IFRS 9, the classification choice in non-financial firms is driven by EFA amount, which might reflect the underlying economics that it is a strategic investment, and no significant relationship between the choice and EFA characteristics or contractual incentives in financial firms exist, implying compliance with the standard. Thus, my second contribution highlights the potential exploitation of the classification discretion given in IAS 39 and one potential benefit of IFRS 9 in constraining the opportunistic use of the discretion given the prohibition on recycling.

Finally, I investigate whether the EFA amount and FVGL on EFAs are value relevant. I find that EFA amount is value relevant when it comprises a large portion of assets after IFRS 9, and EFA effect on OCI is only value relevant in financial firms before IFRS 9. The inference is that investors are aware of the standard changes and only price EFA effect on OCI when it is possible to be recycled to profit or loss. However, Pinto and Morais (2022) find the value relevance of EFA effect on OCI only after IFRS 9 in a sample of the top 100 UK and 50 European firms. Considering prior research also has mixed views on the usefulness of OCI components (Cahan et al., 2000; Isidro et al., 2004; Khan

et al., 2018), I call for caution in the optimistic interpretation of IFRS 9 in improving financial information usefulness. I add to the discussion on whether to recycle FVGL on EFAs by showing that investors only consider financial firms' EFA effect on OCI before IFRS 9 but not thereafter.

The findings provide practical implications. For managers, the results highlight the benefit of staying informed about changes in accounting standards. By understanding and adapting to these changes, managers can reduce potential disruptions to financial reporting and ensure smoother implementation. The evidence suggests that EFA accounting standard changes help mitigate firms' opportunistic use of the accounting discretion. It is important for regulators to strengthen the enforcement environment to ensure compliance with the standards across firms.

The rest of this paper is structured as follows. The next section provides the standard setting background of equity instruments accounting. I discuss prior research literature on determinants of EFA classification choices and the value relevance of EFAs that lead to my hypotheses. Section 4.3 represents my sample and research design. Section 4.4 is the use of EFAs and descriptive statistics of my sample. Section 4.5 presents the results of the determinants and usefulness of EFA classification choice. Section 4.6 concludes the paper with a discussion.

4.2 Related Literature and Hypothesis Development

4.2.1 Equity financial instruments accounting and standard changes

The global financial crisis brought to light many issues relating to the intricacy and

opaqueness of accounting for financial instruments, prompting the IASB to replace financial instruments accounting standard IAS 39 with IFRS 9 (IASB, 2014). A completed version of IFRS 9 was issued in July 2014 with an effective date of on or after 1st January 2018, with early application permitted.[22]

One cause of financial instruments' accounting complexity comes from the classification and measurement of equity financial instruments of other entities (EFAs: equity financial assets). Under IAS 39, an EFA is classified as held for trading if it is acquired for the purpose of selling in the near term or if there is evidence of a recent actual pattern of short-term profit-taking (IAS 39, para 9). However, the default EFA classification is available-for-sale assets, which is a residual category that captures assets that do not meet the criteria of any of the other categories (e.g. held-to-maturity assets or loans and receivables) within the standard and management has the intention to hold them for a longer period (BDO, 2018; Taylor, 2017a). EFAs shall be measured at fair value except for those that do not have a quoted price in an active market and whose fair value cannot be reliably measured, which shall be measured at cost (IASB, 2008, para IN4 and BD 2; IAS 39, para 43 and 46). IFRS 9 removes the classification categories and cost measurement from IAS 39 and results in the default classification of EFA as fair value through profit or loss (FVTPL) but allows fair value through other comprehensive income (FVTOCI) option (Barnoussi et al., 2020; IFRS 9, para 4.1.4). The IASB allows the FVTOCI option to address firms' strategic investments, which are of more holding than trading instruments (Street, 2014).

Under IAS 39, the cumulative fair value gains or losses (FVGL) from EFAs that

[22]In 2016, the IASB introduced a temporary exemption from applying IFRS 9 for entities whose activities are predominantly related to insurance until IFRS 17 *Insurance contracts* is effective (IASB., 2020a).

are classified as available-for-sale assets "previously recognised in OCI shall be reclassified from equity to profit or loss as a reclassification adjustment (IAS 39, para 55)" when derecognised. However, IFRS 9 prevents firms' FVGL on EFAs from being recycled to net income when the EFA is derecognised once FVTOCI is chosen at initial recognition (IFRS 9, para 5.7.5). The prohibition of recycling brought intense discussion when the IASB was developing IFRS 9. The European Financial Reporting Advisory Group (EFRAG) considers that the irrevocable FVTOCI option for EFAs is unlikely to appeal to long-term investors, and decision usefulness may be reduced without recycling (EFRAG, 2015; Löw and Erkelenz, 2022). Sue Lloyd, the former IASB vice chair, said, "Recycling can provide a confusing presentation of performance. The Board's view is that when an investment is held for strategic purposes (i.e. the intended narrow population), these gains and losses are not part of an investor's performance" (Lloyd, 2018). Thus, whether recycling should be allowed and the impact on decision usefulness remains an area of concern for standard setters (IASB, 2022b).

Through the review of literature on IFRS 9, Awuye and Taylor (2024) document that the financial instrument standard mostly affects entities in the finance sector and existing research also focuses on financial firms. The objective of this study is to extend the knowledge of how firms use EFAs, what drives firms' EFA classification choice, the value relevance of EFAs, and the consequences of IFRS 9 implementation in light of the changes to the EFA accounting standard in both non-financial and financial firms.

4.2.2 Determinants of EFA classification choice

The determinants of accounting choices when selecting one accounting method over

another have been discussed in extant literature (Da Costa et al., 2020; Israeli, 2015; Pinto and Morais, 2022). Agency theory highlights potential conflicts of interest between managers and shareholders, particularly when managers have discretion over accounting choices (Morris, 1987). Under IFRS 9, firms can classify EFAs either at FVTPL or FVTOCI, a decision that can influence reported earnings. On the one hand, some argue that firms comply with accounting standards and determine the EFA classification based on the underlying nature and purpose of the investment. On the other hand, the EFA classification choice may be driven by managerial incentives, reflecting how accounting discretion can be influenced by agency-related motives.

Research on determinants of firms' EFA classification choice is limited, especially in the context of the recent mandatory application of IFRS 9. Pinto and Morais (2022) examine factors influencing the classification of equity instruments using a sample of the top 100 UK and 50 European firms (FTSE 100 and EURO STOXX 50 firms). They find that in the IFRS 9 transition year, leverage is the main driver behind reclassifying available-for-sale assets to FVTOCI; moreover, CEO compensation affects EFA classification choice before IFRS 9 and fair value measurement hierarchy has an impact on the choice both before and after IFRS 9 (Pinto and Morais, 2022).

IAS 39 requires firms to classify EFAs as available-for-sale assets if they are not for trading and management intends to keep them for a longer period (BDO, 2018). Management intent is a vague rule that creates the possibility of earnings management when recycling FVGL to net income is allowed under IAS 39 (Barth et al., 2017; Dong and Zhang, 2018; Lu et al., 2023). The IASB has the intention to reduce management discretion and subjectivity in classifying EFAs by making the FVTPL as default classification under IFRS 9 but allows irrevocable election of FVTOCI at initial

recognition (Elnahass et al., 2018; Mechelli et al., 2020). Therefore, it is of interest to know what drives firms' EFA classification choice and whether it changed after IFRS 9.

Based on the nature and purpose of the choice, I discuss EFA characteristics as the determinants for its classification choice from two perspectives: factors reflecting underlying economics and factors implying opportunistic use. Firstly, I identify EFA amounts as a factor reflecting underlying economics. Due to differing business nature, non-financial and financial firms may have different motivations for investing in equity instruments. Based on the pecking order theory, non-financial firms need to distribute their excess cash to shareholders or prioritise the excess cash as a source of internal financing rather than investing in securities for capital gain. However, many EFAs are viewed as strategic investments with the intention of establishing or maintaining a long-term operating relationship with the investee entity rather than trading for profit-taking (IASB, 2009b, para BC68).

Some studies investigate the decision-making process for firms' strategic investments (Alkaraan and Northcott, 2013; Frezatti et al., 2013). For non-financial firms, when EFA amount comprises a larger proportion of total assets, the investment decision becomes more crucial so that management is more likely to ensure the investment aligns with the firm's overall strategic goals. From one point of view, a large amount of EFA investment is more likely to be strategic rather than trading. From the other point of view, firms are more likely to maintain a long-term relationship with the investee when their EFA holding amount is large. EFA amount may reflect the underlying business nature regarding the purpose of EFA investment. Therefore, I predict that EFA amount is positively related to the FVTOCI choice only after IFRS 9, since an EFA investment needs not be strategic in order to be classified as available-for-sale assets as per IAS 39.

Financial firms are normally deeply integrated into the capital market with a primary focus on investment activities. In line with the business objective in financial firms, EFAs are mainly held for generating profit through trading and diversifying investment portfolio risk. Under IAS 39, EFA classification may need to be based on managers' holding intention to either trade in a short-term or hold for a longer period for risk management, regardless of the amount.[23] Similarly, financial firms' approach to managing EFAs may remain unchanged after IFRS 9 – whether they trade for profit-taking or hold for risk management – which is unrelated to the EFA amount. Therefore, I predict that there is no relationship between EFA amount and its classification choice in financial firms, regardless of IFRS 9 adoption. I state my first determinant hypothesis in null format as follows.

H1a: There is no relationship between EFA amount and FVTOCI classification choice, regardless of IFRS 9 adoption.

Secondly, making EFA classification choice by considering EFA effect on net income or the level of fair value hierarchy may imply firms' opportunistic use of the choice. Unlike other accounting choices that can have an impact on both net income and financial position, the EFA classification choice only affects net income without incurring any differences in firms' financial positions. The literature documents earnings management behaviour through realising FVGL on available-for-sale assets in both financial and non-financial firms in countries that allow the recycling of the FVGL on EFAs. Barth et al. (2017) and Dong and Zhang (2018) find that US banks manage earnings

[23] For many financial companies whose major business is investing, they diversify their portfolio by investing in different EFAs. They may prefer to hold a mix of equity assets across sectors or regions to reduce their risks from holding a single equity asset. Investment firms may prefer to hold these assets for risk management for a longer term.

by selectively trading available-for-sale assets to realise their FVGL from equity to profit or loss. Lu et al. (2023) provide evidence in Chinese non-financial firms that only when firms' net income is positive or FVGL on available-for-sale assets is large enough to offset negative net income, do firms smooth their earnings through realised gains and losses on available-for-sale assets.[24]

On the one hand, the FVTOCI option enables firms to avoid earnings volatility when the fair value of EFA fluctuates, and manipulate earnings when recycling is allowed under IAS 39. On the other hand, the FVTPL option provides a potential source of earnings that can be reflected in net income immediately. However, since EFA classification may be based on the purpose of holding such assets, EFA effect on net income may not be considered when making classification decisions. Therefore, I examine whether EFA classification choice is used opportunistically by considering EFA effect on net income and state my second determinant hypothesis as follows.

H1b: There is no relationship between EFA effect on net income and FVTOCI classification choice, regardless of IFRS 9 adoption.

Lastly, when there is no quoted price in an active market, level 3 fair value hierarchy can be applied to EFA measurement. Song et al. (2010) find that banks recognise greater changes in assets measured at level 3 fair value when they have lower earnings. Laux and Leuz (2010) document that banks reclassify assets measured at level 1 fair value to level 3 fair value during the global financial crisis to avoid recognising the impairment losses. Similarly to Pinto and Morais's (2022) study, it is possible that FVTPL

[24] EFA accounting standards requirements in the United States (US), which is the Statement of Financial Accounting Standards (SFAS) No. 115 *Accounting for Certain Investments in Debt and Equity Securities*, and in China, which is the Chinese Accounting Standards (CAS) 22 *Recognition and Measurement of Financial Instruments*, are comparable to IAS 39.

is preferred when EFA is measured at level 3 fair value compared to level 1 and 2, as firms have more discretion over the fair value movements and are able to control earnings volatility. Therefore, I examine whether level 3 fair value measurement for EFAs drives firms' classification choice and state my third determinant hypothesis as follows.

H1c: There is a negative relationship between EFA level 3 fair value measurement and FVTOCI classification choice, regardless of IFRS 9 adoption.

4.2.3 Usefulness of EFA amount and classification choice

EFA amount accounts for an important portion of firms' total assets, particularly in financial firms (Awuye and Taylor, 2024; Dong and Zhang, 2018; Lu et al., 2023). Literature discusses the usefulness of available-for-sale assets from the perspective of comparing the historical cost to fair value measurement. Khurana and Kim (2003) find that fair value provides a higher quality of information than historical costs for available-for-sale assets in bank holding companies. Since IFRS 9 eliminates the cost alternative permitted by IAS 39 and mandates all fair value measurements for EFAs, it is of interest to know the extent to which EFA amounts provide incremental explanatory power to firms' share prices and whether it is changed after IFRS 9. I examine the value relevance of EFA amount and state my hypothesis as follows.

H2a: EFA amounts provide value relevance in firms, regardless of IFRS 9 adoption.

Pinto and Morais (2022) examine a sample of FTSE 100 and EURO STOXX 50 firms and document that the FVTPL option for EFAs provides incremental value relevance both before and after IFRS 9, while the FVTOCI option becomes value relevant

after IFRS 9. Research on examining the usefulness of FVGL on EFAs is limited, and there are no conclusive results on the value relevance of OCI in the literature. Cahan et al. (2000) and Isidro et al. (2004) do not find incremental value relevance of OCI. However, Khan et al. (2018) find that fair value movement of available-for-sale assets is one of the two components that drive the value relevance of OCI. EFRAG expresses concerns about the relevance of reported net income if FVGL on EFAs cannot be recycled to profit or loss once FVTOCI is chosen under IFRS 9 (EFRAG, 2015). However, a different view suggests that if recycling does not improve users' access to information, it should be abandoned without introducing complexity to financial reporting (Rees and Shane, 2012). Therefore, I examine whether the FVGL on EFAs is value relevant and whether the reporting location (either profit or loss or OCI) makes a difference to investors, especially when recycling is prohibited under IFRS 9, and state my hypothesis as follows.

H2b: EFA classification does not affect value relevance of FVGL on EFAs, regardless of IFRS 9 adoption.

4.3 Research Method

4.3.1 Data and sample

My initial sample in this study comprises Australian Securities Exchange (ASX) 500 firms.[25] ASX 500 firms represent more than 90% of the market capitalisation of ASX

[25]Australia adopts IFRS word for word. Australian Accounting Standards Board (AASB) 139 *Financial Instruments: Recognition and Measurement* is equivalent to IAS 39 and AASB 9 *Financial instruments* is equivalent to IFRS 9.

firms, and firms that are not in the ASX 500 have few EFAs. My main purpose is to examine the use, determinants and usefulness of EFAs and whether they have changed after IFRS 9. Based on this objective, I require a firm to be listed on the ASX three years before and after IFRS 9 adoption. The time-series data provides comparability and allows me to analyse the impact of IFRS 9 on firms' EFA applications. I exclude 110 firms that do not have a six-year listing period (three years before and after IFRS 9 adoption) on the ASX. I exclude managed funds, firms that do not use IFRS, and insurance companies that are exempt from adopting IFRS 9 until IFRS 17 is effective. Panel A in Table 4.1 displays my sample selection process and results in a final sample of 2262 observations with 377 unique firms.

[INSERT TABLE 4.1 HERE]

I collect EFA information from firms' annual reports by hand. Firstly, I identify the year of initial application, i.e. the year in which firms first apply IFRS 9. Since the IASB issued IFRS 9 in 2014 and allows early adoption, 44 unique firms, including 12 from the financial sector, applied IFRS 9 earlier than its effective date. Of the firms in my sample, 88.3% (untabulated) applied IFRS 9 after it went into effect. Given that the majority of my sample firms have 30th June as the balance date, 2019 is the most common year of initial application for ASX 500 firms. I denote the year of initial application as year *t* for firm *i*, and year *t-1*, *t-2*, *t-3* and *t+1*, *t+2* represent years before and after IFRS 9 adoption.

Secondly, I search firms' annual reports to check whether they have EFAs or not. I use available-for-sale assets information under IAS 39 if there is no separate disclosure of the portion of EFAs in available-for-sale assets. The term EFA is used both before and after IFRS 9 for simplicity. Panel B in Table 4.1 displays my sample distribution by

Global Industry Classification Standard (GICS) sectors. Of the sample firms, 39.48% (893 observations) have EFAs. Out of all the sectors, the financials have the highest percentage (80.65%) of firms (300 observations) that have EFAs, which is in line with the nature of the sector.

Thirdly, if the firm has EFAs, I then collect the balance amount, the classification choice (either FVTOCI or FVTPL), the FVGL effect, and fair value hierarchy for firms' EFAs. For firms that have multiple EFAs and disclose them in separate lines, I collect the aforementioned information for each EFA line item and aggregate them. If there is no disclosure of the FVGL on EFAs, I assume that it is either zero or immaterial and assign zero to FVGL for that firm-year. An example of how EFA information is disclosed in a firm's annual report during the year of initial application can be found in Appendix 1. All other firm data (e.g. firm financials, corporate governance, etc.) are collected either manually from firms' annual reports or from the Refinitiv database.

4.3.2 Research design

Determinants of EFA classification choice

A firm may have multiple equity investments that are classified into different categories. I define a firm as an FVTOCI user if any of its EFAs is classified as FVTOCI.[26] I specify the following logistic model to test H1 over samples that have EFAs.

[26] FVTOCI is only available after IFRS 9, but I use the term FVTOCI for available-for-sale assets that their FVGL are presented at OCI under IAS 39.

$$FVTOCI_{i,t} = \beta_0 + \beta_1 EFAAmt_{i,t} + \beta_2 EFAeffect_{i,t} + \beta_3 EFAmeas_{i,t} + \beta_4 LEV_{i,t} + \beta_5 CEOCOMP_{i,t} + \beta_6 LnTA_{i,t} + \beta_7 ROEadj_{i,t} + \beta_8 ACIND_{i,t} + \beta_9 BIG4_{i,t} + \beta_{10} ANALYST_{i,t} + YearFE + IndustryFE + \varepsilon_{i,t} \quad (1)$$

Where *FVTOCI* is an indicator variable that equals one if a firm *i* is an FVTOCI user in year *t* and zero otherwise. *EFAAmt* is the EFA balance amount at year-end deflated by total assets in testing H1a. To test H1b, *EFAeffect* measures EFA effect on net income and is calculated as the absolute value of a ratio of any FVGL on EFAs to net income for firm *i* in year *t*. For H1c, *EFAmeas* is an indicator variable that equals one if firm *i* uses level 3 fair value hierarchy to measure any of its EFAs in year *t*, and zero otherwise.

I control for firm contracting incentives since prior literature provides evidence that accounting choice is determined to influence one or more contractual arrangements (Alves, 2019; Fields et al., 2001; Murphy, 2000). Firstly, existing research documents that firms with high financial leverage are at greater risk of breaching debt covenants and are more likely to choose the accounting method to reduce earnings volatility (Israeli, 2015). Pinto and Morais (2022) find that firms with high leverage have greater contractual risk and reclassify more available-for-sale assets to FVTOCI only during the IFRS 9 transition year. I include *LEV*, which is the leverage calculated by total liabilities divided by total assets, as a control. Secondly, literature shows that managers take advantage of the discretion allowed in accounting standards to increase their compensation, especially short-term incentives (Guidry et al., 1999; Healy, 1985; Murphy, 2000). EFA classification choice affects firms' net income, which has an immediate effect on profitability. As an important metric of business performance, net income is a common

factor in considering management compensation (De Angelis and Grinstein, 2015; Graham et al., 2005). I control for *CEOCOMP*, which is computed as the ratio of the CEO's variable compensation (including cash bonus and equity awards) to total compensation, in my model.

Following Pinto and Morais (2022), I control for firm size (*LnTA)* and profitability (*ROEadj*). *LnTA* is the natural logarithm of total assets that larger firms are more likely to invest in EFAs since they have more surplus cash. Da Costa et al. (2020) and Barlev et al. (2007) suggest that firms with a high return on assets (ROA) would face greater scrutiny and demands from unions and others and are likely to choose income-increasing accounting methods. I use return on equity before any FVGL on EFAs effect (*ROEadj*) rather than ROA, since ROE is more consistent with the investor decision-making objective of financial reporting (Zang et al., 2022).[27]

Moreover, I control for corporate governance factors that monitor firms' compliance with accounting standards for financial reporting quality improvement (Schäuble, 2019). I include audit committee independence (*ACIND*) as a control since effective monitoring by the audit committee improves the accuracy of financial estimates and constrains opportunistic actions made by managers (Ashbaugh-Skaife et al., 2006; Dechow et al., 1996; Larcker et al., 2007; Srinidhi et al., 2011). I control for *BIG4* if a firm *i* is audited by the Big Four in year *t*. Literature documents that prestigious auditors are more likely to identify managers' opportunistic behaviour and have a strong incentive to enforce higher earnings quality (Francis and Wang, 2008). I also control for analyst coverage (*ANALYST*) that a high analyst coverage contributes to firms' information

[27] I examine other profitability ratios, such as ROA and net profit margin, and find consistent results.

disclosure and monitors firms' financial reporting quality (Yu, 2008).

To test whether determinants of firms' EFA classification choices have been changed after IFRS 9, I examine the determinants model in samples before and after IFRS 9 separately. With different holding purposes, I estimate the model for non-financial and financial firms separately. To control for potential industry variations in EFA classification choice as well as time specific effects, I include year and industry fixed effects. All continuous variables in this study are winsorised at one per cent on both tails to minimise outliers' influence. Standard errors are clustered at the firm level. Detailed variables definitions can be found in Appendix 2.

Usefulness of EFA amount and classification choice

To extend our knowledge regarding the relevance and reliability of equity instruments' accounting as reflected in equity values, I test the value relevance of (1) EFA amount (2) FVGL on EFAs. Based on an extensively employed Ohlson (1995) model, I follow other value relevance studies and estimate the price-level regression model over samples that have EFAs (Barth et al., 1996, 2001; Khan et al., 2018; Liao et al., 2021).

$$Price_{i,t} = \beta_0 + \beta_1 BVE\_S_{i,t} + \beta_2 CI\_S_{i,t} + \varepsilon_{i,t} \quad (2)$$

Where *Price* = the share price of firm *i* in year *t* three months after its balance date; *BVE* = book value of equity; *CI*= total comprehensive income. All variables except *Price* are deflated by the number of outstanding shares (denoted by _S). Although many studies use net income in the value relevance model (Barth et al., 1996; Ciftci et al., 2014; Pinto and

Morais, 2022), I use *CI,* because the Ohlson (1995) model is based on the clean surplus rule. Further, considering the objective of examining the usefulness of FVGL on EFAs in both profit or loss and OCI, comprehensive income fits in this study.

To investigate the incremental value relevance of the EFA amount, I isolate the EFA amount (*AmtEFA*) from *BVE* and include *AmtEFA* as a separate component of the model. I also separate FVGL on EFAs in profit or loss and/or OCI from *CI* to examine the value relevance of FVGL. The effect of EFA on profit or loss is denoted as *PLEFA* and on OCI is denoted as *OCIEFA*. If there is no disclosure of firms' EFA effect, I assume it is zero and immaterial.

$$Price_{i,t} = \beta_0 + \beta_1 BVE\_S^*_{i,t} + \beta_2 AmtEFA\_S_{i,t} + \beta_3 CI\_S^{**}_{i,t} + \beta_4 PLEFA\_S_{i,t} + \beta_5 OCIEFA\_S_{i,t_3} + \varepsilon_{i,t} \quad (3)$$

Where *BVE_S** is computed as *BVE_S – AmtEFA_S*. *CI_S*** is *CI_S* excluding *PLEFA_S* and *OCIEFA_S*. To examine whether value relevance changed after the adoption of IFRS 9, I test the model on samples before and after IFRS 9 for non-financial and financial firms separately.

4.4 The Use of EFAs and Variables Descriptive Statistics

4.4.1 The use of EFAs and classification choice

To address my first research objective of understanding the use of EFAs and whether it changed after IFRS 9, I examine firms' EFA holding behaviour from three perspectives:

whether to invest in EFAs or not, EFA classification choice, and EFA amount. Figure 4.1 presents the percentage of firms that have EFAs and the use of FVTOCI classification throughout the six years surrounding IFRS 9 adoption in non-financial and financial firms, respectively.

[INSERT FIGURE 4.1 HERE]

As shown in Panel A of Figure 4.1, the percentage of non-financial firms that have EFAs is relatively flat, around 31% over the six years around IFRS 9 adoption, with no significant variation in the Chi-square test (untabulated). In line with Zang et al. (2022), I also do not find significant changes in the percentage of FVTOCI users of firms that have EFAs with the Chi-square test, even though there is a decrease from 68.0% one year before IFRS 9 to 58% in the initial adoption year. In untabulated analysis, there is no discernible pattern in the percentage of FVTOCI users in firm samples over successive quartile either based on firm size or EFA amount. Table 4.2 displays the descriptive statistics of EFA amount to total assets. The EFA amount comprises around 3% of total assets of non-financial firms on average in each of the six years around IFRS 9 adoption. I compare EFA amount one year before and after the adoption of IFRS 9 with a t-test and do not find significant differences.

[INSERT TABLE 4.2 HERE]

Panel B of Figure 4.1 shows EFAs use and classification choice in financial firms. Using the Chi-square test, there is no significant difference in whether or not to invest in EFAs over the six years, given around 80% of financial firms have EFAs each year. About 52% of financial firms with EFAs are FVTOCI users each year, with no significant changes over the six years. In each of the six years around IFRS 9 adoption, the EFA

amount represents, on average, about 37.7% of the total assets of financial firms, as shown in Table 4.2. Again, I do not find a significant difference in EFA amount one year before and after IFRS 9 adoption in financial firms with a t-test.

The results show that IFRS 9 does not change the use of EFAs in both non-financial and financial firms regarding whether or not to invest in EFAs, EFA classification choice, or EFA amounts, and this result is consistent with Zang et al.'s (2022) study in Australia and Löw and Erkelenz's (2022) study in European banks. However, Fang et al.'s (2022) study in China finds that firms sell their prematurely available-for-sale assets after the announcement but before the implementation of the Chinese equivalent IFRS 9 to avoid being adversely affected by new accounting standards. I note that the notice period given before the mandatory adoption of IFRS 9 is different between China and Australia. The IASB completed the requirements for changing EFA accounting standards under IFRS 9 in July 2014 and required mandatory adoption almost four years later. However, China announced its Chinese version of IFRS 9 in March 2017 and required implementation of the same as IFRS 9 in January 2018 (Fang et al., 2022). Literature documents that familiarity with the standards facilitates greater confidence in preparers and investors in the quality of accounting information (Alali and Foote, 2012; Liu and Liu, 2007; Mala and Chand, 2015). The short notice period of less than one year in China may cause firms to overreact to the financial consequences and respond by selling prematurely available-for-sale assets. The implication of my results is that a longer notice period before the mandatory adoption of IFRS 9 facilitates familiarity with the standards and mitigates the potential cost caused by overacting to the standard changes. The debate on whether to recycle FVGL on EFAs from equity to profit or loss when derecognised has no impact on the use of EFAs in

practice.

4.4.2 Sample descriptive statistics

Panel A of Table 4.3 presents summary statistics of variables used in the determinants model of Equation (1) in non-financial and financial firms before and after IFRS 9 application, respectively. On average, EFA amount comprises 3.0% of total assets with a median value of 0.7% in non-financial firms before IFRS 9 and 3.0% (0.5%) on average (median) after IFRS 9. The average (median) EFA amount is 37.3% (13.0%) of total assets in financial firms before IFRS 9 and 38.2% (14.7%) after IFRS 9. The mean (median) FVGL on EFAs comprises 8.3% (0.3%) of net income before IFRS 9 and 8.5% (0.2%) after IFRS 9 in non-financial firms. However, FVGL on EFAs accounts for a higher proportion of net income in financial compared to non-financial firms, given the average *EFAeffect* of 35.6% before and 36.5% after IFRS 9. Firms that have a level 3 fair value hierarchy to measure any of their EFAs increased after IFRS 9 in both non-financial (76 firms increased to 103 firms) and financial firms (39 firms increased to 53 firms).

[INSERT TABLE 4.3 HERE]

Panel B of Table 4.3 contains descriptive statistics for variables used in the value relevance model. The average (median) share price three months after its balance date (*Price*) is 6.3 (2.6) before and 8.0 (3.0) after IFRS 9 in non-financial firms, compared to 11.9 (5.1) before and 12.9 (4.3) after IFRS 9 in financial firms. The mean value of EFA amount deflated by total outstanding shares (*AmtEFA_S*) is 0.16 before and 0.19 after IFRS 9 in non-financial firms, compared to a larger amount of EFAs in financial firms with an average *AmtEFA_S* 3.1 before and 3.0 after IFRS 9. The average *OCIEFA_S* for

non-financial firms is 0.001 before and -0.007 after IFRS 9, respectively, whereas for financial firms, it is 0.025 before and 0.008 after IFRS 9, respectively. In non-financial firms, the average *PLEFA_S* is 0.000 before and 0.002 after IFRS 9, whereas in financial firms, it is 0.013 before and 0.012 after IFRS 9.

Overall, my variable descriptive statistics are comparable to the existing research in the Australian market (Nguyen and Faff, 2006; Yang, 2019). Detailed variable definitions can be found in Appendix 2.

4.5 Determinants and Usefulness Results

4.5.1 Determinants of EFA classification choice

Panel A in Table 4.4 shows the results of EFA classification determinants in non-financial firms before and after IFRS 9, respectively. As shown in Column (1), non-financial firms are more likely to choose FVTOCI classification when EFA effect has a lower impact on net income before IFRS 9, given the coefficient -0.795 for *EFAeffect*. The result is consistent after I control for firm contracting incentives, firm size, profitability, and corporate governance, showing that the negative relationship between *EFAeffect* and FVTOCI choice is significant at 1% level, as displayed in Column (3). Column (2) presents the results of EFA classification determinants in firm-years after IFRS 9, showing *EFAAmt* is significantly positively associated with FVTOCI choice. After including all the control variables, I find a similar result, that the FVTOCI choice is preferred when EFA amount is large after IFRS 9, as shown in Column (4). In contrast to Pinto and Morais (2022), I do not find that level 3 fair value measurement affects firms' choice of EFA classification.

[INSERT TABLE 4.4 HERE]

The results imply that there is a possible opportunistic use of the discretion given in IAS 39 in non-financial firms by considering EFA effect on net income when making the classification decision. Non-financial firms may prefer to reflect FVGL on EFAs immediately in earnings when the effect is greater. This is consistent with the findings of the significant negative relationship between two contractual incentives (*LEV* and *CEOCOMP*) and the FVTOCI choice, suggesting the possibility of firms using their EFA classification choice opportunistically to boost earnings when there is a higher contractual risk and a larger portion of variable compensation for the CEO. However, after IFRS 9, a large EFA amount might reflect the underlying economics that is a strategic investment made by non-financial firms in which FVTOCI is chosen, indicating compliance with the standard. The no significant impact of opportunistic factors and contractual incentives on FVTOCI choice implies that the potential abuse of this choice is constrained after IFRS 9.

Next, Panel B in Table 4.4 presents the results of the determinants model in financial firms. As shown in Column (1) and (2), EFA characteristics are not related to FVTOCI choice, regardless of IFRS 9 adoption. After controlling for firm contracting incentives, firm size, profitability, and corporate governance, as shown in Column (3) and (4), I find consistent results that EFA amount, EFA effect on net income, or EFA measurement are not related to FVTOCI choice. The significant negative relationship between leverage and FVTOCI choice before IFRS 9, as shown in Column (3), implies the EFA classification choice may be used opportunistically in situations where financial firms are more likely to violate debt covenants.

Robustness analysis

Firstly, since the initial year of IFRS 9 adoption is the only year that firms can reclassify their existing EFAs, I examine the determinants model on a subsample of firms in year *t*, as shown in Column (5), in both non-financial and financial firms. Secondly, the subsample test for firms in year *t* also shows the determinants of EFA classification choice without COVID-19 impact.[28] I find consistent results in these subsample tests.

In combination, the determinants of EFA classification choice in non-financial firms changed from the EFA effect on net income and contractual incentives of risk and compensation before IFRS 9 to the EFA amount after IFRS 9. The risk of debt covenant violation drives financial firms' EFA classification choice before IFRS 9. The implication is that the potential opportunistic use of the EFA classification discretion in standards is mitigated after IFRS 9.

4.5.2 Usefulness of EFA amount and classification choice

Considering different EFA investing purposes, I test the value relevance model in non-financial and financial firms separately in both pre- and post-IFRS 9 periods, as shown in Table 4.5. Firstly, I report the baseline model that book value of equity and total comprehensive income are significantly positively associated with share price in both non-financial and financial firms before and after IFRS 9, as shown in Panel A Columns (1)-(2) and (5)-(6) in Table 4.5, and the results are consistent with existing literature (Khan et al., 2018; Rees and Shane, 2012).

[28] The majority of my sample firms have 2019 as the transition year *t*, with some early adopters having the year *t* earlier than 2019.

[INSERT TABLE 4.5 HERE]

Secondly, I separate EFA amount from the book value of equity and the effect of FVGL on EFAs from comprehensive income before and after IFRS 9 in non-financial and financial firms, respectively. Neither the amount of EFA nor FVGL on EFAs provides incremental value relevance for non-financial firms, as shown in Panel A Columns (3)-(4), and it does not change after IFRS 9.

Given a larger proportion of EFA to total assets in financial firms compared to non-financial firms, EFA amount provides value relevance in financial firms both before and after IFRS 9, as shown in Panel A Columns (7)-(8). *OCIEFA_S* is significantly positively associated with share price in financial firms before but not after IFRS 9, implying that IFRS 9 decreases the usefulness of EFA effect on OCI for financial firms.

Robustness analysis

Firstly, I further examine the value relevance model in a subsample of firm-years whose EFA amount is larger than the median, as shown in Panel B Columns (1)-(2) for non-financial firms and Columns (5)-(6) for financial firms. EFA amount becomes value relevant in both non-financial and financial firms after IFRS 9, suggesting IFRS 9 improves the value relevance of EFA amount when it is more important to firms' assets. Secondly, I examine the value relevance model in subsample firms that have a large size, as shown in Panel B Columns (3)-(4) for non-financial firms and Columns (7)-(8) for financial firms. I find consistent results that *OCIEFA_S* provides value relevance only before IFRS 9 for financial firms.

Literature does not have conclusive results on the usefulness of OCI components (Cahan et al., 2000; Isidro et al., 2004; Khan et al., 2018). Pinto and Morais (2022) find

that the EFA effect on OCI becomes value relevant after but not before IFRS 9 in the top 100 UK and 50 European firms. However, my results imply that when FVGL on EFAs are able to recycle to profit or loss under IAS 39, the EFA effect on OCI provides incremental information to investors in financial firms. Nevertheless, the value relevance no longer exists when recycling is prohibited under IFRS 9. I call for caution in the interpretation of IFRS 9 in improving information usefulness by having the market value EFA amounts when they account for a large portion of firms' assets but not the EFA effect after IFRS 9.

4.6 Conclusion

Accounting for financial instruments has been asked to be improved, especially after the global financial crisis (Duh et al., 2012; PwC, 2017). Due to its complexity, a completed and integrated standard for financial instruments — IFRS 9 — was issued until 2014 as a replacement for IAS 39. IFRS 9 was effective on or after 1st January 2018, with early application permitted. One major change in IFRS 9 regarding the classification and measurement of EFAs is the prohibition of recycling FVGL on EFAs from equity to profit or loss once FVTOCI is chosen at initial recognition. The contentious issue of whether to recycle FVGL on EFAs has been debated widely.

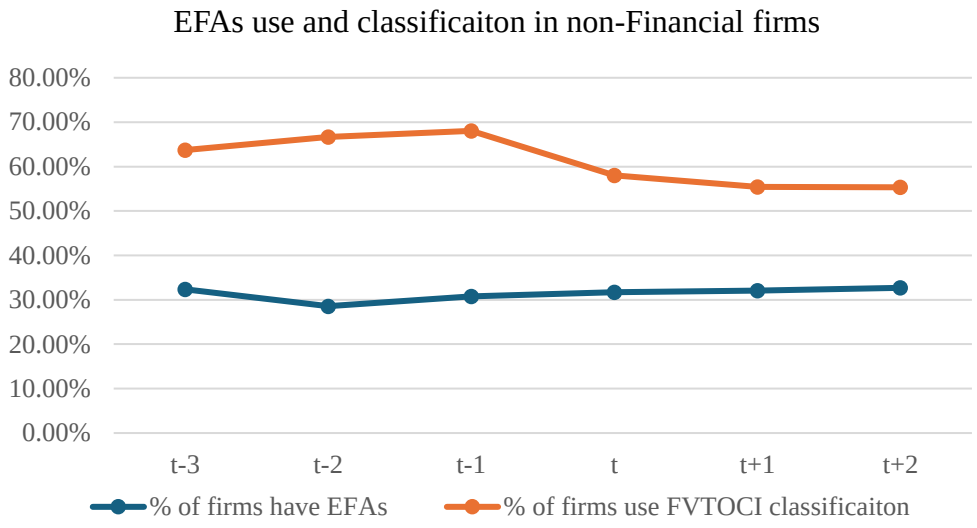
The findings from a sample based on firms in the ASX 500 three years before and after IFRS 9 adoption show that the use of EFAs in practice in terms of whether to invest in EFAs or not, EFA classification choice, and holding amounts did not change in either non-financial or financial firms after IFRS 9, suggesting a more extended notice period prior to the mandatory application of the new accounting standard fosters smooth transfer from IAS 39 to IFRS 9. There is a potential opportunistic use of the EFA classification

discretion before IFRS 9 by considering EFA effect on net income and contractual incentives of risk and compensation in non-financial firms or contractual risk in financial firms. However, this potential opportunistic use is constrained after IFRS 9. When EFA amount comprises a higher proportion of firms' assets, it provides value relevance after IFRS 9. The EFA effect on OCI only provides incremental value relevance for financial firms before but not after IFRS 9.

My paper is among the first to contribute to the effect of IFRS 9 implementation. The implications for standard setters are (1) a longer notice period before the mandatory application of IFRS 9 allows stakeholders, including managers, investors, preparers, and auditors, more time to familiarise themselves with the requirements of the new standard and facilitates a smooth transfer from IAS 39 to IFRS 9; (2) firms have the possibility to speculate on the use of EFA classification choice discretion given in IAS 39; (3) standard setters need to be cautious when evaluating the information improvements in IFRS 9 as they may not be market wide; (4) the prohibition of recycling EFA effect from equity to profit or loss under IFRS 9 has no practical impact on firms, constrains earnings manipulation through realising FVGL on EFAs, and may not provide value relevance to investors.

Figure 4:1 EFAs use and classification before and after IFRS 9 adoption

Panel A: EFAs use and classification in Non-Financial firms



Panel B: EFAs use and classification in Financial firms

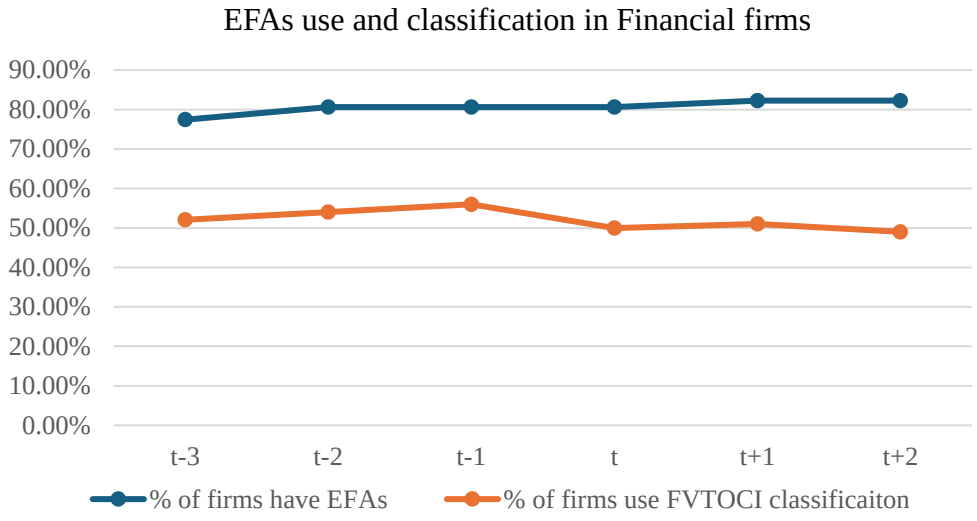


Table 4:1 Sample selection process and distributions by GICS sector

Panel A: Sample selection process

	Unique firms	Firm-year observations
ASX 500 firms in year 2022	500	3000
Exclude: firms do not list on ASX for 6 years (3 years pre-and post-IFRS 9 adoption)	-110	-660
Managed fund	-3	-18
Firms do not use IFRS	-9	-54
Insurance firms that are exempt from adopting IFRS 9 till IFRS 17 effective	-1	-6
Total sample	**377**	**2262**

Panel B: Sample distribution by GICS sector

Sector	No. of firms	%	No. of obs.	No. of obs. have EFAs	% of obs. have EFAs
Consumer Staples	15	3.98%	90	38	42.22%
Real Estate	35	9.28%	210	75	35.71%
Materials	88	23.34%	528	250	47.35%
Financials	62	16.45%	372	300	80.65%
Energy	22	5.84%	132	54	40.91%
Consumer Discretionary	43	11.41%	258	34	13.18%
Industrials	27	7.16%	162	36	22.22%
Utilities	7	1.86%	42	4	9.52%
Health Care	32	8.49%	192	24	12.50%
Communication Services	18	4.77%	108	44	40.74%
Information Technology	28	7.43%	168	34	20.24%
Total	**377**	**100%**	**2262**	**893**	**39.48%**

Table 4:2 EFA amount to total assets before and after IFRS 9 adoption

	N	Mean	Median	SD	N	Mean	Median	SD
	Non-Fin				Fin			
t+2	103	2.68%	0.58%	5.86%	51	38.95%	15.59%	41.44%
t+1	101	3.39%	0.44%	7.63%	51	37.09%	13.79%	40.00%
t	100	3.08%	0.45%	6.80%	50	38.58%	19.23%	40.23%
t-1	97	3.16%	0.80%	6.42%	50	37.70%	19.90%	40.23%
t-2	90	2.85%	0.61%	5.15%	50	37.06%	11.64%	40.02%
t-3	102	2.98%	0.83%	5.66%	48	37.00%	11.95%	39.42%
Total	**593**	**3.02%**	**0.56%**	**6.30%**	**300**	**37.74%**	**13.67%**	**39.91%**

This table describes the statistics of EFA amount to total assets in the six years from three years before IFRS 9 adoption (*t-3*) to three years after IFRS 9 adoption (*t+2*) in non-financial (*Non-Fin*) and financial (*Fin*) firms, respectively.

Table 4:3 Descriptive statistics of variables

Panel A: Descriptive statistics for variables used in the determinants study

	Pre-IFRS 9 Non-Fin firms (N=289)			Post-IFRS 9 Non-Fin firms (N=304)			Pre-IFRS 9 Fin firms (N=148)			Post-IFRS 9 Fin firms (N=152)		
	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD
EFAAmt	0.030	0.007	0.058	0.030	0.005	0.068	0.373	0.130	0.396	0.382	0.147	0.403
EFAeffect	0.083	0.003	0.325	0.085	0.002	0.257	0.356	0.000	0.825	0.365	0.000	0.813
LEV	0.378	0.371	0.205	0.392	0.390	0.201	0.445	0.222	0.363	0.452	0.363	0.356
CEOCOMP	0.381	0.414	0.245	0.420	0.474	0.226	0.340	0.367	0.285	0.300	0.351	0.260
LnTA	20.515	20.665	2.290	21.054	21.205	2.042	21.815	20.831	2.635	21.951	20.935	2.606
ROEadj	-0.042	0.079	0.448	0.010	0.077	0.298	0.107	0.083	0.120	0.084	0.067	0.119
ACIND	78.588	100.000	30.730	84.467	100.000	24.778	86.597	100.000	19.013	86.162	100.000	22.428
ANALYST	6.377	5.000	5.757	6.711	6.000	4.945	6.047	2.000	6.791	5.454	2.000	6.090
Dichotomous variables:												
	Yes	%		Yes	%		Yes	%		Yes	%	
FVTOCI	191	66.1%		171	56.3%		80	54.1%		76	50.0%	
EFAmeas	76	26.3%		103	33.9%		39	26.4%		53	34.9%	
BIG4	231	79.9%		262	86.2%		126	85.1%		133	87.5%	

Panel B: Descriptive statistics for variables used in the value relevance study

	Pre-IFRS 9 Non-Fin firms (N=289)			Post-IFRS 9 Non-Fin firms (N=304)			Pre-IFRS 9 Fin firms (N=148)			Post-IFRS 9 Fin firms (N=152)		
	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD
Price	6.315	2.627	13.270	8.027	2.980	14.521	11.903	5.075	18.393	12.897	4.345	22.083
BVE_S	3.324	1.481	6.702	4.090	1.872	7.123	6.923	2.775	9.999	7.354	2.965	10.745
AmtEFA_S	0.156	0.010	0.539	0.193	0.014	1.016	3.101	1.049	5.899	3.016	1.288	5.434
CI_S	0.278	0.118	0.854	0.424	0.102	1.124	0.799	0.288	1.370	0.690	0.230	1.316
OCIEFA_S	0.001	0.000	0.045	-0.007	0.000	0.062	0.025	0.000	0.146	0.008	0.000	0.102
PLEFA_S	0.000	0.000	0.005	0.002	0.000	0.026	0.013	0.000	0.058	0.012	0.000	0.064

Table 4:4 EFA FVTOCI classification choice determinants

Panel A: EFA FVTOCI classification choice determinants in Non-Financial firms					
DV=FVTOCI	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
	Pre	**Post**	**Pre**	**Post**	**Initial**
EFAAmt	**1.021**	**9.876*** **	**2.461**	**13.991*** **	**12.579** **
	(0.400)	(2.610)	(0.850)	(3.120)	(2.370)
EFAeffect	**-0.795***	**0.084**	**-1.197*** **	**0.323**	**-0.258**
	(-1.910)	(0.100)	(-2.730)	(0.370)	(-0.270)
EFAmeas	**0.358**	**0.206**	**0.239**	**-0.182**	**0.127**
	(0.650)	(0.440)	(0.400)	(-0.340)	(0.220)
LEV			**-2.766** **	**-0.306**	**-0.488**
			(-2.240)	(-0.220)	(-0.250)
CEOCOMP			**-1.944** **	**0.693**	**1.509**
			(-2.080)	(0.640)	(0.890)
LnTA			**0.289** **	**0.103**	**0.011**
			(2.060)	(0.560)	(0.050)
ROEadj			**-0.438**	**-1.402**	**-2.425**
			(-1.180)	(-1.580)	(-0.880)
ACIND			**0.019** **	**0.009**	**0.021**
			(2.460)	(1.130)	(1.430)
BIG4			**0.682**	**0.468**	**1.041**
			(0.990)	(0.610)	(0.930)
ANALYST			**-0.002**	**0.118***	**0.111**
			(-0.030)	(1.760)	(1.520)
Constant	**1.737** **	**1.454***	**-3.845**	**-2.817**	**-2.097**
	(1.990)	(1.800)	(-1.420)	(-0.830)	(-0.450)
Industry FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	No
N	277	301	277	301	99
Pseudo R^2	0.113	0.147	0.234	0.238	0.256

Panel B: EFA FVTOCI classification choice determinants in Financial firms					
DV=FVTOCI	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
	Pre	**Post**	**Pre**	**Post**	**Initial**
EFAAmt	**0.397**	**0.788**	**0.833**	**1.539**	**1.220**
	(0.450)	(1.030)	(0.640)	(0.890)	(0.610)
EFAeffect	**0.203**	**-0.145**	**0.094**	**-0.182**	**-0.214**
	(0.560)	(-0.480)	(0.220)	(-0.520)	(-0.440)
EFAmeas	**0.795**	**0.443**	**0.731**	**0.373**	**0.456**
	(1.260)	(0.750)	(1.100)	(0.580)	(0.580)
LEV			**-3.148****	**0.971**	**0.941**
			(-1.960)	(0.380)	(0.290)
CEOCOMP			**1.280**	**-1.139**	**-2.262**
			(1.240)	(-0.740)	(-0.970)
LnTA			**0.409**	**0.598****	**0.654***
			(1.530)	(2.120)	(1.830)
ROEadj			**-1.044**	**1.833**	**3.972**
			(-0.430)	(0.660)	(0.880)
ACIND			**0.005**	**-0.013**	**-0.015**
			(0.260)	(-0.920)	(-0.820)
BIG4			**0.408**	**0.399**	**1.320**
			(0.400)	(0.370)	(1.140)
ANALYST			**0.023**	**-0.157**	**-0.195**
			(0.250)	(-1.630)	(-1.350)
Constant	**-0.316**	**-0.413**	**-9.183***	**-12.343****	**-13.740****
	(-0.710)	(-0.840)	(-1.780)	(-2.410)	(-1.990)
Industry FE	No	No	No	No	No
Year FE	Yes	Yes	Yes	Yes	No
N	148	152	148	152	50
Pseudo R^2	0.031	0.017	0.129	0.177	0.216

This table presents the results of the determinants of EFA FVTOCI classification choice before and after IFRS 9. The dependent variable *FVTOCI* is a binary variable that equals one if the firm classifies any of its EFAs at FVTOCI, and zero otherwise. Panel A shows the results in non-financial firms and Panel B is the results in financial firms. Column (1)-(4) examine different determinants on samples of pre- and post-IFRS 9, respectively. Column (5) examines the determinants model on a subsample of the initial IFRS 9 adoption year. All z-score (in parentheses) are based on standard errors clustered by firm. All continuous variables are winsorised at the top and bottom one percentile. See Appendix 2 for detailed variable definitions. Two-tailed tests of significance: *** = <0.01, ** = <0.05 and * = <0.1.

Table 4:5 Value relevance of EFA amount and classification choice

Panel A: Value relevance test in full sample								
DV=Price	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
	Non- Fin				Fin			
BVS_S	**0.470*** **	**1.399*** **			**0.976*** **	**0.715*** **		
	(5.290)	(12.710)			(6.990)	(4.140)		
*BVS_S**			**0.665*** **	**1.608*** **			**1.026*** **	**0.969*** **
			(5.870)	(11.350)			(8.190)	(5.880)
AmtEFA_S			**-0.042**	**0.837**			**0.312*** **	**0.383** **
			(-0.040)	(1.470)			(2.610)	(2.300)
CI_S	**8.930*** **	**1.953*** **			**5.760*** **	**9.785*** **		
	(12.320)	(2.790)			(5.630)	(6.900)		
*CI_S** *			**8.835*** **	**2.261*** **			**7.856*** **	**9.330*** **
			(12.270)	(3.080)			(10.330)	(7.680)
PLEFA_S			**21.021**	**-11.275**			**5.839**	**4.509**
			(0.240)	(-0.660)			(0.690)	(0.390)
OCIEFA_S			**-10.407**	**2.848**			**11.393*** **	**4.089**
			(-0.910)	(0.310)			(3.310)	(0.570)
Constant	**3.359***	**2.542**	**3.089**	**2.061**	**0.757**	**-0.410**	**1.108**	**0.239**
	(1.760)	(1.570)	(1.640)	(1.230)	(0.770)	(-0.290)	(1.190)	(0.170)
Industry FE	Yes	Yes	Yes	Yes	No	No	No	No
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	289	304	289	304	148	152	148	152
Adj R^2	0.641	0.746	0.653	0.727	0.883	0.821	0.899	0.838

Panel B: Robustness value relevance test in subsamples								
DV=Price	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
	Large EFA amt	Large EFA amt	Large firm size	Large firm size	Large EFA amt	Large EFA amt	Large firm size	Large firm size
	Non- Fin				Fin			
*BVS_S**	**0.630*** **	**1.827*** **	**0.993*** **	**1.537*** **	**1.291*** **	**1.007*** **	**0.699*** **	**1.127*** **
	(3.710)	(8.660)	(16.830)	(9.190)	(6.080)	(5.600)	(3.510)	(4.100)
AmtEFA_S	**-0.365**	**1.722***	**0.794***	**1.043***	**0.252**	**0.364****	**0.296***	**0.587****
	(-0.230)	(1.890)	(1.700)	(1.770)	(1.450)	(2.100)	(1.870)	(2.360)
*CI_S***	**8.392*** **	**1.220**	**2.577*** **	**2.293*** **	**7.692*** **	**9.388*** **	**9.987*** **	**8.018*** **
	(8.070)	(1.180)	(6.580)	(2.900)	(6.780)	(7.440)	(8.900)	(4.170)
PLEFA_S	**41.621**	**-10.584**	**-45.634**	**-6.240**	**5.491**	**5.551**	**8.769**	**6.541**
	(0.320)	(-0.480)	(-0.860)	(-0.360)	(0.460)	(0.500)	(0.640)	(0.320)
OCIEFA_S	**-9.507**	**14.510**	**2.231**	**2.033**	**12.892*** **	**7.676**	**10.550****	**2.011**
	(-0.590)	(1.090)	(0.440)	(0.210)	(2.820)	(1.140)	(2.020)	(0.160)
Constant	**3.649**	**3.865**	**2.317****	**0.792**	**1.304**	**-0.755**	**-0.157**	**-1.164**
	(1.230)	(1.280)	(2.400)	(0.400)	(0.680)	(-0.400)	(-0.090)	(-0.470)
Industry FE	Yes	Yes	Yes	Yes	No	No	No	No
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	138	158	127	170	71	79	72	78
Adj R^2	0.666	0.727	0.879	0.760	0.885	0.892	0.926	0.842

This table presents the results of examining the value relevance of firms' EFA amounts and classification choice before and after IFRS 9. The dependent variable *Price* is the share price of firm *i* three months after its balance date in year *t*. Column (1)-(4) present the value relevance test results in non-financial firms and Column (5)-(8) are the results in financial firms. Panel A includes all sample size. Column (1)-(2) and (5)-(6) in Panel A are baseline models and show the value relevance of book value of equity (*BVE_S*) and total comprehensive income (*CI_S*) before and after IFRS 9, respectively. Column (3)-(4) and (7)-(8) in Panel A show the value relevance of EFAs amount (*AmtEFA*) and EFAs fair value gains or losses effect on profit or loss (*PLEFA_S*) or on OCI (*OCIEFA_S*) before and after IFRS 9, respectively. Panel B examines value relevance in subsamples of EFA amount is larger than the median (Column (1)-(2) and (5)-(6) for non-financial and financial firms before and after IFRS 9) and in subsamples of large firm size with total assets larger than the median (Column (3)-(4) and (7)-(8) for non-financial and financial firms before and after IFRS 9). All variables are defined in Appendix 2. Figures in parentheses are t-statistics. All continuous variables are winsorised at the top and bottom one percentile. Two-tailed tests of significance: *** = <0.01, ** = <0.05 and * = <0.1.

Chapter 5: Is There an Audit Cost for Equity Financial Instruments Accounting? Evidence after IFRS 9

Abstract

I investigate whether audit fees are associated with equity financial instruments (EFAs) and whether this relationship changes post IFRS 9. Firstly, I find that companies' EFA holdings are associated with higher audit fees, and this is driven by large companies. Secondly, the increased audit fee is driven by EFAs measured at level 3 fair value hierarchy, not the amount of EFA or the classification location. Thirdly, I find no evidence that the relationship between audit fees and EFA holding or EFA attributes changed after IFRS 9. Lastly, audit efficiency is not affected by EFA accounting regardless of IFRS 9 adoption. I provide early evidence on the audit cost of implementing EFA accounting under IFRS 9 and contribute to policymakers by shedding light on the cost of IFRS 9 implementation.

5.1 Introduction

Accounting for financial instruments has long been an area of contention for standard setters and has consistently been identified by auditors as one of the six key accounting policies that have the most influence on financial reporting and require incremental audit effort (De George et al., 2013; Ernst and Young, 2005; Gebhardt, 2012).[29] The International Accounting Standards Board (IASB) replaced International Accounting Standard (IAS) 39 *Financial Instruments: Recognition and Measurement* with International Financial Reporting Standard (IFRS) 9 *Financial Instruments*, effective on 1st January 2018 (Deloitte, 2021c). IFRS 9 was intended to reduce financial instruments accounting complexity and improve the relevance and understandability of financial instruments information (IASB, 2022a, para BCIN2). However, evidence shows an increase in audit fees after the implementation of IFRS 9 in China (Fang et al., 2022), although it is less clear whether this result would hold in other institutional settings. Thus, this study provides additional evidence regarding the audit cost of IFRS 9 for equity financial instruments (hereafter EFAs: equity financial assets) accounting standard changes, particularly.

IFRS 9 replaced IAS 39 in three phases: classification and measurement, impairment, and hedge accounting (IASB, 2024). The prohibition of recycling fair value gains or losses on EFAs from other comprehensive income (OCI) to profit or loss when derecognised and mandating all EFAs be measured at fair value without cost option allowed in IAS 39 are some of the major changes for classification and measurement in IFRS 9 (IASB, 2022a). However, there is a lack of evidence on both whether the

[29] The consistently identified six key IFRS accounting policies are Share-Based Payments (IFRS 2), Income Taxes (IAS 12), Employee Benefits (IAS 19), Impairment of Assets (IAS 36), Intangibles (IAS 38), and Financial Instruments (IAS 39) (De George et al., 2013; Ernst and Young., 2005).

complexity of EFA accounting is borne via higher audit costs and whether these changed after IFRS 9.

Using a sample of ASX 500 companies over 2011-2021 (three years before and after IFRS 9 adoption), I firstly find that companies' EFA holding is associated with higher audit fees, and this is driven by large companies. I apply a "difference-in-difference" design to help isolate the effect of IFRS 9 on audit fees for the impacted group (companies with EFAs) and separate other events. However, I find no evidence that the cost of auditing EFAs changed post IFRS 9. I find a consistent lack of an IFRS 9 impact on audit fees for EFAs across subsamples of early IFRS 9 adopters, one year before and after IFRS 9 adoption, excluding COVID-impacted years, among smaller and larger companies, and using both Propensity Score Matching (PSM) and entropy balancing.

Secondly, I investigate what drives the audit fee increase from holding an EFA by examining EFA amount, classification location, and level 3 fair value measurement hierarchy. I only find that a higher audit fee is associated with EFAs, which are measured at level 3 fair value hierarchy, not the amount of EFA or the classification location. Auditors need to make judgements in evaluating EFAs without a quoted price in an active market, which are measured at level 3 fair value hierarchy. Thus, the greater effort and risk of evaluating those EFAs is reflected in an increase in audit fees. Besides, I find some evidence that EFAs measured at level 1 fair value hierarchy are associated with lower audit fees. My results add to the fair value literature by showing an audit fee increase when assets are valued using level 3 inputs in EFAs held by non-financial companies (Ettredge et al., 2014; Miah, 2019). Again, I find no evidence that the relationship between audit fees and EFA attributes, including EFA amount, classification location, and level 3 fair value measurement, changed after IFRS 9, after examining the model with

PSM and entropy balancing. In addition, after examining audit lag as a proxy for audit efficiency, I do not find a significant relationship between EFA holding, EFA attributes and audit lag, regardless of IFRS 9 adoption, suggesting auditors consider EFAs when planning audit with the understanding that audit efficiency is unaffected.

I offer policy insights into the IASB and contribute to IFRS 9 literature from three perspectives. Firstly, I find that auditors charge additional fees for companies that have EFAs, and the audit fee increase is driven by EFAs measured at level 3 fair value hierarchy. This is consistent with the literature that audit fee increases in the complexity of the fair value estimation and recognition (Ettredge et al., 2014; Fang et al., 2023; Miah, 2019). Secondly, neither the audit fees nor audit efficiency of EFA holding or EFA attributes are affected by IFRS 9. Thirdly, though I find a significant negative relationship between IFRS 9 adoption and audit fees, I am cautious in interpreting the results as a decrease in audit fees after the adoption of IFRS 9, as other standards were implemented concurrently with IFRS 9. Instead, I focus my results on an impacted group of those who would be affected by IFRS 9 (companies with EFAs) and find no difference. However, I present contrary results regarding audit costs incurred by companies after IFRS 9 adoption, specifically Fang et al.'s (2022) findings in China that there is an audit fee increase one year after the Chinese equivalent of IFRS 9 adoption. With different effectiveness of IFRS adoption, audit and standards enforcement environments in Australia are among the highest, whereas China is rated in the middle (Brown et al., 2014; Preiato et al., 2015). The IFRS 9 adoption process varies between Australia, which has adopted IFRS 9 word for word since its issuance, and China, which had less than one year from the announcement of IFRS 9 to its implementation (Fang et al., 2022). Overall, I provide evidence that EFA accounting changes in IFRS 9 did not impose additional audit costs.

The remainder of this chapter is organised as follows. Section 5.2 introduces the standard-setting background and outlines relevant literature that leads to the hypotheses. Section 5.3 explains my sample section and audit fee models. I provide the descriptive statistics in Section 5.4. Section 5.5 provides my empirical findings, followed by Section 5.6 for audit efficiency analysis. Section 5.7 concludes.

5.2 Background and Related Literature

5.2.1 Equity financial instruments accounting from IAS 39 to IFRS 9

Accounting for financial instruments has a long developing history and has been extensively debated over the decades due to its complexity (Chatham et al., 2010). The first comprehensive accounting standard that specifically covers financial instruments recognition, measurement, and hedge accounting is the IAS 39, issued in 1999 and with a significant revision in 2005 (Deloitte, 2021a). Under IAS 39, the default EFA classification is available-for-sale assets, in which gains or losses from fair value movements are presented in other comprehensive income (OCI). An adjustment needs to be made to reclassify the cumulative gains or losses previously recognised in OCI from equity to profit or loss when the available-for-sale assets are derecognised (IAS 39, para 55). EFAs can be classified at fair value through profit or loss (FVTPL) when they are designated or held for trading where managers have the intention to sell it in the near term or evidence shows short-term profit-taking (IAS 39, para 9). IAS 39 allows EFAs that do not have a quoted market price in an active market and whose fair value cannot be reliably measured to be measured at cost (IAS 39, para 46). Widespread stakeholders view the requirements for EFA accounting in IAS 39 as too rule-based and complex (IASB, 2021b). Managers' intention to hold the EFA is crucial in their initial classification, which

creates space for earnings manipulation (Barth et al., 2017; Dong and Zhang, 2018).

The IASB has long acknowledged the need to improve the requirements and enhance the relevance and understandability of information about financial instruments (IASB, 2022a, para BCIN.2). That need became more urgent in the light of the global financial crisis, and the IASB expeditiously replaced IAS 39 in its entirety with IFRS 9 by dividing the project into several phases. A completed and integrated accounting standard for financial instruments — IFRS 9 — was issued in July 2014, with an effective date of on or after 1st January 2018.[30]

IFRS 9 combines the financial assets classification and measurement that the default EFA classification is FVTPL with fair value through OCI (FVTOCI) option. Sue Lloyd, the former IASB vice chair, said, "Reporting value changes in profit or loss gives better information about value creation over time" (Lloyd, 2018). The EFA fair value movements in profit or loss reflect the economic reality of an equity investment to a company's performance. However, companies may hold EFAs for strategic purposes rather than for increases in their value; therefore, changes in the value of such an investment do not indicate the performance of the company. Thus, the IASB allows an irrevocable election of FVTOCI option at initial recognition of EFAs (IFRS 9, para 4.1.4). Differently from the IAS 39, IFRS 9 does not allow changes in the value of EFA in OCI to be recycled to profit or loss when the EFA is derecognised once FVTOCI is chosen at initial classification (IFRS 9, para 5.7.5). Instead of allowing the cost measurement for EFAs, IFRS 9 mandates that all EFAs in the scope of the standard be measured at fair value, where level 3 fair value measurement hierarchy may be applied to those that are measured at cost under IAS 39. Therefore, with fair value measurement, all decreases in

[30] The IASB delays the implementation of IFRS 9 in insurance companies up to date of IFRS 17 *Insurance contracts* effective, which is on or after 1st January 2023.

EFA values are reflected in profit or loss or OCI, eliminating the need for an impairment test (Kvaal et al., 2023).

Along with the changes to the accounting requirements in IFRS 9, additional disclosure is required in IFRS 7 *Financial Instruments: Disclosures.* For example, when an EFA is classified as FVTOCI, the company shall disclose which equity instruments are invested, the reasons behind choosing this presentation alternative, the fair value of each such investment at the reporting date, and other relevant details (IFRS 7, para 11A and 11B). The IASB states, "These additional disclosures will provide a better balance of costs and benefits to users of financial statements and provide more transparent information about the performance of such investments" (IASB, 2022b, page 5).

5.2.2 Literature review and hypotheses development

Auditors play a crucial role in examining companies' financial statements and the implementation of new accounting standards (Cameran and Perotti, 2014). When auditing EFAs, auditors need to assess companies' compliance with the accounting standards, the value of the EFA where evaluation methods could be used, and whether sufficient and accurate information regarding companies' EFAs is disclosed. Therefore, audit workload may increase.

Some literature documents companies' earnings management behaviour of selling available-for-sale assets when recycling fair value gains or losses is allowed in the standard. Dong and Zhang (2018) provide evidence that United States (US) listed commercial banks manipulate earnings by selectively trading their available-for-sale assets. Barth et al. (2017) find similar results in non-listed US banks such that banks with

positive earnings realise fair value gains and losses for available-for-sale assets to smooth earnings, while banks with negative earnings take big baths through trading available-for-sale assets. Lu et al. (2023) document earnings smoothing in non-financial companies through realising fair value movement of available-for-sale assets in China. Guo et al. (2019) analyse one listed non-financial Chinese company and find that this company reclassified available-for-sale assets to long-term investments by increasing ownership to reduce income volatility caused by fair value movement in its equity investments. Therefore, I predict that there is a positive relationship between companies' EFA holdings and audit fees.

Given many changes from IAS 39 to IFRS 9, auditors may need to make additional efforts to assess whether the EFA accounting standard is implemented appropriately in companies. However, with subsequent amendments, a completed IFRS 9 was issued in 2014 and implemented almost four years after its issuance. The extended development process and the transitional period from IAS 39 to IFRS 9 have diminished the potential "learning effects" that could otherwise reduce the costs associated with the transition. Higher disclosure requirements and the intention to reduce financial instruments' accounting complexity in IFRS 9 could improve financial reporting quality to the point where less audit effort is required.

Fang et al. (2022) provide timely evidence that non-financial companies pay considerably higher audit fees one year after the Chinese equivalent IFRS 9 is implemented. They argue that the fair value approach without cost exception for unquoted investments and the new impairment model challenge auditors to make judgements in evaluating companies' valuation for financial instruments and increase audit effort, which results in an increase in audit fees. Guo et al. (2023) document the challenges of applying

IFRS 9 in China in that more than 60% of companies report EFAs reclassification inconsistency from IAS 39 to IFRS 9 in the first quarterly, semi-annual, and annual reports in the first year of Chinese equivalent IFRS 9 implementation. Moreover, companies have difficulty in applying the new expected credit loss impairment model in IFRS 9 such that nearly 70% of companies report no application date impact on the estimated impairment of financial assets using the new impairment model relative to using the old impairment model in IAS 39 (Guo et al., 2023). However, Big Four auditors' clients apply IFRS 9 more effectively by disclosing an application date impact using the new impairment model and improving value relevance, indicating Big Four auditors' capability in monitoring companies' compliance with the new accounting standard (Guo et al., 2023). Fang et al. (2023) discuss the role of audit firms in companies' implementation of IFRS 9 in China. They find that during the initial year of IFRS 9 implementation, Big Four audit firms primarily concentrate on the fair value measurement of unquoted equity investments and the application of the new impairment model, whereas local audit firms place greater emphasis on the reclassification of available-for-sale assets from IAS 39 to IFRS 9. Fang et al. (2023) reveal the problems local audit firms faced in auditing the implementation of the Chinese equivalent of IFRS 9 and indicate standardised audit procedures and professional auditing techniques in Big Four firms helping the implementation of IFRS 9.

The quality of financial reporting is not solely a function of accounting standards, and the different effectiveness of IFRS adoption is highlighted between countries (Brown, 2011; Hegarty et al., 2004). Brown et al. (2014) measure both the working environment of public company auditors and the level of accounting enforcement activities in 51 jurisdictions. Australia is among the countries with the highest audit and enforcement scores, while China is ranked in the middle (Brown et al., 2014). With different

accounting standards enforcement environments, it is uncertain if Australia will suffer the same challenges and difficulties in applying IFRS 9 that cause additional costs in China. Australia follows the IASB's development in issuing IFRS 9 in July 2014 and implementing mandatory in January 2018.[31] However, China announced its Chinese version of IFRS 9 in March 2017 and required mandatory implementation less than one year later in January 2018 (Fang et al., 2022). The costs incurred by companies may vary depending on different IFRS 9 adoption process among countries. Therefore, whether the relationship between EFA holding and audit fees changed after IFRS 9 remains an empirical issue that leads to my hypothesis:

H1: There is a positive relationship between audit fees and EFA holding, and IFRS 9 does not change the relationship.

Next, I further explore where the increased audit fees of holding EFA come from by examining EFA attributes. Firstly, for companies that have EFAs, the amount of EFA shows the significance of the assets in a company. On one hand, when a large amount of EFA is material to a company, the risk of misstatement becomes high. According to International Standards on Auditing (ISA) 315 *Identifying and Assessing the Risks of Material Misstatement* paragraph 28-29, auditors need to assess the risk of misstatement at the financial statement level and for the classes of transactions, account balances and disclosures. Therefore, additional audit effort is required when EFA amount is large and may lead to an increase in audit fees. On the other hand, when there is an active market price, the amount of EFA is reasonably easy to audit, and this may not necessarily result in a rise in the audit fee. Therefore, it is of interest to examine the relationship between

[31] Australia applies Australian Accounting Standards Board (AASB) 9 *Financial Instruments*, which incorporates IFRS 9 word for word (Zang et al., 2022).

EFA amount and audit fees.

Secondly, under IAS 39, the default EFA classification is available-for-sale assets, and the fair value gains or losses on EFAs will be recycled to profit or loss once derecognised, which has a direct impact on profit. Auditors may need to assess management's holding purpose of these assets and whether fair value gains or losses on EFAs are presented appropriately, which increases the audit workload. IFRS 9 changes the default EFA classification to FVTPL with FVTOCI option and prohibits the recycling of fair value gains or losses on EFAs. The purpose of the changes is to reduce management's subjective holding intention when classifying EFAs and improve the objective and consistency of accounting treatment (PwC, 2017). Following these changes, IFRS 7 requires more disclosure when FVTOCI is chosen for EFAs. Under IFRS 9, auditors need to understand the new accounting standard requirements and make assessments for companies' EFA classification location, which increases audit effort. However, given around four years of transition from IAS 39 to IFRS 9, auditors have a long learning period that may not lead to an increase in audit fees. Therefore, it is unclear whether the EFA classification location is related to audit fees, and whether it changed after IFRS 9.

Thirdly, the valuation of financial instruments is one of the specific items that entails audit complexity and requires audit expertise to ensure adequate compliance (De George et al., 2013). To increase consistency and comparability in fair value measurement, IFRS 13 *Fair Value Measurement* establishes a three-level hierarchy that divides the inputs into valuation methods used to measure fair value (IFRS 13, para 72). Level 1 inputs are quoted prices in active markets for identical assets. Level 2 inputs are either directly or indirectly observable inputs. Level 3 inputs are unobservable inputs that

use the best information available in the circumstances (IFRS 13, para 76-87; Mehnaz et al., 2022). Level 3 fair value measurement hierarchy has the highest valuation uncertainty that relies on management discretion and needs risk adjustment (Bratten et al., 2013). Research demonstrates that level 1 fair value measurement is not significantly associated with audit fees (Ettredge et al., 2014).

When the fair value of EFAs cannot be determined by using readily observable inputs or measures, such as market prices or models, a level 3 fair value measurement hierarchy needs to be applied. The fair value of EFAs is calculated using a combination of complex market prices, mathematical models, and subjective assumptions. Moreover, instruments measured using level 3 fair value hierarchy also trigger extensive additional disclosures as required in IFRS 13, which would need to be audited and increase the scope of audit procedures ((IFRS 13, para 93 (e)-(h)). The literature documents an audit fee increase when assets are valued using level 3 inputs, given the difficulty in verifying the fair value and increased uncertainty risk (Christensen et al., 2012; Ettredge et al., 2014; Miah, 2019). Therefore, I estimate an increase in audit fees when companies have a level 3 fair value measurement hierarchy for their EFA valuation.

IFRS 9 mandates all fair value measurement for EFAs without cost option, which is allowed under IAS 39. Fang et al. (2022) and Guo et al. (2023) document that the exclusion of the cost option for EFAs is one of the reasons for the additional costs incurred by companies in applying IFRS 9 in China. Therefore, it is of interest to know if it holds true in another jurisdiction.

After understanding the relationship between audit fees and EFA holding, I further examine whether the audit fee increase comes from EFA attributes, in terms of EFA amount, classification location, and level 3 fair value measurement, and whether it

changed after IFRS 9. Thus, I state my hypothesis in null format as follows.

H2: There is no association between audit fees and EFA attributes, and IFRS 9 does not change the relationship.

5.3 Research Design

5.3.1 Data and sample

I begin the sample construction of this study from Australian Securities Exchange (ASX) 500 companies. Australian publicly traded companies adopt IFRS word for word, and ASX 500 companies represent more than 90% of ASX market capitalisation. To ensure the variations in sample composition each year do not influence my time-series analysis (Charles et al., 2010), I require a company to be listed on ASX at least three years before IFRS 9 adoption and three years after adoption and have sufficient available data for my specifications. I remove 110 companies that do not have the full six years of my sample period, 20 managed funds and professional investment companies, nine companies that do not use IFRS, and ten banks and ten insurance companies due to different reporting formats. This leaves a sample of 341 unique companies (2,046 observations) from 2011 through 2021 for my primary analysis.[32] Panel A of Table 5.1 presents details of the sample selection.

[INSERT TABLE 5.1 HERE]

I hand collect IFRS 9 and EFA information from companies' annual reports.

[32] IFRS 9 was effective on or after 1st Jan 2018, with early adoption permitted (Deloitte., 2021c). Two companies adopted IFRS 9 as early as 2014. The majority of my sample companies have 2019 as the effective year, given that 30th June is the most common balance date for Australian companies (Zang et al., 2022).

Firstly, I collect when the first year for IFRS 9 adoption is in company *i* and denote it as year *t*. Year *t-1*, *t-2*, *t-3* represent years before IFRS 9 adoption and *t+1*, *t+2* are years after adoption. Secondly, I search for whether the company has an EFA or not.[33] If the company has an EFA, I then collect the balance amount of EFA, EFA classification location (either FVTPL or FVTOCI), and the measurement method of EFA (either fair value or cost and fair value hierarchy). For companies that have multiple EFAs and disclose them in separate lines, I collect the aforementioned information for each EFA item.[34] I collect other financial information relating to variables in my regression models from the Refinitiv database. Panel B of Table 5.1 displays the distribution of companies that have EFAs by IFRS 9 adoption year.

694 firm-years have EFAs, which is around 33.9% of my total sample. The percentage is slightly lower than the result of Zang et al. (2022), which shows around 43% of companies have EFAs. There are two reasons for the difference. Firstly, I do not include banks and insurance companies, and more than 80% of them have EFAs; secondly, I include a longer time period of samples where Zang et al. (2022) only have samples one year before and after IFRS 9 adoption. However, I observe a similar trend of a slight increase in companies that hold EFAs from the two years prior to IFRS 9 adoption to the years following, although no significant difference exists by the Chi-Square test.

[33] Before IFRS 9, companies use the term available-for-sale assets for their equity investments. For simplicity, I use the term EFA for both before and after IFRS 9.

[34] For example, the first year Telstra Corporation Limited adopted IFRS 9 is 2019, with 30th June as its balance date. Telstra's 2019 annual report disclosed EFA items in two lines. One is "Investment in listed securities", whose balance amount is AUD 9 mil and is presented at FVTOCI with level 1 fair value hierarchy. The other is "Investment in unlisted securities", whose balance amount is AUD 16 mil and is presented at FVTOCI with level 3 fair value hierarchy (Telstra annual report, 2019, page 142 and 155).

5.3.2 Empirical model

Firstly, I examine whether companies' holding an EFA or not is associated with audit fees. To test the first hypothesis, I include all firm-year observations (2,046 firm-years) in my audit fee model as specified in Equation (1). Secondly, if the company has an EFA, I then examine whether EFA attributes, including EFA amount, classification location, and level 3 fair value measurement hierarchy, are related to audit fees. I limit the inclusion of observations in my audit fee model to the observations that have EFAs (694 firm-years) to test the second hypothesis.

I specify the following regression model based on audit fee models from the literature (e.g. Hay et al., 2006).

$$LnAF_{i,t} = \beta_0 + \beta_1 EFAHolder_{i,t} + \beta_2 ADOPT_{i,t} + \beta_3 EFAHolder * ADOPT_{i,t} + \beta_4 LnTA_{i,t} + \beta_5 ARINV_{i,t} + \beta_6 CURRENT_{i,t} + \beta_7 LEV_{i,t} + \beta_8 ROE_{i,t} + \beta_9 LOSS_{i,t} + \beta_{10} MTB_{i,t} + \beta_{11} BIG4_{i,t} + \beta_{12} ACIND_{i,t} + \beta_{13} BSIZE_{i,t} + Fixed\ Effects + \varepsilon_{i,t} \quad (1)$$

where subscripts refer to company *i* in year *t*.

The dependent variable, audit fees, is measured by the natural logarithm of total audit fees disclosed in companies' annual reports (*LnAF*). *EFAHolder* is a dummy variable that equals one if company *i* has an EFA at the end of year *t*, and zero otherwise. I include *EFAHolder* as an independent variable to examine whether a company having an EFA or not is related to audit fees. *ADOPT* is an indicator variable that equals one if company *i* adopts IFRS 9 in year *t* and for all years post adoption, and zero otherwise. The interaction between *EFAHolder* and *ADOPT* indicates whether audit fees changed in

EFA holders after the adoption of IFRS 9. This model applies a difference-in-difference (DiD) approach that the treatment group is the companies that have EFAs (where *EFAHolder* is one), and the control group is the companies that do not have EFAs (where *EFAHolder* is zero). I adopt a DiD approach that can help me focus on the effect of IFRS 9 on audit fees for the most impacted group (companies with EFAs) and separate other events (the adoption of the new revenue standards), making the interaction variable *EFAHolder*ADOPT* as my variable of interest, which captures any audit fee changes for holding an EFA after IFRS 9.

I control for variables that have been examined in literature to be related to audit fees (Cameran and Perotti, 2014; Hay et al., 2006; Simunic, 1980). I expect a positive sign on company size (*LnTA*), which is the most important determinant of audit effort (Hay et al., 2006). Receivables and inventory together (*ARINV*) could be a better proxy for measuring companies' inherent risk than either of those accounts alone (Hay et al., 2006). I control for the risk of a client failing by including current ratio (*CURRENT*) and leverage (*LEV*). The risk for a client exposed to a loss is associated with audit fees that I control for the profitability (*ROE*) and a dummy variable *LOSS*. Market-to-book ratio (*MTB*) is a measurement of companies' growth and complexity (Charles et al., 2010). The Big Four audit firms (*BIG4*) are expected to provide higher audit quality, which results in a higher audit fee.[35] I also include audit committee independence (*ACIND*) and board size (*BSIZE*) to control the effect of corporate governance on audit fees (Griffin et al., 2008).

I include year- and industry-fixed effects to capture the systematic time period effects and the complexity of audit work from different industries (Simunic, 1980; Yao et

[35] I also examine audit opinions on audit fees. However, 99.2% of observations in my sample receive a clean audit opinion. Whether or not audit opinion is included in my model has no effect on the results. I exclude the audit opinion control variable in my model since it does not provide sufficient variance and increases model complexity.

al., 2015). All continuous variables in this study are winsorised at the top and bottom one per cent. I also cluster standard errors at firm-level. Detailed descriptions of variable definitions can be found in Appendix 2.

To test hypothesis 2, I change the variable *EFAHolder* to variables of EFA attributes in Equation (1). *EFAAmt* is the aggregated EFA total balance deflated by total assets in company *i* at end of year *t*. *FVTOCI* is an indicator variable that equals one if the company *i* uses FVTOCI classification for any of its EFAs at end of year *t*, and zero otherwise. *Level3EFA* is an indicator variable that equals one if the company *i* applies a level 3 fair value hierarchy to measure any of its EFAs at end of year *t*, and zero otherwise. I also include interaction variables of *EFAAmt*ADOPT, FVTOCI*ADOPT,* and *Level3EFA*ADOPT* to capture the relationship changes after IFRS 9 adoption.

5.4 Descriptive Statistics

Table 5.2 shows descriptive statistics for variables used in my models. Panel A displays the descriptive statistics of my full sample with 2,046 firm-years for hypothesis 1. The mean (median) audit fees in my full sample is AUD 1.26 million (AUD 0.52 million), with a log value of 13.14 (13.16) ranging from a minimum of AUD 0.02 million to a maximum of AUD 11.30 million. Figure 5.1 displays the mean and median audit fee changes in the three years before and after IFRS 9 adoption. The median audit fee increases from AUD 0.48 million one year before IFRS 9 adoption to AUD 0.52 million in the year of IFRS 9 adoption, while the change in average audit fees is relatively flat.[36]

[36] In untabulated t-test, the difference in mean audit fees between one year before IFRS 9 adoption and the IFRS 9 adoption year is not significant.

[INSERT TABLE 5.2 HERE]

[INSERT FIGURE 5.1 HERE]

My full sample covers some large multinational companies with maximum total assets of AUD 42.60 billion and some small companies with minimum total assets of AUD 1.64 million. The mean (median) total assets is 3.39 billion (689.00 million) with a log value of 20.23 (20.35). On average, companies' total receivables and inventories comprise 16% of total assets. Companies in the sample have current assets that are 3.64 times their current liabilities on average, with a median value of 1.74. The average leverage in these companies is 0.41, with a median value of 0.40. In terms of profitability, companies in my full sample make a slight loss on average, with an ROE of -0.02, but the market-to-book ratio is 5.29. 628 firm-years, which counts for 30.7% of the full sample, make a loss. The majority of the full sample (80.2%) have one of the Big Four as their auditor.

Panel B in Table 5.2 is the descriptive statistics for samples with EFAs (694 firm-years) that are used in testing hypothesis 2. The audit fee is comparable to the full sample. The average (median) aggregated EFA balance amount is 5% (1%) of total assets, ranging from a minimum of 0% to a maximum of 52.6% of total assets. Panel A in Figure 5.2 displays the changes in EFA amount to total assets around the six years of IFRS 9 adoption. There is no observable pattern of the mean value changes for EFA amount before and after IFRS 9 adoption, with a decrease of the median value from 0.011 to 0.005 from one year before IFRS 9 adoption to the IFRS 9 adoption year. Out of 694 firm-years that have EFAs, 413 (59.5%) firm-years classify any of their EFAs at FVTOCI, and 224 (32.3%) firm-years use level 3 fair value hierarchy to measure at least one of their EFA items.

[INSERT FIGURE 5.2 HERE]

Panel B of Figure 5.2 shows the changes in the number of firm-years that classify any of EFAs at FVTOCI and firm-years that apply level 3 fair value hierarchy in any of their EFAs measurement around the six years of IFRS 9 adoption. The number of firm-years classifying any of their EFAs at FVTOCI decreases from more than 70 before the adoption of IFRS 9 to around 65 after IFRS 9, and the decrease is at the significance level of 1% by Chi-Square test. The inference for this decrease would be the change in the default EFA classification from available-for-sale assets under IAS 39 to FVTPL under IFRS 9 and the inability to recycle FVGL on EFA once FVTOCI is chosen under IFRS 9. The number of firm-years that have level 3 fair value measurement for EFAs increases two consecutive years prior to IFRS 9 adoption, from 30 (28.0%) in the two years prior to adoption to 34 (30.1%) in the year prior to adoption and to 41 (35.0%) in the year of adoption.[37] After the adoption of IFRS 9, the number of firm-years that have level 3 fair value measurement for their EFAs remains relatively stable at around 42 (35.6%).

Panel A and Panel B in Table 5.3 provide both Pearson (below diagonal) and Spearman (upper diagonal) correlation matrix of variables used in testing hypotheses 1 and 2, respectively. In each cell, the number indicates the correlation coefficient, and p-value is given in parentheses. The Pearson and Spearman correlation coefficients of *LnAF* with the *EFAHolder* are positive and significant, with p-value less than 0.01. The correlation coefficients of *LnAF* with *FVTOCI* and *Level3EFA* are positive and significant in both Pearson and Spearman correlation, while the correlation coefficient for *EFAAmt* is only significant and negative in Spearman correlation. The significance of these variables in association with audit fee is tested in the multivariate models while

[37] The Chi-Square test indicates a 1% level of increased significance.

controlling for other relevant factors.

[INSERT TABLE 5.3 HERE]

5.5 Results

5.5.1 The association between audit fees and EFA holding

For hypothesis 1, I examine the relationship between audit fees and whether companies hold an EFA or not. Since I apply a DiD approach to examine the effect of IFRS 9 by comparing changes in audit fees between treatment group (companies have EFAs) and control group (companies do not have EFAs), the parallel trend assumption needs to be valid (Bertrand et al., 2004; Cahan et al., 2021; Cheng et al., 2024). I test the assumption that companies with EFAs and companies without EFAs follow parallel trends for audit fees in the pre-IFRS 9 period by replacing *ADOPT* in Model (1) with a set of time dummies: $Year_{t-3}$, $Year_{t-2}$, $Year_{t-1}$, $Year_t$, $Year_{t+1}$, and $Year_{t+2}$. Accordingly, the coefficients of the interaction terms — $EFAHolder * Year_{t-3}$, $EFAHolder * Year_{t-2}$ and $EFAHolder * Year_{t-1}$ — capture the pre-IFRS 9 differences in audit fees between the treatment and control groups, which I expect them to be statistically indifferent from zero to satisfy the parallel trend assumption. In comparison, the coefficients of the interaction terms, $EFAHolder * Year_t$, $EFAHolder * Year_{t+1}$, and $EFAHolder * Year_{t+2}$, estimate the differences in audit fees between the two groups during and after IFRS 9 adoption. Due to multicollinearity, $Year_{t+2}$ and $EFAHolder * Year_{t+2}$ are excluded from the test.

Figure 5.3 and Table 5.4 display the parallel trend analysis. The results show that the coefficients on the interaction terms between *EFAHolder* and the year-specific

indicators for the pre-IFRS 9 adoption periods (*EFAHolder * Year$_{t-3}$, EFAHolder * Year$_{t-2}$* and *EFAHolder * Year$_{t-1}$*) are statistically insignificant, thereby supporting the validity of the parallel trend assumption.

[INSERT FIGURE 5.3 HERE]

[INSERT TABLE 5.4 HERE]

Table 5.5 presents the results of the audit fee model with firm-clustered standard errors. The adjusted R-square is around 0.76, which is in the range of audit fee research achieves (Hay, 2013). In Column (1) Panel A of Table 5.5, I only include *EFAHolder* and other control variables in the full sample (N=2,046) and find that the coefficient of *EFAHolder* on audit fee is positive and statistically significant at 5%. I then add the interaction variable *EFAHolder*ADOPT* in Column (2) and both *EFAHolder*ADOPT* and *ADOPT* in Column (3). The results are consistent with my hypothesis that there is a significant positive relationship between audit fee and EFA holding. However, given the insignificant coefficient of the variable *EFAHolder*ADOPT*, I find that IFRS 9 does not change the relationship between audit fee and EFA holding. Notably, the variable *ADOPT* has a significant negative coefficient, I proceed with caution when interpreting the results as an audit fee decrease following the adoption of IFRS 9, since I am unable to isolate the IFRS 9 effect from other factors. Fang et al. (2022) find an audit fee increase after the adoption of IFRS 9 in China.[38] My results provide mixed evidence of audit costs on companies after the adoption of IFRS 9. My control variables are broadly consistent with prior literature. I find higher audit fees in companies with larger size, higher inherent and

[38] China has a cleaner setting in which the Chinese equivalent IFRS 9 is not implemented with other standards at the same time (Fang et al., 2022). However, the IASB implemented IFRS 9 and IFRS 15 *Revenue from Contracts with Customers* concurrently.

failing risk, higher complexity, audited by a Big Four, and larger board size.

[INSERT TABLE 5.5 HERE]

Robustness analysis

Firstly, to partially alleviate any potential bias from sample selection and enhance the covariate balance between the treatment and control groups, I use Propensity Score Matching (PSM) (Cahan et al., 2021; Cheng et al., 2024; Shipman et al., 2017). I use *EFAHolder* as treatment and match 694 firm-years that have EFAs to 694 firm-years that do not have an EFA with replacement based on industry and other same proxies (*ADOPT*, *LnTA, ARINV, CURRENT, LEV, ROE, LOSS, MTB, BIG4, ACIND*, and *BSIZE*), as shown in Column (4) Panel A of Table 5.5.[39] Panel A in Appendix 3 displays the effectiveness test of the PSM. Most matching variables have significant differences between treatment and control observations in mean value before PSM, but become insignificant after the matching, indicating the matching is effective in reducing differences between treatment and control companies in my variables of interest (Hong et al., 2014). Results with PSM provide consistent results that *EFAHolder* is positively associated with audit fees at the significance level of 5%, while *EFAHolder*ADOPT* remains insignifcant.

Secondly, I use a multivariate matching technique entropy balancing to ensure covariate balance between treated (companies with EFAs) and control (companies without EFAs) samples are equal for each matching dimension (Chahine et al., 2020; McMullin and Schonberger, 2022; McMullin and Schonberger, 2020). I present the matching result in Panel A of Appendix 4, which shows that the differences in means and

[39] I perform matching with replacement that each control observation can be matched more than once. Match with replacement reduces bias since each treatment matches with the most similar control observation and increases matching success (Hong et al., 2014). I consider weight to reflect the number of times matched (Shipman et al., 2017).

variances of covariates between treated and control samples are minimal, suggesting proper entropy balancing was achieved. Using the balanced sample, I test the hypothesis 1 and find similar results, that *EFAHolder* is significantly positively related to audit fees with no change post IFRS 9, as shown in Column (5) Panel A of Table 5.5. Entropy balancing regression is free of any major biases, since the biases affecting the distribution of treated and control samples are removed (Chahine et al., 2020; Chapman et al., 2019).

Lastly, I conduct a series of subsample analyses. Firstly, given a completed IFRS 9 was issued in 2014 with early adoption permitted, there are 35 unique companies with 210 firm-year observations that adopt IFRS 9 earlier than the effective date, and I define them as early adopters. As shown in Column (1) of Panel B in Table 5.5, I run the model in a subsample of early adopters to examine whether the results are driven by when companies adopt IFRS 9. Secondly, to rule out the possibility that the effect of IFRS 9 on the relationship between *EFAHolder* and audit fee only exists in the immediate period around IFRS 9 adoption, I rerun the model using a subsample of companies one year before and after IFRS 9 adoption, as shown in Column (2) of Panel B in Table 5.5. Thirdly, the global pandemic — COVID-19 — brings many uncertainties to entities. The inability to perform their service or failure to conduct audit procedures on-site brings many challenges to both companies and auditors, especially in Australia, which experienced several rounds of lockdowns (Barnoussi et al., 2020). To exclude the potential impact of COVID on audit fees, I examine the model on a subsample of firm-years that exclude the year 2020 and onwards, which are the years affected by COVID, as shown in Column (3) of Panel B (Hossain and Monroe, 2022, July 4-5). Fourthly, I divide my samples based on total assets into four quarters and rerun the model in subsamples of the largest quartile and smallest quartile to examine whether the results are driven by company size, as shown in Column (4) and (5) of Panel B, respectively.

Over subsamples of early adopters, one year before and after IFRS 9 adoption, firm-years before COVID, and companies that have total assets in the smallest quartile, neither *EFAHolder* nor the interaction has significance, indicating the audit fee implications of EFA holding do not result from those subsamples. However, the coefficient on the *EFAHolder* is significantly positive for the subsample of companies in the largest total assets quartile. The results suggest that a higher audit fee is driven by companies with large size that have EFAs. 246 (48.14%) companies in the largest quartile have EFAs compared to 122 (23.82%) companies in the smallest quartile. This is in line with the intuition that large companies have more surplus cash to be invested in equity securities than small companies. The implication is that EFAs could have a higher economic significance or be more material assets in large companies than in small companies. Therefore, auditors invest more effort in EFA audit procedures for large companies, which is reflected in an audit fee increase.

Taken together, I find that companies' EFA holding is positively associated with audit fees, which are driven by large companies and unrelated to whether or when IFRS 9 is adopted.[40] Given a significant negative coefficient for *ADOPT*, though I proceed cautiously when interpreting the results as a decrease in audit fee after IFRS 9 adoption, I provide a mixed review of the audit cost after IFRS 9 adoption, which contrasts with the findings in China (Fang et al., 2022).

[40]I adjust audit fees and total assets for inflation with the Consumer Price Index (CPI) based on June 2016 in order to remove the effects of inflation and concentrate on the real-term costs. The results remain the same.

5.5.2 The association between audit fees and EFA attributes

For hypothesis 2, I examine the relationship between audit fees and EFA attributes in terms of EFA amount, classification location, and level 3 fair value measurement in companies that have EFAs. I investigate which EFA attributes drive the audit fee increase in companies that have EFAs. Table 5.6 displays the results of OLS estimation for the audit fee model with firm-clustered standard errors. Panel A in Table 5.6 shows the results from regressing audit fees on *EFAAmt*, *FVTOCI*, and *Level3EFA* in firm-years that have EFAs (N=694). Control variable coefficients are generally similar to the results of hypothesis 1.

[INSERT TABLE 5.6 HERE]

I only add *EFAAmt* and other control variables in Column (1) of Panel A, and there is no significant relationship between *EFAAmt* and audit fees. I then add the interaction *EFAAmt*ADOPT* in Column (2) of Panel A and find that the no relationship does not change after IFRS 9. Column (7) of Panel A shows the full model and the results hold. I argue that EFA amount is relatively easy to audit compared to the other class of assets, especially when there is a quoted price for equity securities. Therefore, auditors do not charge extra fees based on the size of EFAs.

I then add *FVTOCI* and control variables in Column (3) of Panel A and do not find a significant relationship between *FVTOCI* and audit fees. The insignificance does not change post IFRS 9, as shown in Column (4) of Panel A. Although there are many changes from IAS 39 to IFRS 9 related to the EFA fair value gains or losses presentation location, they did not appear to result in additional audit costs to companies.

I include *Level3EFA* and other control variables in Column (5) of Panel A and find

that companies that have EFAs measured at level 3 fair value hierarchy are related to a higher audit fee, given the positive coefficient of *Level3EFA* with a p-value of 0.028. After adding the interaction *Level3EFA*ADOPT,* as shown in Column (6) of Panel A, IFRS 9 does not change the positive relationship between *Level3EFA* and audit fees. The results remain the same in the full model, as shown in Column (7), which is in line with my expectations. Companies need to estimate fair value for EFAs that do not have a market observable price by making assumptions with derived and extrapolated inputs. This increases audit risk, and auditors respond via increasing audit efforts to perform professional judgement for companies' estimation of EFAs that is measured at level 3 fair value, reflected in higher audit fee pricing (Ettredge et al., 2014). This result is consistent with findings in China that Big Four auditors focus on fair value measurement during the early stage of the Chinese equivalent IFRS 9 adoption (Fang et al., 2023). Again, I find a significant negative relationship between *ADOPT* and audit fees in companies with EFAs.

Robustness analysis

Firstly, I use both PSM and the entropy balancing method to match the treatment variable *FVTOCI* and *Level3EFA*, respectively.[41] As shown in Panel B in Table 5.6, I find consistent results that *Level3EFA* is significantly positively associated with audit fees with no change post IFRS 9. Overall, the PSM and entropy balancing analysis results are in line with the main findings by mitigating the functional form misspecification and endogeneity concerns.

[41] In the PSM method, to match companies that have level 3 fair value measurement EFA (N=222) to companies that have EFAs but do not use level 3 fair value measurement (N=222). I lost two treatment companies due to the lack of appropriate control companies to match based on the proxies.

Next, among 224 observations that apply level 3 fair value hierarchy to measure any of their EFAs, I find some observations have multiple EFA items that are measured at level 1 or level 2 fair value hierarchy.[42] To exclude the effect of EFAs that are measured at other levels of fair value, I then test the audit fee model by changing my variable of interest to *OnlyLevel1EFA*, which is a binary variable that equals one if the observation only uses level 1 fair value hierarchy to measure all its EFAs, as shown in Column (1) of Panel C. In line with my expectation, EFAs that are measured at level 1 fair value hierarchy are significantly negatively related to audit fees, regardless of IFRS 9 adoption. The majority of EFAs measured at level 1 fair value hierarchy are market-priced listed securities for which a limited amount of audit effort is required, resulting in a decrease in audit fees. *OnlyLevel2EFA* is not associated with audit fees, as shown in Column (2) of Panel C. When excluding the effect of EFAs that are measured in the other levels of fair value, *OnlyLevel3EFA* still shows a significant positive association with audit fees, suggesting my result remains consistent.[43] I then examine whether the audit fee increase is related to the amount of level 3 EFAs by testing the *Level3EFAAmt*, which is the total amount of EFAs that are measured at level 3 fair value hierarchy in company *i* at year *t* deflated by total assets, in observations that have EFAs measured at level 3 fair value hierarchy, as shown in Column (4) of Panel C. Given that the mean (median) *Level3EFAAmt* presents 1.74% (0.29%) of total assets, I interpret the none significance result between *Level3EFAAmt* and audit fees that, since the level 3 EFAs passes the threshold for separate disclosure, additional audit effort is required regardless of the amount.

[42] Among 224 firm-years that have level 3 fair value hierarchy to measure any of their EFAs, 73 have both level 1 and 3 fair value measurement EFAs, 14 have both level 2 and level 3 fair value measurement EFAs, 33 have all level 1, 2, and 3 fair value measurement EFAs.

[43] Due to multicollinearity among *OnlyLevel1EFA*, *OnlyLevel2EFA*, and *OnlyLevel3EFA*, I cannot examine all three variables in one model.

In combination, I conclude that audit fees are higher in large companies that have EFAs. The increased audit fee is driven by level 3 fair value measurement hierarchy for EFAs and is irrelevant to EFA amount or classification location, and IFRS 9 does not change these relationships.[44]

5.5.3 Audit efficiency analysis with audit lags

The literature documents that audit lag, which is the number of days between financial year-end and the date the audit report is signed, is an observable measurement of audit efficiency and effort (Knechel and Payne, 2001; Knechel et al., 2009). I examine Equation (1) and change the dependent variable from audit fees to audit lag (*AuditLag*) to further understand whether EFA holding is at the cost of longer audit lag.

I collect audit report sign-off dates on companies' annual reports by hand. The average (median) audit report is signed 58.89 (55.00) days after its balance date, ranging from a minimum of 34 days to a maximum of 92 days in the full sample (N=2,046). Table 5.7 presents the results of regressing audit lag on *EFAHolder*, *EFAAmt*, *FVTOCI*, and *Level3EFA*.

[INSERT TABLE 5.7 HERE]

Panel A in Table 5.7 displays the results of Equation (1) with the dependent variable changing from audit fees to audit lag. I do not find a significant relationship between audit lag and *EFAHolder* in the full sample (N=2,046), as shown in Column (1)

[44] I find consistent results when adjusting inflation for audit fees and total assets with CPI based on June 2016. I perform audit fee change models to examine hypotheses 1 and 2. However, due to the low explanation power in the nature of the changes model, I do not find any significant results (De George et al., 2013).

in Panel A. I then examine the model in different subsamples, including early adopters (Column(2)), companies one year before and after IFRS 9 adoption (Column (3)), firm-years before COVID (Column(4)), and large companies whose total assets are in the first quartile (Column (5)). I find consistent results that audit lag and whether companies hold an EFA or not are significantly related, regardless of IFRS 9 adoption.

Next, Panel B in Table 5.7 shows the results of regressing audit lag on EFA attributes. The model is examined in different subsamples in Column (2)-(5), the same as Panel A. I do not find any significant relationship between audit lag and *EFAAmt*, *FVTOCI*, or *Level3EFA,* no matter whether IFRS 9 is adopted or not, suggesting audit efficiency is not affected by EFAs.

Overall, whether to hold an EFA or not and EFA attributes have no influence on audit efficiency. The possible explanations could be auditors incorporating the accounting for EFAs into their audit planning processes or auditors' familiarity with IFRS 9 mitigating any potential delays in the financial reporting timeline.

5.6 Conclusion

Accounting standards for EFAs change from IAS 39 to IFRS 9, with an effective date of 1st January 2018. One of the major changes for the classification and measurement of EFAs is that IFRS 9 prohibits recycling of fair value gains or losses on EFAs from equity to profit or loss when derecognised and removes the cost option by embracing all fair value measurement for EFAs (IASB, 2021d).

I investigate whether audit fees are associated with EFA holding and EFA attributes and the impact of IFRS 9 adoption on the relationship. I find that (1) audit fees

are significantly positively associated with large companies' EFA holding and unrelated to whether or when IFRS 9 is adopted; (2) the audit fee increase is driven by EFAs that are measured at level 3 fair value hierarchy and is not related to EFA amount or classification location, regardless of IFRS 9 adoption; (3) after examining audit lag as a proxy for audit efficiency, I confirm that audit efficiency is not affected by EFAs, regardless of IFRS 9 adoption. My results are encouraging to standard setters in that there is no additional audit cost incurred by companies due to the changes for equity financial instruments accounting standards in IFRS 9.

I find a significant negative relationship between IFRS 9 adoption and audit fees, but caution should be noted in interpreting the results as a reduction in audit fees after the adoption of IFRS 9, as IFRS 9 implementation is accompanied by changes in other standards. However, I show mixed evidence of audit costs for companies after the adoption of IFRS 9, which contrasts with the finding that audit fees increased in China one year after the implementation of IFRS 9 (Fang et al., 2022). Therefore, I call for future research on the cost of IFRS 9 across jurisdictions.

Figure 5:1 Audit fees before and after IFRS 9 adoption (N=2,046)

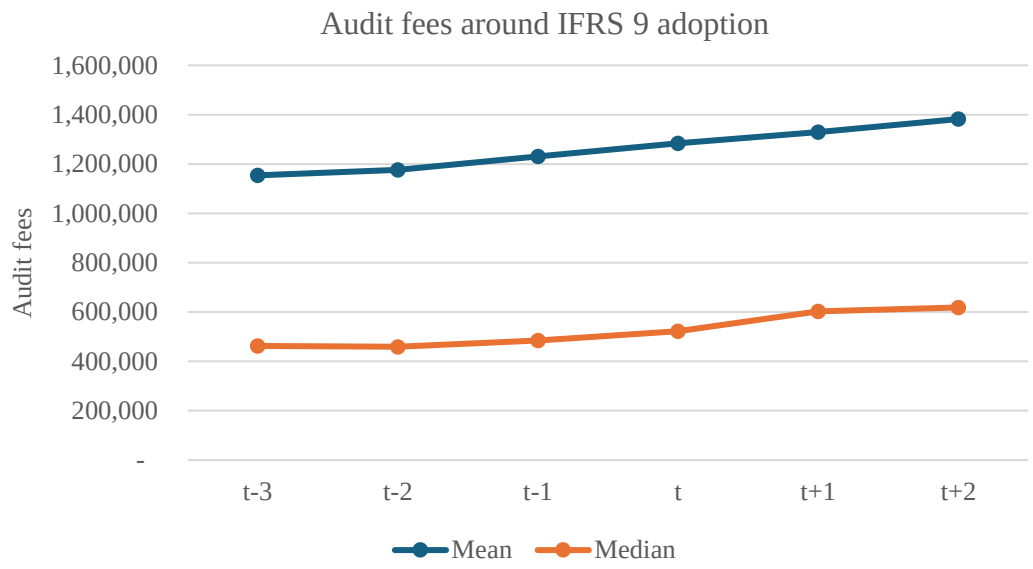
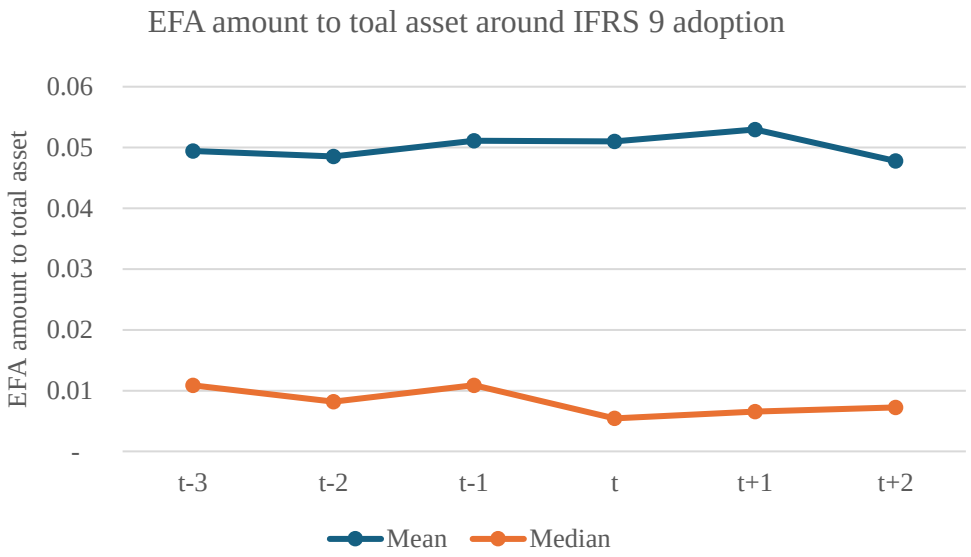


Figure 5:2 EFA amount, FVTOCI classification, and Level 3 fair value measurement and before and after IFRS 9 adoption (N=694)

Panel A: EFA amount to total asset before and after IFRS 9 adoption (N=694)



Panel B: Level 3 fair value measurement and FVTOCI presentation before and after IFRS 9 adoption (N=694)

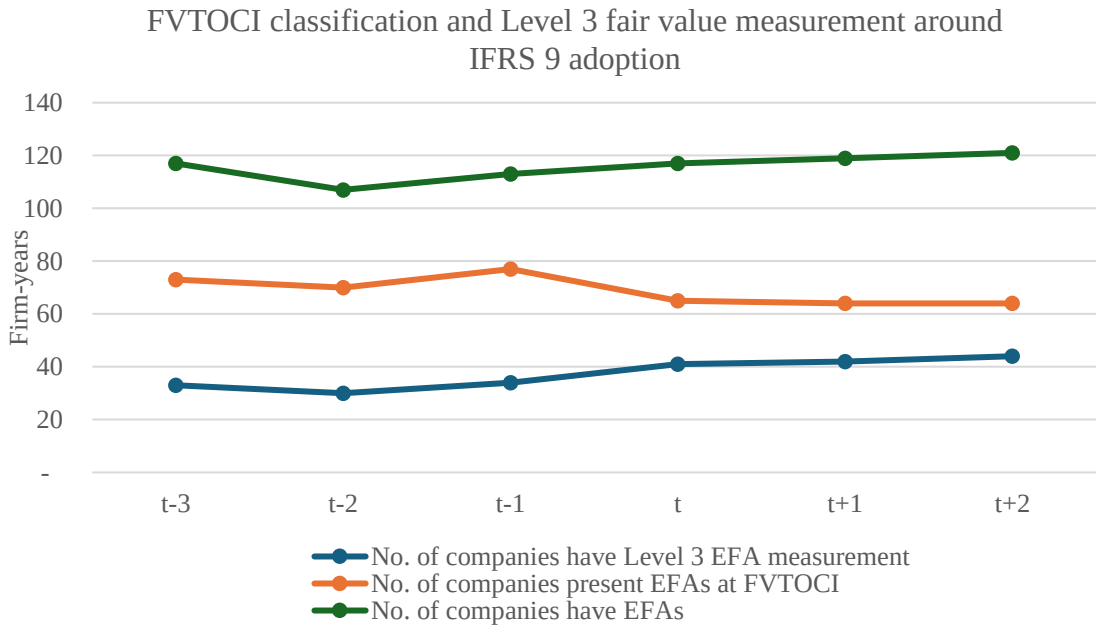
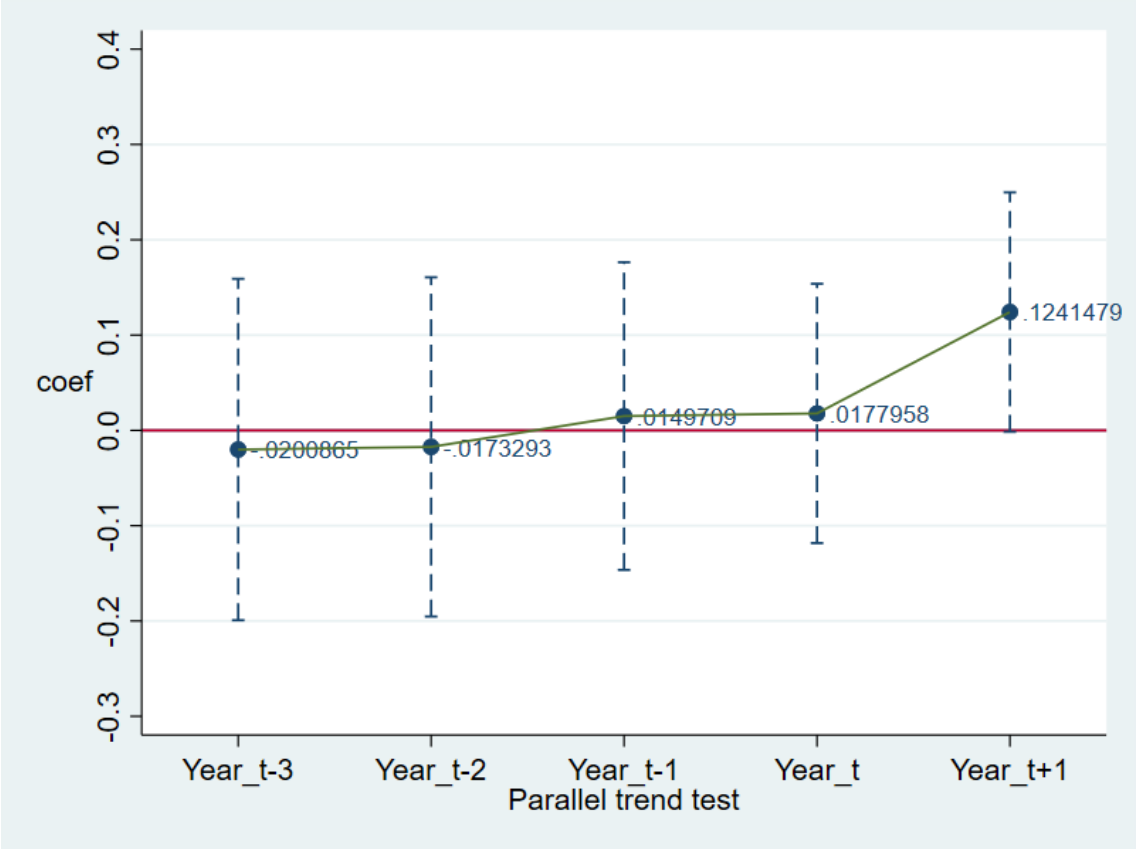


Figure 5:3 Parallel trend for DiD analysis



This figure shows the impact of transitioning from IAS 39 to IFRS 9 for companies that have EFAs on audit fees, focusing on the adoption of IFRS 9 in $Year_t$. The parallel trend analysis compares a treatment group (companies have EFAs) with a control group (companies do not have EFAs). Each dot on the figure shows a point estimate of the treatment effect on audit fees across different time periods: three years before the transition (t-3), two years before the transition (t-2), one year before the transition (t-1), the transition year (t), and one year after the transition (t+1). The vertical lines (whiskers) extending from each dot represent the 95% confidence intervals for these estimated effects, corresponding to the robust standard error clustered at the company level. A horizontal red line indicates the zero-coefficient threshold. Any effect whose confidence interval intersects with this line is deemed statistically insignificant at the 95% confidence level.

Table 5:1 Sample selection and companies that have EFAs distribution by IFRS 9 adoption year

Panel A: Sample selection

	Unique companies	Firm-Years
ASX 500 companies	500	3,000
Exclude: companies do not have full 6 years listing period (3 years pre-and post-IFRS 9 adoption)	-110	-660
Managed fund & Investment companies	-20	-120
Companies do not use IFRS	-9	-54
Banks	-10	-60
Insurance Companies	-10	-60
Total sample	**341**	**2,046**

Panel B: Companies that have EFAs distribution by IFRS 9 adoption year

Sample year	Firm-year have EFAs	Firm-year in sample	%
Post-adoption year t+2	121	341	35.5%
Post-adoption year t+1	119	341	34.9%
IFRS 9 adoption year t	117	341	34.3%
Pre-adoption year t-1	113	341	33.1%
Pre-adoption year t-2	107	341	31.4%
Pre-adoption year t-3	117	341	34.3%
Total	**694**	**2,046**	**33.9%**

Table 5:2 Summary statistics

Panel A: Full sample of ASX 500 firm-years (N=2,046)							
	Mean	Median	Std dev	Min	25th	75th	Max
LnAF	13.14	13.16	1.42	9.93	12.24	14.08	16.24
LnTA	20.23	20.35	2.16	14.31	18.93	21.72	24.47
ARINV	0.16	0.10	0.17	0.00	0.03	0.23	0.80
CURRENT	3.64	1.74	5.79	0.09	1.07	3.45	38.13
LEV	0.41	0.40	0.23	0.02	0.25	0.55	1.07
ROE	-0.02	0.09	0.49	-2.74	-0.04	0.16	1.11
MTB	5.29	2.19	10.23	-2.13	1.18	4.64	74.03
ACIND	77.61	100.00	30.94	0.00	66.67	100.00	100.00
BSIZE	6.38	6.00	1.84	3.00	5.00	8.00	11.00

Dichotomous variables:				
	Yes	%	No	%
ADOPT	1,023	50.0%	1,023	50.0%
EFAHolder	694	33.9%	1,352	66.1%
LOSS	628	30.7%	1,418	69.3%
BIG4	1,640	80.2%	406	19.8%

Panel B: Firm-years that have EFAs (N=694)							
	Mean	Median	Std dev	Min	25th	75th	Max
LnAF	13.48	13.58	1.57	9.92	12.51	14.65	17.04
EFAAmt	0.05	0.01	0.10	0.00	0.00	0.04	0.53
LnTA	20.79	20.84	2.19	14.31	19.52	22.20	25.70
ARINV	0.14	0.09	0.15	0.00	0.05	0.19	0.80
CURRENT	4.14	1.90	6.79	0.21	1.19	3.84	45.80
LEV	0.39	0.38	0.22	0.02	0.22	0.53	0.98
ROE	0.01	0.09	0.39	-2.38	-0.03	0.15	0.67
MTB	3.40	1.69	5.36	0.23	1.04	3.26	37.22
ACIND	81.22	100.00	27.67	0.00	75.00	100.00	100.00
BSIZE	6.66	7.00	1.93	3.00	5.00	8.00	11.00

Dichotomous variables:				
	Yes	%	No	%
FVTOCI	413	59.5%	281	40.5%
Level3EFA	224	32.3%	470	67.7%
ADOPT	357	51.4%	337	48.6%
LOSS	194	28.0%	500	72.0%
BIG4	580	83.6%	114	16.4%

Table 5:3 Pearson (Spearman) Correlation table

Panel A: Variables used in full sample of ASX 500 firm-years (N=2,046)

	LnAF	ADOPT	EFAHolder	LnTA	ARINV	CURRENT	LEV	ROE	LOSS	MTB	BIG4	ACIND	BSIZE
LnAF	1.00	0.07	0.17	0.80	0.27	-0.33	0.44	0.29	-0.39	-0.19	0.50	0.27	0.63
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
ADOPT	0.07	1.00	0.02	0.11	-0.03	0.01	0.03	-0.03	0.01	0.04	0.02	0.06	0.07
	(0.00)		(0.35)	(0.00)	(0.17)	(0.54)	(0.15)	(0.23)	(0.63)	(0.09)	(0.32)	(0.01)	(0.00)
EFAHolder	0.17	0.02	1.00	0.18	-0.02	0.08	-0.06	0.00	-0.04	-0.16	0.06	0.07	0.11
	(0.00)	(0.35)		(0.00)	(0.30)	(0.00)	(0.01)	(0.98)	(0.05)	(0.00)	(0.01)	(0.00)	(0.00)
LnTA	0.82	0.12	0.18	1.00	0.09	-0.41	0.42	0.26	-0.43	-0.38	0.47	0.31	0.68
	(0.00)	(0.00)	(0.00)		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
ARINV	0.16	-0.04	-0.06	0.05	1.00	0.02	0.35	0.29	-0.25	0.09	0.11	0.09	0.10
	(0.00)	(0.07)	(0.00)	(0.02)		(0.34)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
CURRENT	-0.34	-0.01	0.05	-0.31	-0.09	1.00	-0.55	-0.21	0.25	0.14	-0.25	-0.11	-0.26
	(0.00)	(0.71)	(0.02)	(0.00)	(0.00)		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
LEV	0.42	0.03	-0.06	0.39	0.32	-0.39	1.00	0.28	-0.21	0.02	0.26	0.15	0.28
	(0.00)	(0.24)	(0.00)	(0.00)	(0.00)	(0.00)		(0.00)	(0.00)	(0.37)	(0.00)	(0.00)	(0.00)
ROE	0.32	0.05	0.04	0.40	0.14	-0.12	0.14	1.00	-0.74	0.07	0.22	0.11	0.17
	(0.00)	(0.04)	(0.10)	(0.00)	(0.00)	(0.00)	(0.00)		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
LOSS	-0.42	0.01	-0.04	-0.48	-0.19	0.28	-0.18	-0.55	1.00	0.09	-0.30	-0.19	-0.27
	(0.00)	(0.63)	(0.05)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)		(0.00)	(0.00)	(0.00)	(0.00)
MTB	-0.25	0.00	-0.12	-0.38	-0.03	0.07	-0.05	-0.37	0.22	1.00	-0.13	-0.11	-0.18
	(0.00)	(0.92)	(0.00)	(0.00)	(0.20)	(0.00)	(0.02)	(0.00)	(0.00)		(0.00)	(0.00)	(0.00)
BIG4	0.53	0.02	0.06	0.50	0.03	-0.20	0.24	0.21	-0.30	-0.16	1.00	0.24	0.35
	(0.00)	(0.32)	(0.01)	(0.00)	(0.20)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)		(0.00)	(0.00)
ACIND	0.36	0.06	0.08	0.40	0.06	-0.16	0.19	0.16	-0.26	-0.15	0.30	1.00	0.22
	(0.00)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)		(0.00)
BSIZE	0.64	0.06	0.11	0.67	0.03	-0.21	0.26	0.22	-0.26	-0.17	0.34	0.23	1.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.25)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	

Panel B: Variables used in firm-years that have EFAs (N=694)

	LnAF	EFAAmt	FVTOCI	Level3EFA	ADOPT	LnTA	ARINV	CURRENT	LEV	ROE	LOSS	MTB	BIG4	ACIND	BSIZE
LnAF	1.00	-0.13	0.14	0.29	0.08	0.82	0.28	-0.37	0.48	0.26	-0.30	-0.22	0.48	0.31	0.65
		(0.00)	(0.00)	(0.00)	(0.04)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
EFAAmt	-0.06	1.00	0.03	0.12	-0.03	-0.25	-0.12	0.23	-0.26	0.06	-0.04	0.11	-0.15	-0.01	-0.16
	(0.13)		(0.49)	(0.00)	(0.38)	(0.00)	(0.00)	(0.00)	(0.00)	(0.13)	(0.27)	(0.00)	(0.00)	(0.79)	(0.00)
FVTOCI	0.16	0.00	1.00	0.06	-0.11	0.14	0.11	-0.03	0.04	-0.03	0.04	0.07	0.11	0.10	0.09
	(0.00)	(1.00)		(0.11)	(0.00)	(0.00)	(0.00)	(0.42)	(0.34)	(0.45)	(0.26)	(0.08)	(0.00)	(0.01)	(0.02)
Level3EFA	0.29	0.16	0.06	1.00	0.07	0.23	0.06	-0.12	0.09	0.13	-0.14	-0.04	0.06	0.11	0.18
	(0.00)	(0.00)	(0.11)		(0.06)	(0.00)	(0.11)	(0.00)	(0.02)	(0.00)	(0.00)	(0.26)	(0.14)	(0.00)	(0.00)
ADOPT	0.08	0.00	-0.11	0.07	1.00	0.12	-0.03	0.01	0.04	-0.02	0.01	0.02	0.08	0.07	0.07
	(0.03)	(0.91)	(0.00)	(0.06)		(0.00)	(0.37)	(0.88)	(0.25)	(0.63)	(0.84)	(0.56)	(0.05)	(0.08)	(0.09)
LnTA	0.84	-0.13	0.13	0.24	0.12	1.00	0.16	-0.43	0.51	0.24	-0.32	-0.37	0.43	0.29	0.70
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
ARINV	0.13	-0.11	0.09	0.04	-0.05	0.06	1.00	-0.14	0.34	0.26	-0.25	0.03	0.25	0.16	0.16
	(0.00)	(0.00)	(0.01)	(0.26)	(0.17)	(0.12)		(0.00)	(0.00)	(0.00)	(0.00)	(0.36)	(0.00)	(0.00)	(0.00)
CURRENT	-0.37	0.10	-0.04	-0.15	-0.01	-0.32	-0.11	1.00	-0.57	-0.12	0.13	0.06	-0.20	-0.09	-0.27
	(0.00)	(0.01)	(0.27)	(0.00)	(0.88)	(0.00)	(0.00)		(0.00)	(0.00)	(0.00)	(0.09)	(0.00)	(0.02)	(0.00)
LEV	0.47	-0.18	0.02	0.09	0.04	0.51	0.33	-0.35	1.00	0.13	-0.14	-0.02	0.27	0.19	0.33
	(0.00)	(0.00)	(0.54)	(0.02)	(0.30)	(0.00)	(0.00)	(0.00)		(0.00)	(0.00)	(0.61)	(0.00)	(0.00)	(0.00)
ROE	0.32	0.04	-0.03	0.15	0.06	0.36	0.11	-0.06	0.00	1.00	-0.77	0.15	0.31	0.17	0.20
	(0.00)	(0.32)	(0.43)	(0.00)	(0.11)	(0.00)	(0.00)	(0.09)	(0.91)		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
LOSS	-0.36	-0.04	0.04	-0.14	0.01	-0.37	-0.18	0.18	-0.14	-0.58	1.00	0.05	-0.32	-0.24	-0.26
	(0.00)	(0.32)	(0.26)	(0.00)	(0.84)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)		(0.19)	(0.00)	(0.00)	(0.00)
MTB	-0.29	0.06	0.02	-0.07	0.01	-0.40	-0.06	0.08	-0.03	-0.24	0.17	1.00	-0.18	-0.04	-0.19
	(0.00)	(0.12)	(0.59)	(0.07)	(0.77)	(0.00)	(0.09)	(0.05)	(0.50)	(0.00)	(0.00)		(0.00)	(0.35)	(0.00)
BIG4	0.54	-0.17	0.11	0.06	0.08	0.50	0.16	-0.19	0.27	0.27	-0.32	-0.26	1.00	0.28	0.33
	(0.00)	(0.00)	(0.00)	(0.14)	(0.05)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)		(0.00)	(0.00)
ACIND	0.42	-0.03	0.13	0.15	0.08	0.41	0.09	-0.13	0.23	0.18	-0.30	-0.24	0.34	1.00	0.24
	(0.00)	(0.41)	(0.00)	(0.00)	(0.04)	(0.00)	(0.02)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)		(0.00)
BSIZE	0.65	-0.04	0.09	0.18	0.07	0.69	0.05	-0.27	0.32	0.22	-0.25	-0.19	0.33	0.27	1.00
	(0.00)	(0.27)	(0.02)	(0.00)	(0.08)	(0.00)	(0.21)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	

Pearson (Spearman) correlation coefficients are below (above) the diagonal. Panel A includes variables used in examining the full sample firm-years (N=2,046), and Panel B is variables used in examining firm-years that have EFAs (N=694). In each sell, the number indicates the correlation coefficient, and p-value is given in parentheses. Variables are defined in Appendix 2.

Table 5:4 Parallel trend for DiD analysis

DV= LnAF	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
EFAHolder	0.141	0.089	1.58	0.115	-0.035	0.316	
*EFAHolder * Year$_{t-3}$*	-0.020	0.091	-0.22	0.826	-0.199	0.159	
*EFAHolder * Year$_{t-2}$*	-0.017	0.090	-0.19	0.848	-0.195	0.161	
*EFAHolder * Year$_{t-1}$*	0.015	0.082	0.18	0.855	-0.146	0.176	
*EFAHolder * Year$_{t}$*	0.018	0.069	0.26	0.797	-0.118	0.154	
*EFAHolder * Year$_{t+1}$*	0.124	0.064	1.94	0.053	-0.001	0.250	*
Year$_{t-3}$	0.120	0.052	2.31	0.022	0.018	0.223	**
Year$_{t-2}$	0.0849	0.047	1.79	0.074	-0.008	0.178	*
Year$_{t-1}$	0.040	0.044	0.90	0.369	-0.047	0.127	
Year$_{t}$	0.037	0.039	0.95	0.341	-0.040	0.115	
Year$_{t+1}$	-0.037	0.030	-1.22	0.222	-0.097	0.023	
LnTA	0.444	0.027	16.21	0.000	0.391	0.498	***
ARINV	0.480	0.231	2.08	0.039	0.025	0.935	**
CURRENT	-0.020	0.005	-4.34	0.000	-0.029	-0.011	***
LEV	0.082	0.199	0.41	0.679	-0.309	0.473	
ROE	-0.063	0.057	-1.10	0.273	-0.176	0.050	
LOSS	-0.007	0.068	-0.10	0.919	-0.142	0.128	
MTB	0.003	0.002	1.44	0.151	-0.001	0.008	
BIG4	0.486	0.108	4.50	0.000	0.274	0.699	***
ACIND	0.000	0.001	0.19	0.849	-0.002	0.002	
BSIZE	0.010	0.025	4.02	0.000	0.051	0.149	***
Constant	3.147	0.475	6.63	0.000	2.214	4.080	***
Industry FE				Yes			
Std. Error Adj.				Firm clustering			
N				2,046			
R-squared				0.760			

Table 5.4 shows the impact of transitioning from IAS 39 to IFRS 9 for companies that have EFAs on audit fees, focusing on the adoption of IFRS 9 in *Year$_t$*. The parallel trend analysis compares a treatment group (companies have EFAs) with a control group (companies do not have EFAs) in the DiD model. The treatment effect on audit fees is tested across different time periods: three years before the transition (t-3), two years before the transition (t-2), one year before the transition (t-1), the transition year (t), and one year after the transition (t+1). All standard errors are clustered at firm level. Significance at the 1%, 5%, and 10% level is denoted by ***, **, and *, respectively.

Table 5:5 Audit fees on EFA holding

Panel A: Results from regression of audit fees on EFAHolder					
	OLS	OLS	OLS	PSM	Entropy Balancing
DV= LnAF	(1)	(2)	(3)	(4)	(5)
ADOPT			**-0.133*****	**-0.168****	**-0.135****
			(-2.95)	(-2.00)	(-2.07)
EFAHolder	**0.161****	**0.133***	**0.133***	**0.180****	**0.123****
	(2.18)	(1.72)	(1.72)	(2.03)	(2.33)
*EFAHolder*ADOPT*		**0.055**	**0.055**	**0.056**	**0.048**
		(0.99)	(0.99)	(0.68)	(0.68)
LnTA	**0.445*****	**0.445*****	**0.445*****	**0.456*****	**0.469*****
	(16.24)	(16.25)	(16.25)	(13.51)	(29.28)
ARINV	**0.479****	**0.480****	**0.480****	**0.783**	**0.492*****
	(2.08)	(2.08)	(2.08)	(2.39)	(3.53)
CURRENT	**-0.020*****	**-0.020*****	**-0.020*****	**-0.020*****	**-0.021*****
	(-4.34)	(-4.34)	(-4.34)	(-3.54)	(-6.77)
LEV	**0.081**	**0.081**	**0.081**	**0.132**	**0.055**
	(0.41)	(0.41)	(0.41)	(0.52)	(0.46)
ROE	**-0.063**	**-0.063**	**-0.063**	**-0.004**	**-0.097***
	(-1.10)	(-1.10)	(-1.10)	(-0.05)	(-1.76)
LOSS	**-0.006**	**-0.006**	**-0.006**	**0.056**	**0.025**
	(-0.09)	(-0.09)	(-0.09)	(0.67)	(0.47)
MTB	**0.003**	**0.003**	**0.003**	**0.006**	**0.008*****
	(1.47)	(1.46)	(1.46)	(1.61)	(3.42)
BIG4	**0.488*****	**0.486*****	**0.486*****	**0.388*****	**0.506*****
	(4.52)	(4.50)	(4.50)	(3.21)	(7.56)
ACIND	**0.000**	**0.000**	**0.000**	**0.001**	**0.002****
	(0.20)	(0.19)	(0.19)	(0.81)	(2.45)
BSIZE	**0.100*****	**0.100*****	**0.100*****	**0.115*****	**0.086*****
	(4.02)	(4.02)	(4.02)	(4.24)	(5.87)
Constant	**3.250*****	**3.256*****	**3.256*****	**2.959*****	**2.841*****
	(7.08)	(7.10)	(7.10)	(5.06)	(10.50)
Industry FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Std. Error Adj.	Firm clustering	Firm clustering	Firm clustering	Firm clustering	Firm clustering
N	2,046	2,046	2,046	1,388	2,046
Adj. R-squared	0.760	0.760	0.760	0.761	0.770

Panel B: Subsample results from regression of audit fees on EFAHolder

DV= LnAF	Early adopter (1)	One year (2)	No Covid (3)	Largest (4)	Smallest (5)
ADOPT	**-0.087**	**-0.001**	**-0.200**	**-0.165****	**0.104**
	(-0.95)	(-0.03)	(-1.49)	(-2.03)	(0.98)
EFAHolder	**-0.079**	**0.134**	**0.125**	**0.230***	**-0.078**
	(-0.53)	(1.41)	(1.61)	(1.77)	(-0.70)
*EFAHolder*ADOPT*	**0.198**	**-0.002**	**0.098**	**0.039**	**0.103**
	(1.41)	(-0.04)	(1.52)	(0.42)	(0.81)
LnTA	**0.577*****	**0.455*****	**0.439*****	**0.581*****	**0.241*****
	(7.80)	(14.03)	(15.56)	(6.38)	(5.80)
ARINV	**1.433****	**0.366**	**0.429***	**1.168****	**-0.184**
	(2.55)	(1.33)	(1.81)	(2.18)	(-0.58)
CURRENT	**-0.039****	**-0.017*****	**-0.019*****	**-0.003**	**-0.016*****
	(-2.42)	(-2.68)	(-4.04)	(-0.16)	(-3.25)
LEV	**-0.979**	**0.074**	**0.097**	**0.314**	**0.261**
	(-1.31)	(0.31)	(0.47)	(0.56)	(1.27)
ROE	**-0.044**	**-0.106**	**-0.027**	**0.055**	**-0.098**
	(-0.20)	(-1.27)	(-0.42)	(0.32)	(-1.65)
LOSS	**0.155**	**-0.150**	**-0.032**	**0.106**	**-0.367*****
	(0.88)	(-1.44)	(-0.39)	(1.07)	(-3.04)
MTB	**0.046*****	**0.004**	**0.004**	**0.012**	**-0.003**
	(4.87)	(1.20)	(1.51)	(0.66)	(-1.15)
BIG4	**0.322**	**0.426*****	**0.508*****	**0.292**	**0.481*****
	(0.92)	(3.47)	(4.50)	(1.18)	(4.72)
ACIND	**0.001**	**-0.001**	**0.000**	**0.003**	**0.002**
	(0.24)	(-0.53)	(-0.29)	(0.79)	(1.48)
BSIZE	**-0.067**	**0.105*****	**0.103*****	**0.093****	**0.034**
	(-1.23)	(3.56)	(3.67)	(2.12)	(1.00)
Constant	**2.232****	**3.150*****	**3.367*****	**-0.215**	**7.662*****
	(2.06)	(5.56)	(7.14)	(-0.12)	(10.89)
Industry FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Std. Error Adj.	Firm clustering	Firm clustering	Firm clustering	Firm clustering	Firm clustering
N	210	682	1,458	511	512
Adj. R-squared	0.866	0.770	0.767	0.587	0.658

Column (1)-(3) in Panel A in Table 5.5 presents the results of regressing audit fees (*LnAF*) on whether the firm holds any EFAs or not (*EFAHolder*) with control variables in full sample (N=2,046). *EFAHolder* ADOPT* is the interaction variable to examine whether audit fees changed in EFA holders after the adoption of IFRS 9. Column (4) in Panel A presents the robustness analysis using the Propensity Score Matching (PSM) method with treatment *EFAHolder.* I match 694 firms that have EFAs with 694 firms that do not have EFAs based on *ADOPT*, industry, *LnTA, ARINV, CURRENT, LEV, ROE, LOSS, MTB, BIG4, ACIND,* and *BSIZE.* Details are explained in Appendix 3. Column (5) in Panel A presents results after entropy balancing. Details are explained in Appendix 4. Panel B displays the results in different subsamples. To examine whether firms adopting IFRS 9 earlier than the effective date have different effect on audit fee, I include subsample of early IFRS 9 adopters and show the results in Column (1). Column (2) only includes firm-years one year before and after IFRS 9 adoption. I examine the model on subsample of firm-years without year 2020 and onwards to eliminate COVID effect on audit fees, as shown in Column (3). Column (4) is the results in largest firms whose total assets are in the first quartile, and Column (5) is the results in smallest firms with total assets in the last quartile. All t statistics (in parentheses) are based on standard errors clustered by firm. All continuous variables are winsorised at the top and bottom one percentile. All variables are defined in Appendix 2. ***, ** and * denote significance at the 1%, 5% and 10% levels, respectively.

Table 5:6 Audit fees on EFA attributes

Panel A: Results from regression of audit fees on EFA attributes							
DV= LnAF	(1)	(2)	(3)	(4)	(5)	(6)	(7)
EFAAmt	**0.282**	**-0.067**					**-0.275**
	(0.56)	(-0.13)					(-0.49)
FVTOCI			**0.005**	**-0.044**			**-0.056**
			(0.04)	(-0.32)			(-0.41)
Level3EFA					**0.248****	**0.238****	**0.257****
					(2.22)	(1.98)	(2.10)
ADOPT		**-0.224*****		**-0.243****		**-0.202****	**-0.281****
		(-2.93)		(-2.07)		(-2.36)	(-2.34)
*EFAAmt*ADOPT*		**0.674**					**0.767**
		(1.20)					(1.32)
*FVTOCI*ADOPT*				**0.089**			**0.088**
				(0.73)			(0.73)
*Level3EFA*ADOPT*						**0.018**	**-0.015**
						(0.18)	(-0.14)
LnTA	**0.523*****	**0.524*****	**0.523*****	**0.523*****	**0.509*****	**0.509*****	**0.510*****
	(13.14)	(13.18)	(12.78)	(12.75)	(12.79)	(12.78)	(12.41)
ARINV	**0.453**	**0.447**	**0.439**	**0.437**	**0.398**	**0.396**	**0.398**
	(1.10)	(1.09)	(1.07)	(1.06)	(1.02)	(1.02)	(0.99)
CURRENT	**-0.024*****	**-0.023*****	**-0.024*****	**-0.024*****	**-0.022*****	**-0.022*****	**-0.022*****
	(-4.49)	(-4.42)	(-4.48)	(-4.49)	(-4.23)	(-4.24)	(-4.16)
LEV	**-0.346**	**-0.338**	**-0.370**	**-0.381**	**-0.299**	**-0.301**	**-0.291**
	(-1.07)	(-1.04)	(-1.10)	(-1.12)	(-0.90)	(-0.90)	(-0.89)
ROE	**-0.120**	**-0.119**	**-0.121**	**-0.121**	**-0.127**	**-0.126**	**-0.127**
	(-1.24)	(-1.23)	(-1.26)	(-1.25)	(-1.29)	(-1.28)	(-1.28)
LOSS	**0.025**	**0.019**	**0.024**	**0.026**	**0.021**	**0.021**	**0.017**
	(0.25)	(0.20)	(0.25)	(0.26)	(0.22)	(0.22)	(0.18)
MTB	**0.019*****	**0.019*****	**0.019*****	**0.018*****	**0.018*****	**0.018*****	**0.018****
	(2.71)	(2.72)	(2.69)	(2.67)	(2.63)	(2.62)	(2.59)
BIG4	**0.518*****	**0.515*****	**0.503*****	**0.506*****	**0.556*****	**0.556*****	**0.563*****
	(2.73)	(2.71)	(2.74)	(2.74)	(3.03)	(3.03)	(2.99)
ACIND	**0.004****	**0.004****	**0.004****	**0.004*****	**0.004****	**0.004****	**0.004****
	(2.55)	(2.54)	(2.59)	(2.62)	(2.38)	(2.38)	(2.34)
BSIZE	**0.073****	**0.073****	**0.074****	**0.073***	**0.072***	**0.072***	**0.071***
	(1.98)	(1.99)	(1.99)	(1.95)	(1.97)	(1.97)	(1.92)
Constant	**2.089*****	**2.099*****	**2.120*****	**2.167*****	**2.277*****	**2.278*****	**2.289*****
	(2.92)	(2.95)	(2.97)	(2.96)	(3.23)	(3.23)	(3.25)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Std. Error Adj.	Firm clustering	Firm clustering	Firm clustering	Firm clustering	Firm clustering	Firm clustering	Firm clustering
N	694	694	694	694	694	694	694
Adj. R-squared	0.796	0.796	0.795	0.795	0.800	0.800	0.801

Panel B: Results from regression of audit fees on EFA attributes with PSM models and Entropy Balancing models

	PSM treatment FVTOCI	*Entropy Balancing treatment FVTOCI*	*PSM treatment Level3EFA*	*Entropy Balancing treatment Level3EFA*
DV= LnAF	(1)	(2)	(3)	(4)
EFAAmt	**-0.475**	**-1.438***	**-0.399**	**0.115**
	(-0.72)	(-1.67)	(-0.55)	(0.17)
FVTOCI	**0.061**	**-0.117**	**0.136**	**0.022**
	(0.44)	(-0.69)	(0.80)	(0.15)
Level3EFA	**0.242****	**0.286****	**0.287****	**0.277*****
	(1.99)	(2.12)	(2.02)	(2.29)
ADOPT	**-0.130**	**0.075**	**-0.022**	**-0.078**
	(-0.67)	(0.34)	(-0.10)	(-0.54)
EFAAmt ADOPT*	**0.818**	**2.145****	**0.813**	**0.630**
	(1.28)	(2.28)	(1.37)	(1.31)
*FVTOCI*ADOPT*	**-0.081**	**-0.254**	**-0.128**	**-0.049**
	(-0.51)	(-1.47)	(-0.76)	(-0.37)
Level3EFA ADOPT*	**0.138**	**-0.067**	**-0.019**	**0.001**
	(1.17)	(-0.54)	(-0.12)	(0.01)
LnTA	**0.572*****	**0.601*****	**0.516*****	**0.548*****
	(12.18)	(12.56)	(11.07)	(12.33)
ARINV	**0.483**	**0.179**	**-0.026**	**0.360**
	(1.15)	(0.35)	(-0.05)	(0.89)
CURRENT	**-0.017*****	**-0.022*****	**-0.020**	**-0.018****
	(-3.32)	(-4.11)	(-1.63)	(-2.39)
LEV	**-0.600**	**-0.467**	**-0.436**	**-0.507***
	(-1.50)	(-1.14)	(-1.15)	(-1.72)
ROE	**-0.217***	**-0.090**	**0.134**	**0.225**
	(-1.83)	(-0.68)	(0.42)	(0.90)
LOSS	**0.118**	**-0.190**	**0.130**	**0.090**
	(1.10)	(-1.48)	(0.93)	(0.89)
MTB	**0.017****	**0.010**	**0.029****	**-0.005**
	(2.10)	(1.31)	(2.48)	(-0.39)
BIG4	**0.480****	**0.128**	**0.602*****	**0.393****
	(2.39)	(0.87)	(3.18)	(2.07)
ACIND	**0.001**	**0.001**	**0.004**	**0.004**
	(0.56)	(0.30)	(1.43)	(1.47)
BSIZE	**0.080***	**0.005**	**0.087****	**0.087****
	(1.96)	(0.11)	(2.23)	(2.35)
Constant	**1.389***	**1.726****	**1.723****	**1.515****
	(1.78)	(2.34)	(2.06)	(1.98)
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Std. Error Adj.	Firm clustering	Firm clustering	Firm clustering	Firm clustering
N	826	694	444	694
Adj. R-squared	0.806	0.844	0.771	0.806

Panel C: Robustness analysis for audit fees on EFA attributes

	Only Level1EFA	*Only Level2EFA*	*Only Level3EFA*	*Level3EFA amount*
DV= LnAF	(1)	(2)	(3)	(4)
OnlyLevel1EFA	**-0.331*** **			
	(-2.84)			
*OnlyLevel1EFA*ADOPT*	**-0.021**			
	(-0.19)			
OnlyLevel2EFA		**0.319**		
		(1.12)		
*OnlyLevel2EFA*ADOPT*		**-0.289**		
		(-0.99)		
OnlyLevel3EFA			**0.320***	
			(1.92)	
*OnlyLevel3EFA*ADOPT*			**-0.033**	
			(-0.19)	
Level3EFAAmt				**1.870**
				(0.50)
*Level3EFAAmt*ADOPT*				**1.428**
				(0.23)
ADOPT	**-0.190***	**-0.185****	**-0.203****	**-0.030**
	(-1.96)	(-2.38)	(-2.42)	(-0.23)
LnTA	**0.505*****	**0.525*****	**0.524*****	**0.639*****
	(13.30)	(13.05)	(13.12)	(9.77)
ARINV	**0.428**	**0.445**	**0.451**	**0.469**
	(1.14)	(1.09)	(1.16)	(0.82)
CURRENT	**-0.022*****	**-0.024*****	**-0.022*****	**-0.017**
	(-4.40)	(-4.54)	(-4.23)	(-1.16)
LEV	**-0.265**	**-0.383**	**-0.343**	**-1.129****
	(-0.82)	(-1.13)	(-1.00)	(-2.09)
ROE	**-0.122**	**-0.121**	**-0.132**	**-0.064**
	(-1.23)	(-1.24)	(-1.34)	(-0.18)
LOSS	**0.028**	**0.028**	**0.005**	**0.196**
	(0.29)	(0.29)	(0.05)	(1.35)
MTB	**0.016****	**0.019*****	**0.018*****	**0.013**
	(2.55)	(2.73)	(2.70)	(0.85)
BIG4	**0.553*****	**0.497*****	**0.513*****	**0.288**
	(3.04)	(2.67)	(2.73)	(1.14)
ACIND	**0.004****	**0.004*****	**0.004****	**0.001**
	(2.26)	(2.61)	(2.38)	(0.29)
BSIZE	**0.073****	**0.074****	**0.067***	**0.013**
	(1.98)	(1.99)	(1.86)	(0.25)
Constant	**2.642*****	**2.095*****	**2.113*****	**0.906**
	(3.84)	(2.92)	(2.98)	(0.85)
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Std. Error Adj.	Firm clustering	Firm clustering	Firm clustering	Firm clustering
N	694	694	694	224
Adj. R-squared	0.804	0.796	0.799	0.832

Panel A in Table 5.6 displays the results of examining whether audit fees (*LnAF*) are related to EFAs' amount (*EFAAmt*), classification location *(FVTOCI),* and Level 3 fair value measurement (*Level3EFA*) in firm-years that have EFAs (N=694). *EFAAmt* ADOPT*, *FVTOCI*ADOPT,* and *Level3EFA* ADOPT* are interaction variables to examine the effect of EFA attributes on audit fees after IFRS 9 adoption. Panel B in Table 5.6 presents the robustness analysis using the PSM method and entropy balancing to examine the models. The treatment variable in Column (1) and (2) is *FVTOCI*. I match firms that have any EFAs presented at FVTOCI with firms that have EFAs but do not use FVTOCI presentation based on *ADOPT*, industry, *LnTA, ARINV, CURRENT, LEV, ROE, LOSS, MTB, BIG4, ACIND,* and *BSIZE.* The treatment variable in Column (3) and (4) is *Level3EFA*. I match firms that have level 3 fair value measurement for EFAs with firms that have EFAs but do not use level 3 fair value measurement. PSM and entropy balancing matching details are explained in Appendix 3 and 4, respectively. Panel C in Table 5.6 displays robustness analysis of the audit fee model by changing my variable of interest to *OnlyLevel1EFA* (Column (1)), *OnlyLevel2EFA* (Column (2)), *OnlyLevel3EFA* (Column (3)), *Level1EFAAmt* (Column (4)), respectively. All t statistics (in parentheses) are based on standard errors clustered by firm. All continuous variables are winsorised at the top and bottom one percentile. All variables are defined in Appendix 2. ***, ** and * denote significance at the 1%, 5% and 10% levels, respectively.

Table 5:7 Additional analysis: Audit Lags

Panel A: Results from regression of audit lags on EFAHolder					
	Full-sample	Early adopter	One year	No Covid	Largest
DV= AuditLag	(1)	(2)	(3)	(4)	(5)
ADOPT	**-0.393**	**-1.101**	**-0.768**	**-5.662****	**-1.975**
	(-0.44)	(-0.42)	(-1.24)	(-2.45)	(-1.24)
EFAHolder	**0.188**	**-1.219**	**-1.370**	**0.277**	**2.394**
	(0.15)	(-0.42)	(-0.94)	(0.22)	(1.04)
*EFAHolder*ADOPT*	**0.246**	**3.324**	**0.119**	**-0.689**	**-1.229**
	(0.25)	(1.18)	(0.11)	(-0.64)	(-0.74)
LnTA	**-1.661*****	**-4.348*****	**-1.086***	**-1.758*****	**0.236*****
	(-3.56)	(-3.77)	(-1.93)	(-3.50)	(0.14)
ARINV	**-2.338**	**16.169**	**-3.915**	**-3.367**	**3.162**
	(-0.67)	(1.68)	(-1.00)	(-1.03)	(0.35)
CURRENT	**0.314*****	**-0.158**	**0.418*****	**0.338*****	**0.747*****
	(3.14)	(-0.80)	(3.94)	(2.97)	(4.65)
LEV	**3.025**	**-5.844**	**0.008**	**2.516**	**-7.231**
	(1.11)	(-0.81)	(0.00)	(0.87)	(-0.76)
ROE	**-1.020**	**-2.990**	**-1.374**	**-0.385**	**-7.817****
	(-1.24)	(-1.36)	(-0.85)	(-0.40)	(-2.11)
LOSS	**4.537*****	**0.820**	**4.078****	**4.436*****	**-0.739**
	(4.07)	(0.32)	(2.13)	(3.32)	(-0.34)
MTB	**-0.014**	**-0.086**	**0.012**	**-0.006**	**-0.033**
	(-0.34)	(-0.71)	(0.19)	(-0.11)	(-0.06)
BIG4	**-5.051*****	**-2.592**	**-4.522****	**-4.535*****	**-11.940***
	(-3.21)	(-0.69)	(-2.56)	(-2.71)	(-1.93)
ACIND	**-0.046****	**-0.055****	**-0.053**	**-0.050****	**0.038**
	(-2.30)	(-0.86)	(-2.03)	(-2.31)	(0.83)
BSIZE	**0.799****	**1.253***	**0.791***	**0.885****	**0.648**
	(2.04)	(1.69)	(1.77)	(2.01)	(0.77)
Constant	**91.096*****	**154.564*****	**81.796*****	**93.297*****	**60.121***
	(11.45)	(7.92)	(8.64)	(11.19)	(1.98)
Industry FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Std. Error Adj.	Firm clustering	Firm clustering	Firm clustering	Firm clustering	Firm clustering
N	2,046	210	682	1,458	511
Adj. R-squared	0.392	0.553	0.386	0.387	0.256

Panel B: Results from regression of audit lags on EFA attributes

DV= AuditLag	(1) Firms with EFAs	(2) Early adopter	(3) One year	(4) No Covid	(5) Largest
ADOPT	**-0.952**	**-2.136**	**0.690**	**-7.133****	**-1.032**
	(-0.50)	(-0.65)	(0.37)	(-2.54)	(-0.33)
EFAAmt	**-6.072**	**-12.080**	**-0.140**	**-8.142**	**4.479**
	(-0.86)	(-0.37)	(-0.01)	(-1.14)	(0.42)
EFAAmt ADOPT*	**7.403**	**31.154**	**-12.301**	**-4.611**	**24.956**
	(0.79)	(1.35)	(-1.06)	(-0.49)	(1.12)
FVTOCI	**-0.952**	**-7.554**	**0.061**	**-1.331**	**1.891**
	(-0.50)	(-2.60)	(0.03)	(-0.70)	(0.49)
*FVTOCI*ADOPT*	**0.072**	**1.163**	**-1.574**	**-0.369**	**-1.130**
	(0.03)	(0.35)	(-0.66)	(-0.16)	(-0.36)
Level3EFA	**-0.898**	**0.942**	**-1.538**	**-1.243**	**2.538**
	(-0.45)	(0.30)	(-0.62)	(-0.62)	(0.70)
Level3EFA ADOPT*	**0.016**	**-6.893**	**1.133**	**0.936**	**-3.698**
	(0.01)	(-1.43)	(0.42)	(0.42)	(-1.53)
LnTA	**-1.316***	**-3.970*****	**-1.167**	**-1.380***	**-3.106**
	(-1.81)	(-3.58)	(-1.26)	(-1.71)	(-0.98)
ARINV	**-0.458**	**2.796**	**-8.190**	**-1.395**	**12.928**
	(-0.10)	(0.11)	(-1.38)	(-0.34)	(0.78)
CURRENT	**0.403*****	**-0.115**	**0.317*****	**0.391*****	**0.686****
	(3.71)	(-0.27)	(2.75)	(3.66)	(2.50)
LEV	**4.971**	**-5.653**	**5.803**	**5.404**	**-5.164**
	(1.19)	(-0.67)	(0.88)	(1.12)	(-0.34)
ROE	**-0.922**	**-0.805**	**2.222**	**0.092**	**-5.562**
	(-0.60)	(-0.27)	(0.73)	(0.05)	(-1.25)
LOSS	**6.433*****	**5.855****	**9.134****	**8.954*****	**3.062**
	(3.43)	(2.16)	(2.44)	(3.96)	(0.75)
MTB	**0.064**	**0.062**	**0.111**	**-0.001**	**0.738**
	(0.73)	(0.34)	(0.53)	(-0.01)	(1.54)
BIG4	**-9.106*****	**-0.929**	**-8.694***	**-8.298****	**-15.809**
	(-2.82)	(-0.27)	(-1.86)	(-2.33)	(-1.64)
ACIND	**-0.076****	**-0.123***	**-0.053**	**-0.067****	**-0.153**
	(-2.50)	(-1.95)	(-1.29)	(-2.05)	(-1.15)
BSIZE	**1.529*****	**2.620*****	**1.608****	**1.578****	**2.206**
	(2.85)	(3.54)	(2.58)	(2.49)	(1.52)
Constant	**87.286*****	**150.157*****	**81.260*****	**89.333*****	**135.635****
	(7.81)	(8.85)	(5.33)	(7.30)	(2.11)
Industry FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Std. Error Adj.	Firm clustering	Firm clustering	Firm clustering	Firm clustering	Firm clustering
N	694	96	230	488	173
Adj. R-squared	0.460	0.722	0.445	0.469	0.520

Table 5.7 presents the audit efficiency analysis for the relationship between audit lag and EFA holding, EFAs amount, FVTOCI presentation choice, and level 3 fair value measurement. I examine the audit fee models by changing the dependent variable to *AuditLag* (the number of days between financial year-end and the date of the audit report is signed). I examine a subsample of early IFRS 9 adopters and show the results in Column (2). Column (3) is a subsample including firm-years one year before and after IFRS 9 adoption. I examine the model on subsample of firm-years without year 2020 and onwards to eliminate the COVID effect on audit lag, as shown in Column (4). Column (5) is the results in largest firms whose total assets are in the first quartile. I include control variables of *LnTA, ARINV, CURRENT, LEV, ROE, LOSS, MTB, BIG4, ACIND,* and *BSIZE* in the models. All t statistics (in parentheses) are based on standard errors clustered by firm. All continuous variables are winsorised at the top and bottom one percentile. All variables are defined in Appendix 2. ***, ** and * denote significance at the 1%, 5% and 10% levels, respectively.

Chapter 6: Conclusion

6.1 Research Summary

EFAs are financial assets that are equity investments in other entities. Extant research documents that investment securities account for an important portion of firms' total assets (Brown, 2014; Lu et al., 2023). Motivated by the accounting standard changes for EFAs from IAS 39 to IFRS 9, the focus of this thesis is the use of EFAs, determinants of EFA classification, usefulness of EFAs, and the audit costs of EFAs in the context of whether these changed post IFRS 9.

Accounting standards for financial instruments have long been an area of contention, and the demand for a new accounting standard intensified after the global financial crisis (Chatham et al., 2010; Gebhardt, 2012). Some of the complexities come from the classification and measurement of EFAs in IAS 39. Under IAS 39, firms need to classify EFAs into either held-for-trading assets, in which the FVGL is presented in profit or loss, or available-for-sale assets, in which the FVGL is presented in OCI (IAS 39, para 43 and 46). EFAs are measured at fair value unless they cannot be measured with reliability such that cost measurement is allowed. However, IFRS 9 removes EFA classification categories and indicates that EFAs are measured by the way they are classified (PwC, 2017). Unlike with IAS 39, the FVGL on EFAs are not allowed to recycle from equity to profit or loss when derecognised under IFRS 9. IFRS 9 requires fair value measurement for EFAs without the cost option (IFRS 9, para 4.1.2 and 5.7.5). When the IASB was developing IFRS 9, debates among various stakeholders centred on whether to allow the alternative FVTOCI choice for EFA classification and whether to recycle the FVGL on EFAs (EFRAG, 2015; Street, 2014).

The first study (Chapter 3) investigates the use of EFAs, the impact of FVTOCI classification for EFAs on financial ratios, and the characteristics of firms that choose the FVTOCI classification for EFAs. After examining EFA information in ASX 300 firms one year before and after IFRS 9 adoption, I find that the number of firms that invest in EFAs has not changed significantly. FVTOCI is the most common classification choice for EFAs both before and after IFRS 9, indicating firms' compliance with the standard with stable FVTOCI choice. I use "what-if" analysis to examine profitability ratios assuming different classification choices for EFAs and find no significant differences for any of the ratios, especially in non-financial firms, suggesting that the classification choice is not (cannot be) applied to affect financial performance. I find that the use of EFAs and FVTOCI classification choice varies among sectors and firm sizes. Given the lack of a clear pattern between the choice of FVTOCI classification and income volatility, the alternative EFA classification choice is not used to reduce income volatility.

The second study (Chapter 4) examines the determinants of EFA classification choice and the value relevance of EFA information both before and after IFRS 9. Using a sample of ASX 500 firms three years before and after IFRS 9 adoption, I find that whether firms invest in EFAs or not, EFA investment amount, and classification choice have no significant change after IFRS 9. A potential exploitation of the accounting choice given in IAS 39 may exist in firms by considering EFA effect on net income and contractual incentives when making the classification choice. However, the opportunistic use of the EFA classification choice is mitigated after IFRS 9, given that the EFA amount drives non-financial firms' EFA classification choice, reflecting a strategic investment, and no EFA characteristics or contractual incentives affect financial firms' EFA classification choice. The EFA amount provides value relevance when it comprises a large portion of total assets, and EFA effect on OCI is only value relevant in financial firms before but not

after IFRS 9.

The third study (Chapter 5) explores the audit cost related to EFAs and whether it changed post IFRS 9. I examine the relationship between audit fees and EFA holdings in a sample of non-financial ASX 500 firms three years before and after IFRS 9 adoption and find higher audit fees in firms that have EFAs, which are driven by large firms. When further exploring where the increased audit fee comes from, I examine the relationship between audit fees and EFA attributes, including EFA amount, classification location, and fair value measurement hierarchy. Only EFAs that are measured at level 3 fair value are significantly positively associated with audit fees. Using audit lag as a proxy for audit efficiency, I find that audit efficiency is not affected by EFA holdings or EFA attributes. The relationship between EFA and audit fees or audit efficiency is not affected by the adoption of IFRS 9.

Overall, this thesis contributes to the accounting standard-setting of financial instruments and the debates around EFA classification and measurement, and expands academic literature on financial instruments and IFRS 9.

6.2 Implications

The findings of this thesis provide implications for standard-setting by discussing the effect and consequences of EFA accounting standard changes on firms and broadening literature on financial instruments and IFRS 9.

In the first study, I find an increase in the disclosure clarity of EFA classification, indicating an improvement in firms' disclosure after IFRS 9. Given the no significant changes in the use of EFAs and the domination of FVTOCI classification choice, the

IASB does not need to change the requirements for EFA in IFRS 9 significantly, and the FVTOCI classification choice is not abused and should be kept for firms' strategic investments. However, from my observation of reading firms' annual reports, there is a lack of disclosure of the reason for EFA classification choice, and more illustration on EFA information disclosure is needed for IFRS enforcement agents (Deloitte, 2021d; IASB, 2022b).

The result of study two shows no significant change in the use of EFAs, in terms of whether to invest in EFAs or not, EFA amount, and classification choice after IFRS 9, suggesting a longer notice period before IFRS 9 is mandated could make it easier for users to become familiar with the standard and lower the possible costs of averting negative effects from standard changes (Alali and Foote, 2012; Fang et al., 2022). Without recycling the FVGL on EFAs to profit or loss in IFRS 9, the potential abuse of the EFA classification choice is mitigated, showing one benefit of applying IFRS 9. EFA effect on OCI only provides incremental value relevance before IFRS 9, implying the limitation of IFRS 9 in increasing the usefulness of financial information.

The findings of the third study provide important insights for standard setters that the EFA accounting standard changes in IFRS 9 do not incur additional audit costs on firms and do not affect audit efficiency. The third study contributes to the fair value literature by showing evidence in auditing EFAs that audit fees increased in the complexity of fair value estimation (Ettredge et al., 2014; Miah, 2019). The results of the third study are cautious in interpreting the significant negative relationship between audit fees and IFRS 9 adoption as an audit fee decrease after IFRS 9 (Fang et al., 2022). However, the results suggest that the effectiveness of IFRS implementation and audit and standards enforcement environments may affect the cost of IFRS 9 across different

jurisdictions.

6.3 Limitations and Future Research Suggestions

This thesis is subject to several limitations, and some potential avenues for future research are identified.

The first limitation relates to the scope of the studies. The development of IFRS 9 has three phases, including classification and measurement, a new impairment model, and hedge accounting. Studies in this thesis only focus on the first stage, specifically the changes in the accounting standard of equity financial instruments in IFRS 9. From reviewing literature on IFRS 9 and the comments in Awuye and Taylor (2024), much research discusses the new ECL impairment model from different perspectives; however, research on the hedge accounting rules in IFRS 9 is sparse. In addition, the current ECL research focuses on Europe; hence, there is limited indication of the new ECL model application in the Australian market. The field of examining the use and effectiveness of the new hedge accounting standards in IFRS 9 is under research that is one of the future endeavours. Studies could also explore the consequences of the ECL impairment model on the Australian market and provide insight to standard setters regarding considering other jurisdictions in future revisions.

The second limitation comes from the sample scope and research design in the third study. The third study examines audit costs related to EFAs in non-financial companies. The literature documents that the financial instruments accounting standard has a higher impact on financial institutions, and many studies examine the effect of standard changes in banks (Awuye and Taylor, 2024). Given the different nature of holding EFAs in non-financial and financial companies, it is of interest to know whether

the no additional audit costs incurred in non-financial companies related to the EFA accounting standard changes remain the same in financial companies. Future research could explore the relationship between audit fees and EFAs in banks. The third study only examines the costs related to EFA accounting standard changes from an audit perspective, while other costs may be incurred by companies, for example, the cost of capital or labour costs for having capable employees to prepare statements based on IFRS 9 (Enache et al., 2022). Therefore, future research may explore the other costs of implementing IFRS 9 or the EFA accounting standard changes in IFRS 9, in particular.

The third limitation relates to the institutional setting and research methodology. IFRS 9 took effect with IFRS 15 doing so at the same time, making it difficult to isolate the effect of IFRS 9 from other factors. Therefore, all three studies only focus on the most impacted group, which is companies with EFAs, and discuss the effect of EFA accounting standard changes only. However, future research could apply different research methodologies, for example, surveys and interviews, to explore the effects and consequences of IFRS 9 on firms.

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APPENDICES

Appendix 1: EFA reporting example from WOW 2019 annual report

Consolidated Statement of Other Comprehensive Income

	2019 53 WEEKS $M	2018 52 WEEKS $M
Profit for the period	**2,759**	1,795
Other comprehensive income		
Items that may be reclassified to profit or loss, net of tax		
Effective portion of changes in the fair value of cash flow hedges	**14**	23
Foreign currency translation of foreign operations	**76**	(81)
Items that will not be reclassified to profit or loss, net of tax		
Change in the fair value of investments in equity securities	**(9)**	17
Actuarial loss on defined benefit superannuation plans	**(3)**	(1)
Other comprehensive income/(loss) for the period, net of tax	**78**	(42)

AASB 9 *Financial Instruments* (AASB 9)

AASB 9 is a new standard which replaced AASB 139 *Financial Instruments: Recognition and Measurement*. In previous periods, the Group early adopted AASB 9 (2013), and related amendments. AASB 9 (2014) superseded AASB 9 (2013) and introduced a new expected credit loss impairment model for financial assets and a new classification and measurement category 'fair value through other comprehensive income' for certain debt and equity instruments. This amendment became effective in the current period and the Group adopted the amendment on 25 June 2018.

An assessment was performed on the impact of the expected credit loss impairment model and the new classification and measurement category. Based on the assessment, the Group concluded that the impact on transition to AASB 9 (2014) was not material. Accordingly, no comparative amounts have been adjusted.

3.2 OTHER FINANCIAL ASSETS AND LIABILITIES

Other financial assets and liabilities consists of derivatives, the Group's holdings in listed and unlisted investments, and loans provided to related parties.

	2019 $M	2018 $M
Current		
Derivatives	45	53
Total current other financial assets	45	53
Non-current		
Derivatives	501	366
Listed equity securities	91	96
Investments in associates	59	57
Loans provided to related parties	41	3
Total non-current other financial assets	692	522
Total other financial assets	737	575
Current		
Derivatives	58	50
Total current other financial liabilities	58	50
Non-current		
Derivatives	24	61
Total non-current other financial liabilities	24	61
Total other financial liabilities	82	111

SIGNIFICANT ACCOUNTING POLICIES

Derivatives

Refer to Note 4.7 for details of derivatives.

Listed equity securities

The Group's investments in listed equity securities are designated as financial assets at fair value through other comprehensive income. Investments are initially measured at fair value net of transaction costs and, in subsequent periods, are measured at fair value with any change recognised in other comprehensive income. Upon disposal, the cumulative gain or loss recognised in other comprehensive income is transferred to retained earnings.

2019	CASH FLOW HEDGE RESERVE $M	FOREIGN CURRENCY TRANSLATION RESERVE $M	REMUNERATION RESERVE $M	ASSET REVALUATION RESERVE $M	EQUITY INSTRUMENT RESERVE $M	TOTAL $M
Balance at start of period	(43)	58	279	17	42	353
Effective portion of changes in the fair value of cash flow hedges, net of tax	38	-	-	-	-	38
Transfers to initial carrying amount of hedged items, net of tax	(24)	-	-	-	-	(24)
Foreign currency translation of foreign operations, net of tax	-	76	-	-	-	76
Share-based payments expense	-	-	62	-	-	62
Issues of shares to satisfy employee long-term incentive plans	-	-	(6)	-	-	(6)
Change in the fair value of investments in equity securities	-	-	-	-	(9)	(9)
Balance at end of period	(29)	134	335	17	33	490

4.7.4 Fair value measurement of financial instruments

Some of the Group's financial assets and financial liabilities are measured at fair value at the end of each reporting period. The following table provides information about how the fair values of these financial assets and financial liabilities are determined. They are grouped into levels 1 to 3 based on the degree to which the fair value measurement inputs are observable.

Level 1 Fair value measurements are those derived from quoted prices (unadjusted) in active markets for identical assets or liabilities.

Level 2 Fair value measurements are those derived from inputs other than quoted prices included within level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices).

Level 3 Fair value measurements are those derived from valuation techniques that include inputs for the asset or liability that are not based on observable market data (unobservable inputs).

		FAIR VALUE ASSET		FAIR VALUE LIABILITY		
	NOTE	2019 $M	2018 $M	2019 $M	2018 $M	FAIR VALUE HIERARCHY
Listed equity securities	3.2	91	96	-	-	Level 1
Forward exchange contracts and foreign currency options	4.7.1	17	42	-	(1)	Level 2
Cross currency and interest rate swaps	4.7.1	529	377	(82)	(110)	Level 2

There were no transfers between level 1 and level 2 during the period.

These figures are extracted from Woolworths Group Ltd (WOW) 2019 annual report on pages 73,79,88,105 and 114. 2019 is the first year for WOW to adopt IFRS 9. EFAs amount classified at FVTOCI is 91 AUD million, measured with level 1 fair value hierarchy. The fair value gains or losses effect for EFA on OCI is -9 AUD million.

Appendix 2: Variable definitions

Variable	Definition
Dependent variables	
AuditLag	is the number of days between financial year-end and the date of the audit report is signed.
FVTOCI	is a binary variable that equals one if any of firm *i*'s EFA is classified as FVTOCI in year *t*, and zero otherwise.
LnAF	is the natural logarithm of total audit fees disclosed in firms' annual report.
Price	is the share price of a firm *i* three months after its balance date in year *t*.
Independent variables	
ACIND	is the percentage of independent directors on the audit committee.
ADOPT	is a binary variable that equals one if a firm adopts IFRS 9 in year *t* and for all years post adoption, and zero otherwise.
AmtEFA_S	is the EFA amount balance at fiscal year-end scaled by outstanding shares.
ANALYST	is the number of sell-side analysts covering the security.
ARINV	is the total accounts receivables and inventories scaled by total assets.
BIG4	is a binary variable that equals one if a firm *i* is audited by Deloitte, Ernst and Young, KPMG or PwC in year *t*, and zero otherwise.
BSIZE	is the number of directors on the board.
BVE_S	is book value of equity scaled by outstanding shares.
CEOCOMP	is the rate of CEO compensation variable portions (including cash bonus and equity award) to total compensation.
CI_S	is total comprehensive income scaled by outstanding shares.
CURRENT	is current assets scaled by current liabilities.
EFAAmt	is the total EFAs amount balance at fiscal year-end deflated by total assets.
EFAeffect	is the EFA effect on net income, calculated as the absolute value of a ratio that is any FVGL on EFAs divided by net income for firm *i* in year *t*.
EFAHolder	is a binary variable that equals one if a firm has EFAs in their fiscal year-end balance, and zero otherwise.
EFAmeas	is a binary variable that equals one if firm *i* applies a level 3 fair value hierarchy to any of its EFAs measurement in year *t*, and zero otherwise.
FVTOCI	is a binary variable that equals one if a firm has any EFAs presented at fair value through OCI (FVTOCI), and zero otherwise.
LEV	is total liabilities scaled by total assets.
Level3EFA	is a binary variable that equals one if a firm applies a level 3 fair value hierarchy to any of its EFA measurement, and zero otherwise.
Level3EFAAmt	is the total balance EFAs amount that is measured at level 3 fair value hierarchy at fiscal year-end *t* scaled by total assets.
LnTA	is the natural logarithm of total assets.
LOSS	is a binary variable that equals one if a firms' net income is negative in year *t*, and zero otherwise.
MTB	is the market to book ratio, that is firm's market value in year *t* divided by its book value of equity.
OCIEFA_S	is the effect of FVGL for EFAs on OCI scaled by outstanding shares.
OnlyLevel1EFA	is a binary variable that equals one if a firm only applies a level 1 fair value hierarchy to all of its EFA measurement, and zero otherwise.
OnlyLevel2EFA	is a binary variable that equals one if a firm only applies a level 2 fair value hierarchy to all of its EFA measurement, and zero otherwise.
OnlyLevel3EFA	is a binary variable that equals one if a firm only applies a level 3 fair value hierarchy to all of its EFA measurement, and zero otherwise.
PLEFA_S	is the effect of FVGL for EFAs on profit or loss scaled by outstanding shares.

ROE	is net income after tax scaled by total equity.
ROEadj	is return on equity excludes any FVGL effect on EFAs.

Appendix 3: Test of the effectiveness of the Propensity Score Matches (PSM)

Panel A: The effectiveness of PSM with treatment EFAHolder

Variable		Firms have EFA	Firms do not have EFA	Difference
ADOPT	Pre-Match	0.511	0.493	0.82
	Post-Match	0.514	0.507	0.27
LnTA	Pre-Match	20.757	19.953	8.09***
	Post-Match	20.757	20.758	-0.01
ARINV	Pre-Match	0.143	0.164	-2.82***
	Post-Match	0.143	0.140	0.26
CURRENT	Pre-Match	4.049	3.431	2.29**
	Post-Match	4.049	3.880	0.49
LEV	Pre-Match	0.389	0.420	-2.84***
	Post-Match	0.389	0.387	0.24
ROE	Pre-Match	0.005	-0.033	1.64
	Post-Match	0.005	-0.007	0.53
LOSS	Pre-Match	0.237	0.318	-4.15***
	Post-Match	0.280	0.282	-0.12
MTB	Pre-Match	3.569	6.167	-5.48***
	Post-Match	3.569	3.678	-0.29
BIG4	Pre-Match	0.842	0.782	3.52***
	Post-Match	0.836	0.840	-0.22
ACIND	Pre-Match	81.222	75.755	3.80***
	Post-Match	81.222	79.592	1.05
BSIZE	Pre-Match	6.659	6.242	4.87***
	Post-Match	6.659	6.673	-0.14

Panel B: The effectiveness of PSM with treatment FVTOCI				
Variable		Firms have *FVTOCI*	Firms do not have *FVTOCI*	Difference
ADOPT	Pre-Match	0.477	0.507	-1.20
	Post-Match	0.467	0.508	-1.18
LnTA	Pre-Match	21.014	20.450	3.36***
	Post-Match	21.014	20.802	1.47
ARINV	Pre-Match	0.154	0.126	2.45**
	Post-Match	0.154	0.167	-1.14
CURRENT	Pre-Match	3.903	4.478	-1.10
	Post-Match	3.903	4.064	-0.34
LEV	Pre-Match	0.393	0.383	0.61
	Post-Match	0.393	0.375	1.19
ROE	Pre-Match	-0.004	0.020	-0.78
	Post-Match	-0.004	0.003	-0.27
LOSS	Pre-Match	0.243	0.299	-2.46***
	Post-Match	0.295	0.366	-2.15**
MTB	Pre-Match	3.487	3.266	0.53
	Post-Match	3.487	3.262	0.59
BIG4	Pre-Match	0.843	0.786	4.39***
	Post-Match	0.869	0.881	-0.53
ACIND	Pre-Match	84.214	76.826	3.48***
	Post-Match	84.214	81.020	1.81*
BSIZE	Pre-Match	6.804	6.445	2.42**
	Post-Match	6.804	6.736	0.53

Panel C: The effectiveness of PSM with treatment Level3EFA				
Variable		Firms have *Level3EFA*	Firms do not have *Level3EFA*	Difference
ADOPT	Pre-Match	0.576	0.490	2.66***
	Post-Match	0.563	0.536	0.57
LnTA	Pre-Match	21.536	20.428	6.42***
	Post-Match	21.518	21.406	0.62
ARINV	Pre-Match	0.152	0.138	1.13
	Post-Match	0.153	0.154	-0.06
CURRENT	Pre-Match	2.662	4.838	-3.99***
	Post-Match	2.674	2.544	0.38
LEV	Pre-Match	0.419	0.375	2.42**
	Post-Match	0.417	0.412	0.24
ROE	Pre-Match	0.091	-0.035	3.98***
	Post-Match	0.088	0.107	-1.22
LOSS	Pre-Match	0.188	0.299	-3.81***
	Post-Match	0.189	0.153	1.01
MTB	Pre-Match	2.854	3.656	-1.84*
	Post-Match	2.751	3.009	-0.70
BIG4	Pre-Match	0.882	0.796	3.38***
	Post-Match	0.869	0.896	-0.88
ACIND	Pre-Match	87.392	78.282	4.10***
	Post-Match	87.279	87.044	0.14
BSIZE	Pre-Match	7.174	6.413	4.95***
	Post-Match	7.162	7.135	0.15

The Appendix 3 displays the first stage Propensity Score Matches (PSM) that involves pairing treatment and control firms based on similar firm characteristics. The procedure is using the propensity score, which is estimated by a probit model to calculate the probability of a firm to be treated, to match each treatment firm to a control firm with the nearest neighbour matching with replacement. Panel A, we match firms that have EFA with firms that do not have EFA based on *ADOPT*, industry, *LnTA, ARINV, CURRENT, LEV, ROE, LOSS, MTB, BIG4, ACIND,* and *BSIZE.* Panel B, we match firms that have any EFA presented at FVTOCI with firms that have EFA but do not use FVTOCI presentation based on *ADOPT*, industry, *LnTA, ARINV, CURRENT, LEV, ROE, LOSS, MTB, BIG4, ACIND,* and *BSIZE.* Panel C, we match firms that have level 3 fair value measurement for any of their EFA with firms that have EFA but do not use level 3 fair value measurement based on *ADOPT*, industry, *LnTA, ARINV, CURRENT, LEV, ROE, LOSS, MTB, BIG4, ACIND,* and *BSIZE.* The significance of the difference is based on the t-statistic. *,**,***indicate significance at the 0.10, 0.05, and 0.01 two-tailed levels, respectively. Appendix 2 provides details of variable definition.

Appendix 4: Differences in observables (covariates) before and after entropy balancing

Panel A: Differences in observables (covariates) before and after entropy balancing with treatment EFAHolder

	Treated (694 EFAHolder)			Control (1,352 None EFAHolder)			Balance Stats	
Covariates	Mean	Variance	Skewness	Mean	Variance	Skewness	Std. Diff.	Var. Ratio
Before Balancing								
ADOPT	0.514	0.250	(0.058)	0.493	0.250	0.030	0.044	1.000
LnTA	20.760	4.532	(0.508)	19.950	4.530	(0.384)	0.378	1.000
ARINV	0.143	0.023	1.953	0.164	0.030	1.451	(0.144)	**0.766**
CURRENT	4.049	39.650	3.608	3.431	30.280	4.059	0.098	**1.309**
LEV	0.389	0.051	0.404	0.420	0.053	0.425	(0.135)	0.948
ROE	0.005	0.170	(3.778)	(0.033)	0.281	(2.899)	0.091	**0.605**
LOSS	0.280	0.202	0.983	0.321	0.218	0.767	(0.092)	0.925
MTB	3.569	45.870	6.172	6.167	132.500	4.290	(0.384)	**0.346**
BIG4	0.836	0.138	(1.812)	0.784	0.170	(1.380)	0.139	**0.811**
ACIND	81.220	765.800	(1.727)	75.750	1,046.000	(1.273)	0.198	**0.732**
BSIZE	6.659	3.711	0.271	6.242	3.166	0.472	0.216	**1.172**
After Balancing								
ADOPT	0.514	0.250	(0.058)	0.514	0.250	(0.058)	0.000	1.001
LnTA	20.760	4.532	(0.508)	20.760	4.532	(0.505)	0.001	1.000
ARINV	0.143	0.023	1.953	0.143	0.023	1.953	0.000	1.000
CURRENT	4.049	39.650	3.608	4.048	39.650	3.608	0.000	1.000
LEV	0.389	0.051	0.404	0.389	0.051	0.405	0.000	1.000
ROE	0.005	0.170	(3.778)	0.005	0.170	(3.778)	0.000	1.000
LOSS	0.280	0.202	0.983	0.280	0.202	0.981	(0.000)	1.000
MTB	3.569	45.870	6.172	3.569	45.950	6.174	(0.000)	0.998
BIG4	0.836	0.138	(1.812)	0.836	0.138	(1.811)	0.000	1.000
ACIND	81.220	765.800	(1.727)	81.210	765.800	(1.726)	0.000	1.000
BSIZE	6.659	3.711	0.271	6.658	3.711	0.272	0.000	1.000

Panel B: Differences in observables (covariates) before and after entropy balancing with treatment FVTOCI

	Treated (413 FVTOCI)			Control (281 None FVTOCI)			Balance Stats	
Covariates	Mean	Variance	Skewness	Mean	Variance	Skewness	Std. Diff.	Var. Ratio
Before Balancing								
ADOPT	0.467	0.250	0.131	0.584	0.244	(0.339)	(0.233)	1.023
LnTA	21.010	5.334	(0.374)	20.450	3.790	(0.534)	0.244	**1.407**
ARINV	0.154	0.025	1.808	0.126	0.020	2.221	0.182	**1.234**
CURRENT	3.903	42.220	4.197	4.478	51.920	3.779	(0.089)	**0.813**
LEV	0.393	0.048	0.348	0.383	0.054	0.440	0.048	**0.877**
ROE	(0.004)	0.169	(3.791)	0.020	0.133	(3.255)	(0.058)	**1.277**
LOSS	0.295	0.209	0.897	0.256	0.191	1.117	0.086	1.090
MTB	3.487	27.950	4.262	3.266	30.050	4.518	0.042	0.930
BIG4	0.869	0.114	(2.191)	0.787	0.169	(1.398)	0.245	**0.676**
ACIND	84.210	577.000	(1.876)	76.830	1,014.000	(1.443)	0.308	**0.569**
BSIZE	6.804	3.998	0.207	6.445	3.226	0.321	0.180	**1.239**
After Balancing								
ADOPT	0.467	0.250	0.131	0.467	0.250	0.131	0.000	0.999
LnTA	21.010	5.334	(0.374)	21.020	5.335	(0.377)	(0.001)	1.000
ARINV	0.154	0.025	1.808	0.154	0.025	1.808	(0.000)	1.000
CURRENT	3.903	42.220	4.197	3.903	42.230	4.197	(0.000)	1.000
LEV	0.393	0.048	0.348	0.393	0.048	0.348	(0.000)	1.000
ROE	(0.004)	0.169	(3.791)	(0.004)	0.169	(3.791)	0.000	1.000
LOSS	0.295	0.209	0.897	0.295	0.209	0.899	0.001	1.000
MTB	3.487	27.950	4.262	3.487	27.950	4.262	(0.000)	1.000
BIG4	0.869	0.114	(2.191)	0.869	0.114	(2.193)	(0.001)	1.000
ACIND	84.210	577.000	(1.876)	84.220	577.200	(1.877)	(0.000)	1.000
BSIZE	6.804	3.998	0.207	6.805	3.998	0.206	(0.000)	1.000

Panel C: Differences in observables (covariates) before and after entropy balancing with treatment Level3EFA

	Treated (224 Level3EFA)			Control (470 None Level3EFA)			Balance Stats	
Covariates	Mean	Variance	Skewness	Mean	Variance	Skewness	Std. Diff.	Var. Ratio
Before Balancing								
ADOPT	0.567	0.247	(0.270)	0.489	0.250	0.043	0.156	0.985
LnTA	21.540	4.324	(0.233)	20.430	4.609	(0.437)	0.533	0.938
ARINV	0.152	0.023	1.849	0.138	0.023	2.013	0.092	1.002
CURRENT	2.662	14.410	7.564	4.838	59.820	3.392	(0.573)	**0.241**
LEV	0.419	0.050	0.386	0.375	0.050	0.391	0.196	1.006
ROE	0.091	0.034	(0.621)	(0.035)	0.207	(3.228)	0.685	**0.163**
LOSS	0.188	0.153	1.601	0.323	0.219	0.755	(0.347)	**0.698**
MTB	2.854	11.870	3.228	3.656	36.660	4.122	(0.233)	**0.324**
BIG4	0.866	0.117	(2.150)	0.821	0.147	(1.677)	0.131	**0.792**
ACIND	87.390	341.300	(1.482)	78.280	942.400	(1.536)	0.493	**0.362**
BSIZE	7.174	3.409	0.288	6.413	3.676	0.305	0.412	0.927
After Balancing								
ADOPT	0.567	0.247	(0.270)	0.567	0.246	(0.269)	0.001	1.002
LnTA	21.540	4.324	(0.233)	21.530	4.323	(0.222)	0.004	1.000
ARINV	0.152	0.023	1.849	0.152	0.023	1.851	0.000	1.000
CURRENT	2.662	14.410	7.564	2.661	14.400	7.566	0.000	1.001
LEV	0.419	0.050	0.386	0.419	0.050	0.388	0.001	1.000
ROE	0.091	0.034	(0.621)	0.091	0.034	(0.622)	0.000	1.000
LOSS	0.188	0.153	1.601	0.188	0.153	1.597	(0.001)	1.000
MTB	2.854	11.870	3.228	2.853	11.870	3.230	0.000	1.000
BIG4	0.866	0.117	(2.150)	0.866	0.117	(2.145)	0.001	1.000
ACIND	87.390	341.300	(1.482)	87.360	341.200	(1.477)	0.002	1.000
BSIZE	7.174	3.409	0.288	7.172	3.408	0.292	0.001	1.000

Appendix 4 presents covariate distributions before and after using entropy balancing to assign weights to firm-year observations. The treatment variable in Panel A is *EFAHolder,* in Panel B is *FVTOCI*, and in Panel C is *Level3EFA*. Standardised differences (Std. Diff.) are presented to assess covariate balance on the means between treatment and control samples, computed as the differences in means between the treatment and control samples divided by the standard deviation of the treatment sample for each covariate (with values near zero when the distribution for a particular covariate is more similar between treatment and control samples). Variance ratio (Var. Ratio) is calculated as the ratio of the variance of each covariate in the treatment sample scaled by variance for the control sample (in bold indicates variance ratios outside the ± 0.1 (4/5 and 5/4) cutoffs for a balanced covariate suggested by Rubin (2001) and Austin (2011). Appendix 2 provides details of variable definition.