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IFRS 9 and the new accounting treatment of the own credit risk of financial liabilities designated as at fair value through profit or loss: incentives for early adoption and effects on value relevance

IFRS 9 e o novo tratamento contábil do risco próprio de crédito de passivos financeiros designados ao valor justo: incentivos para a adoção antecipada e efeitos sobre a relevância da informação

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“A goal to which accounting academics should strive is research motivated by practice and practice motivated by research. Only then will academic researches help facilitate financial accountability and contribute to a prosperous society that can base decisions on high-quality financial information.”

(Barth, 2015, p. 508)

RESUMO

Almeida, D.L. (2019). *IFRS 9 e o novo tratamento contábil do risco próprio de crédito de passivos financeiros designados ao valor justo: incentivos para a adoção antecipada e efeitos sobre a relevância da informação* (Tese de Doutorado). Faculdade de Economia, Administração e Contabilidade, Universidade de São Paulo, São Paulo.

O valor justo tornou-se um princípio de mensuração crucial na contabilidade internacional e seu aumento nos relatórios financeiros tem gerado debates tanto na prática quanto na literatura acadêmica. Particularmente ao mensurar uma dívida de longo prazo, discussões acerca do uso do valor justo continuam controversas e ainda não chegaram a um consenso na literatura acadêmica e entre os praticantes. Em 2010, o *International Accounting Standards Board* (IASB) reeditou a *International Financial Reporting Standard (IFRS) 9 – Financial Instruments*, norma que substituiu a IAS 39, introduzindo um novo tratamento contábil para as variações do valor justo atribuíveis às alterações no risco próprio de crédito (*own credit risk - OCR*) em passivos financeiros designados ao valor justo por meio do resultado (*fair value option for liabilities - FVOL*). Pela IAS 39, o OCR era tratado na demonstração de resultado (DRE), enquanto a IFRS 9 requer que seja tratado em outros resultados abrangentes. Em novembro de 2013, o IASB alterou a IFRS 9 para permitir que as empresas adotassem antecipadamente o novo tratamento contábil de OCR sem precisar aplicar completamente a IFRS 9. A mudança no tratamento contábil e a alteração na IFRS 9 instigaram uma análise aprofundada sobre seus possíveis impactos. Nesse sentido, este estudo examina dois tópicos relacionados: os incentivos para a adoção antecipada do tratamento contábil de OCR sem a adoção completa da IFRS 9 e os efeitos sobre a relevância informacional do lucro líquido. A amostra é não probabilística e contém instituições financeiras internacionais que aplicam o IFRS e possuem FVOL. Baseando-se em modelos logísticos, os resultados de escolhas contábeis indicam que o Retorno sobre Patrimônio Líquido (ROE) e fatores institucionais e macroeconômicos influenciam a probabilidade de adoção antecipada do novo tratamento contábil de OCR. Embora a volatilidade dos lucros tenha sido uma preocupação que pressionou o IASB a mudar o tratamento contábil de OCR, não há evidências que ela tenha influenciado a probabilidade de adotar antecipadamente o novo tratamento contábil. Da mesma forma, não há evidências que a volatilidade dos ativos disponíveis para venda tenha influenciado a probabilidade de adotar antecipadamente o novo tratamento contábil de OCR. Baseado em modelos lineares múltiplos, os resultados de relevância informacional revelaram que após eliminar da DRE as variações do valor justo atribuíveis às alterações em OCR, a relevância informacional não aumentou significativamente. Tal achado é inconsistente com o objetivo primário do IASB para a IFRS 9, que era de aumentar a relevância informacional dos lucros. Esta pesquisa contribui para a literatura existente, pois, até onde sei, esta é a primeira investigação sobre a escolha contábil de adotar antecipadamente o tratamento contábil de OCR e sobre a relevância informacional dos lucros após a adoção mandatória da IFRS 9, em 2018. Assim, este estudo contribui para esse controverso, porém interessante assunto para a pesquisa e a prática, o risco próprio de crédito de FVOL, cuja literatura ainda é incipiente e não atingiu um consenso. Abordar a opção do valor justo e o risco próprio de crédito é uma oportunidade de contribuir para o preenchimento de uma lacuna na literatura contábil e tentar aproximar os acadêmicos e os profissionais.

Palavras-chave: Passivos financeiros. Risco próprio de crédito. IFRS 9. Escolhas contábeis. Relevância informacional.

ABSTRACT

Almeida, D.L. (2019). *IFRS 9 and the new accounting treatment of the own credit risk of financial liabilities designated as at fair value through profit or loss: incentives for early adoption and effects on value relevance* (Tese de Doutorado). Faculdade de Economia, Administração e Contabilidade, Universidade de São Paulo, São Paulo.

Fair value accounting has become a crucial measurement principle in international accounting, and its increase in financial reporting has generated debate both in practice and in the academic literature. Particularly when measuring long-term debt, discussions surrounding the use of fair value remain controversial and have not yet reached a consensus in the accounting literature and among practitioners. In 2010, the International Accounting Standards Board (IASB) reissued the International Financial Reporting Standard (IFRS) 9 – Financial Instruments, which replaces IAS 39, introducing a new accounting treatment of fair value changes attributable to changes in firms' own credit risk (OCR) of financial liabilities designated as at fair value through profit or loss (FVOL). Under IAS 39, OCR used to be treated in the income statement, whereas IFRS 9 requires the treatment in other comprehensive income instead. In November 2013, the IASB amended IFRS 9 to permit entities to early adopt the new accounting treatment of OCR without the need to adopt IFRS 9 entirely. This change in the accounting treatment and the amendment in IFRS 9 instigated a depth analysis about its possible impacts. In that sense, this study examines two related topics: the incentives to early adopt the new accounting treatment of OCR without adopting IFRS 9 entirely, and the effects on the value relevance of net income figure. The sample is non-probabilistic and contains international financial institutions that apply IFRS, and have FVOL. Based on logistic models, the results on accounting choice indicate that the Return on Equity (ROE) and institutional and macroeconomic factors influence the likelihood to early adopt the new accounting treatment of OCR. Although volatile earnings were a concern that put pressure on the IASB to change the accounting treatment of OCR, there is no evidence that earnings volatility influenced the likelihood to early adopt the new accounting treatment. Similarly, there is no evidence that the available-for-sale volatility influenced the likelihood to early adopt the new accounting treatment of OCR. Based on multiple linear regressions, the results on value relevance reveal that after eliminating fair value changes attributable to changes of OCR out of the income statement, the value relevance is not significantly increased. This finding is inconsistent with the primary objective of the IASB for IFRS 9, which is to increase the value relevance of earnings. This research adds the extant literature because, as far as I know, this is the first investigation on the accounting choice to early adopt the accounting treatment of OCR, and on the value relevance of net income figures after the mandatory adoption of IFRS 9, in 2018. Thus, this study contributes to this controversial, but an interesting issue for research and practice, the own credit risk of FVOL, whose literature is still incipient and have not yet reached a consensus. Addressing the fair value option and the own credit issue is a chance to contribute to the fulfilment of a gap in the accounting literature and to try to approximate academics and practitioners.

Keywords: Financial liabilities. Own credit risk. IFRS 9. Accounting choice. Value relevance.

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ACRONYMS

AFS	Available-for-sale
AIC	Akaike's information criterion
AOCI	Accumulated Other Comprehensive Income
APA	American Psychology Association
ASC	Accounting Standards Codification
BCBS	Basel Committee on Banking Supervision
BIC	Bayesian information criterion
BRGAAP	Brazilian Generally Accepted Accounting Principles
CLT	Central Limit Theorem
CPC	Comitê de Pronunciamentos Contábeis
EFRAG	European Financial Reporting Advisory Group
EU	European Union
FASB	Financial Accounting Standards Board
FCAG	Financial Crisis Advisory Group
FGV	Fundação Getúlio Vargas
FSB	Financial Stability Board
FSF	Financial Stability Forum
FVO	Fair value option
FVOCI	Fair value through other comprehensive income
FVOL	Fair value option of financial liabilities
FVTPL	Fair value through profit or loss
GAAP	Generally Accepted Accounting Principles
G7	Group of Seven (group comprised of the seven wealthiest and most advanced nations in the world)
G20	Group of Twenty (international association of 19 states and the supranational EU)
IASB	International Accounting Standards Board
IFRS	International Financial Reporting Standards
IMF	International Monetary Fund
OCI	Other Comprehensive Income
OCR	Own credit risk
PAT	Positive Accounting Theory
ROC	Receiver Operating Characteristics
ROE	Return on Equity
SEC	Securities and Exchange Commission
SFAC	Statement of Financial Accounting Concepts
SFAS	Statement of Financial Accounting Standards
SPPI	Solely payments of principal and interest
TARP	Trouble Asset Relief Program
UK	United Kingdom
USA	United States of America
USGAAP	United States Generally Accepted Accounting Principles
USP	University of São Paulo
VIF	Variance Inflation Factor
WDI	World Development Indicators

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1 INTRODUCTION

1.1 Context

The globalisation of the economy and markets leads companies to become worldwide players. Thus, the comparison between firms is essential for investors and agents of the financial market. In order to compare them, accounting is a common tool used.

Accounting is shaped by economics and politics (Watts & Zimmerman, 1986). Increasing international trade and capital flows, as well as cross-border economic integration over the past decades, have led the desire to harmonise accounting standards across jurisdictions. A cross-border integration of markets and politics is an extraordinary reduction in the cost of international communication and transacting, and such revolutionary internationalisation inevitably creates a demand for international convergence in financial reporting. (Ball, 2006).

The primary step in the accounting harmonisation process was taken in 2005 with the adoption of the International Financial Accounting Standards (IFRS) by all listed companies in the European Union. Since then, several countries started their process to adopt or converge their accounting standards to IFRS. Nowadays, 157 countries around the world have already adopted or converged to IFRS standards¹.

In the last decades, the Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB) have increasingly focused on incorporating more fair value measurements and disclosures into financial reports. Considering that more countries have adopted or converged to IFRS standards, more balance sheet items have been measured and disclosed at fair value. Because the use of fair value measurement has increased over time, the location where to record changes in the remeasured balance sheet accounts became a hotly debated topic. (Jones & Smith, 2011).

Since the recognition of fair value gains or losses were argued to be too volatile to be a useful component of profit or loss, the treatment as a component of other comprehensive income (OCI) was developed and has been expanded over time, as more and more items in the balance sheet have been remeasured after initial recognition. (Jones & Smith, 2011).

Shedding light on the accounting treatment of financial instruments, the focus of my study, in December 2003, the IASB issued the amended standard IAS 39 – Financial Instruments:

¹ According to the IASB, of the 157 jurisdictions, 144 (92 per cent) require IFRS standards for all or most domestic listed companies and financial institutions, 12 (7 per cent) permit all or most companies to use IFRS standards, and 1 (1 per cent) requires IFRS standards for financial institutions. For further details, please visit the IASB's website (www.ifrs.org). Retrieved on: 30/06/2019.

Recognition and Measurement. This amendment included an option, on initial recognition, to designate irrevocably any financial asset or liability as being held at fair value, with changes in value being recorded in profit or loss, which is known as fair value option (FVO). The purpose of this option was to simplify the accounting treatment of financial instruments and to provide an opportunity to reduce accounting mismatches, resulting from the mixed measurement model, in situations where hedge accounting cannot be applied. Thus, the intention was to diminish earnings volatility by avoiding different impacts in the income statement, which may not be representative of the economics of the reporting entity's activities.

However, concerns were raised that the fair value option might be misused, which made the EU-endorsed version of IAS 39, that was applied by listed companies for accounting periods commencing on/after 1 January 2005, to exclude the option to carry any financial liability as at fair value through profit or loss (FVTPL).

In June 2005, the IASB issued a new amendment to IAS 39. The amendment limited the ability for an entity to designate any financial asset or financial liability as at FVTPL. The change was made in response to some commentators, including the European Central Bank, the Basel Committee, and the EU Commission, who raised those concerns previously mentioned.

Whereas the IAS 39's original fair value option was designed to address situations where the standard's mixed measurement model could result in an entity reporting volatility on positions that are economically matched, the objective of the June 2005 amendment is to limit incorrect use of the fair value option while preserving its main benefits. According to IAS 39 (IASB, 2008a), financial instruments may be designated irrevocably on initial recognition to be measured at FVTPL when the following conditions apply:

- a) The designation eliminates or significantly reduces an accounting mismatch (e.g., where a financial asset would otherwise be held at amortised cost and associated liability would be held as at fair value through profit or loss, or vice versa);
- b) A group of financial assets, financial liabilities or both are managed, and their performance is evaluated, on a fair value basis according to a documented risk management or investment strategy or
- c) A financial instrument contains an embedded derivative² that meets certain conditions.

The requirements for reporting financial instruments have been considered complex by many preparers of financial statements, their auditors, and users of financial statements since

² An embedded derivative is a component of a hybrid (combined) financial instrument that also includes a non-derivative host contract. Some of the cash flows of the combined instrument vary in a way similar to a stand-alone derivative. (IASB, 2014c).

IAS 39 was issued. The reform of financial instruments accounting was one of the areas identified in the Norwalk Agreement³ of 2002 between the IASB and the FASB. As a result of this agreement, many projects were undertaken to eliminate a variety of differences between the IFRS standards and the United States Generally Accepted Accounting Principles (USGAAP), whose scope includes the accounting for financial instruments.

In 2008, the financial crisis emerged IAS 39 weaknesses, being both bodies pressured to accelerate the revision. Thus, the work on IFRS 9 – Financial Instruments was accelerated, which is the standard that replaces the IAS 39.

In particular, interested parties including the G20⁴, the Financial Crisis Advisory Group (FCAG)⁵ and others highlighted the own credit risk (firm's risk of not paying its own debts) as one of the areas in need of consideration, due to the volatility in profit or loss caused by its change, when financial liabilities were elected to be measured at FVTPL.

The reason for such concern is the fact that the fair value of an entity's debt is affected by changes in the entity's own credit risk. It means that when an entity's credit quality declines the value of its liabilities falls, and if those liabilities are measured at fair value, a gain is recognised in profit or loss (or vice versa). Many investors and other users found this result counterintuitive and confusing. Hence, such accounting treatment became the core of a heated debate among academics, practitioners, and standard setters (e.g., Barth, Hodder, & Stubben, 2008; Gaynor, McDaniel, & Yohn, 2011; Lachmann, Stefani, & Wöhrmann, 2015; Lipe, 2002).

In order to accelerate the project and give a quick answer to the financial crisis, the project of IFRS 9 was divided into three main phases: (a) classification and measurement of financial instruments, (b) impairment, and (c) hedge accounting. The specific objective of the IASB for IFRS 9 is to increase the relevance and understandability of information about financial instruments. (IASB, 2014c).

In November 2009, IFRS 9 was issued, covering classification and measurement of financial assets. One year later, in October 2010, new requirements on accounting for financial liabilities were incorporated to IFRS 9, when it was reissued. The IASB decided to keep the requirements of IAS 39 for financial liabilities in IFRS 9, except for the new requirements for

³ In October 2002, the FASB and the IASB announced the issuance of a memorandum of understanding, called as "Norwalk Agreement", with the aim to formalise their commitment to the convergence of the U.S. and the international accounting standards.

⁴ The Group of Twenty (G20) is a leading international forum of the world's major economies, founded in 1999, that seeks to develop global policies to address today's most pressing challenges. The group is made up of 19 countries and the European Union. For further details, please see the G20's website (<https://www.g20.org>).

⁵ The Financial Crisis Advisory Group is a high-level advisory group set up by the IASB and the FASB to consider financial reporting issues arising from the global financial crisis.

the accounting and presentation of changes in the fair value of an entity's own credit risk when the entity has chosen to measure its debt at fair value under the fair value option. The objective of the IASB to change such requirements was to address concerns regarding the usefulness of reporting gains in the income statement when an entity is experiencing deterioration in its own credit quality.

To address the so-called own credit issue, IFRS 9 requires that changes in fair value attributable to changes in firm's credit risk of financial liabilities designated as at FVTPL, under the fair value option, must be recorded in OCI, rather than in profit or loss, as it was previously required by IAS 39, unless such treatment would create or enlarge an accounting mismatch in profit or loss, when the same treatment as under IAS 39 should be kept. Amounts presented in OCI cannot be subsequently transferred to profit or loss, sometimes referred to as "recycled", when the corresponding liability is removed from the balance sheet. When it happens, any accumulated gain or loss is reclassified within the equity section.

Since IFRS 9 was published in 2010, including the accounting treatment of financial liabilities, requests for the IASB to accelerate the application of the own credit requirements were intensified. The reason for such requests is the fact that the income statements remain volatile and own credit gains or losses continue to be significant, which increases the concerns about the usefulness of reporting gains when an entity is experiencing deterioration in its own credit quality, as previously said.

After analysing some possibilities, the IASB decided that once the completed version of IFRS 9 is issued, there would have permission to early adopt the own credit requirements in isolation, without the need to early adopt IFRS 9 entirely. Nearly all respondents to the Exposure Draft Classification and Measurement: Limited Amendments to IFRS 9⁶ supported the proposal that entities would be permitted to early adopt only the own credit requirements in IFRS 9.

In November 2013, the IASB amended IFRS 9 to permit entities to early adopt the own credit risk requirements without adopting the other requirements of IFRS 9 at the same time. The change made in the accounting treatment of fair value gains or losses attributable to changes in the firm's credit risk of financial liabilities designated as at FVTPL and the permission to early adopt only the "own credit" provisions in IFRS 9 instigated an analysis about the incentives for an entity to early adopt such accounting treatment without adopting

⁶ Available on the IASB's website (www.ifrs.org).

IFRS 9 entirely and the effects of the new accounting treatment on the value relevance of net income figure.

Considering the context of accounting harmonisation, the importance of high-quality accounting standards and the disclosure of financial statements that represent the economics of the reporting entity's activities, the reduction of complexity in the accounting standards related to financial instruments, and a brief overview of the changes introduced by IFRS 9, there is an opportunity to present the research problem of this study.

1.2 Research question and objectives

According to Martins and Theóphilo (2007), a research problem originates from uneasiness, doubt, hesitation, perplexity, curiosity about an unresolved issue. For these authors, the research begins with the problem, and it is the search for its solution that guides the whole logic of the investigation.

Accounting choice literature addresses the fundamental question of whether accounting matters (Fields, Lys, & Vincent, 2001) and is central to the study of accounting (Watts, 1992). Given the importance of financial instruments for financial institutions around the globe, the complexity of its accounting, and the permission to early adopt only the accounting treatment of fair value gains or losses attributable to changes in firm's credit risk, without early adopting IFRS 9 entirely, the first concern raised regards the choice to early adopt such accounting treatment.

Furthermore, one of the primary objectives in financial reporting is to provide investors with relevant information that give support to them to estimate the value of a firm. Value relevance research measures the usefulness of accounting information from the equity investor's standpoint. Thus, the primary objective of the value relevance research is to check empirically whether the financial reporting's goal has been achieved by investigating statistical associations between economic measures of value (e.g., market values of stocks and stock returns) and accounting information (e.g., the book value of equity and earnings). Since the IASB's objective for IFRS 9 is to increase the relevance and understandability of information about financial instruments (IASB, 2014c), the second concern regards the value relevance of net income figure after changing the new accounting treatment of the own credit risk of financial liabilities designated as at FVTPL.

Therefore, there are two important topics to investigate concerning the new accounting treatment of gains or losses attributable to firm's credit risk of financial liabilities designated as

at FVTPL. The first one are the incentives for financial institutions to early adopt only the new accounting treatment of the own credit risk of financial liabilities designated as at FVTPL, without early adopting IFRS 9 entirely. The second topic are the effects on financial institutions that mandatorily adopted the new accounting treatment on 1 January 2018.

The controversial debate regarding the accounting treatment of fair value gains or losses attributable to changes in firm's credit risk (e.g., Barth, Hodder et al., 2008; Gaynor et al., 2011; Lachmann et al., 2015; Lipe, 2002) and the two concerns highlighted previously suggest the need for an analytical and empirical investigation of this issue, which is the aim of this research. Thus, the questions aimed to be answered by this research are:

1. What are the determinants for financial institutions to early adopt only the new accounting treatment of the own credit risk of financial liabilities designated as at fair value through profit or loss, without early adopting IFRS 9 entirely?
2. Has the value relevance of accounting information increased after the change in the accounting treatment of the own credit risk of financial liabilities designated as at fair value through profit or loss?

According to Sampieri, Collado, and Lucio (2006), the objectives intend to show what is expected from research and has to be expressed clearly, as they are the study's guidance. A clear statement aims to avoid possible deviations of the research process.

In order to answer the research question, the study aims to analyse the determinants to early adopt only the accounting treatment of the own credit risk of financial liabilities designated as at FVTPL, without early adopting IFRS 9 entirely. Moreover, the second objective of this study is to investigate whether the value relevance of accounting information has increased after the change in such accounting treatment, as expected by the IASB.

To be more specific, this study will go through the following steps:

- a) Understand the significant changes that IFRS 9 brings to the accounting treatment of financial liabilities designated as at FVTPL;
- b) Identify financial institutions that have financial liabilities designated as at FVTPL and early adopted the new accounting treatment of the own credit risk;
- c) Evaluate the determinants of financial institutions to early adopt only the new accounting treatment of the own credit risk of financial liabilities designated as at FVTPL without adopting IFRS 9 entirely and

- d) Analyse whether the value relevance of net income figure has increased after the mandatory adoption of the new accounting treatment of the fair value changes attributable to changes in the firm's own credit risk of financial liabilities designated as at FVTPL.

In order to answer the specific objectives listed, this study uses samples containing firms that apply the fair value option for financial liabilities and early adopted the new accounting treatment of the own credit risk (group of interest) in comparison to those that apply the fair value option but did not early adopt the new accounting treatment (group of control). When the mandatory effect is analysed, the study uses a sample containing financial institutions that apply the fair value option for financial liabilities and mandatorily adopted the new accounting treatment in 2018.

It is important to emphasise that the samples contain only firms from countries that adopt or are converged to IFRS, as a proxy for comparable financial statements. Further details about the methodology applied in the study are available in Section 3.

1.3 Importance and contributions of the study

In 2018, according to the IASB (IASB, 2018), 157 countries require or permit the use of IFRS. Among the most complex topics is the accounting for financial instruments. Emphasising its complexity, Sir David Tweedie, the former IASB Chairman, used to say that if someone understands IAS 39, this person has not read it properly - it is incomprehensible. Moreover, in 2008, while introducing the discussion paper "Reducing Complexity in Reporting Financial Instruments", he said that IAS 39, which the IASB inherited from its predecessor body, is far too complex and that the IASB was determined to simplify and improve IAS 39 by creating a principle-based standard. (IASB, 2008b).

In proposing a change in the classification and measurement requirements for financial instruments, it is necessary to analyse the impact that it can bring. The importance of the study is based on the sparse literature analysing the effects of IFRS 9 requirements on financial reporting, both in the international literature (e.g., Cipullo & Vinciguerra, 2014; Elgeti, Pummerer, & Steller, 2010; Hronsky, 2010; Huian, 2012, 2013; Jääskeläinen, 2016; Singleton-Green, 2014), as well as in the national literature (e.g., Almeida, 2010; Carvalho, Albuquerque, Quirós, & Justino, 2015; Sayed, Souza, Costa, & Tancini, 2013), which can be justified by the fact that the standard is effective for annual periods beginning on or after 1 January 2018.

Since IFRS 9 has just become mandatorily effective, empirical studies that use field data is still incipient. Most of them tend to discuss expectation and perceptions regarding the impacts of IFRS 9 or to analyse the constituents' participation in the development of this standard.

Whereas Cipullo and Vinciguerra (2014) analyse the impact of IFRS 9 and IFRS 7 on liquidity in banks, on a theoretical perspective, evaluating whether financial reporting correctly reflects the risk exposure of a bank and its management, Jääskeläinen (2016) examines the main changes introduced by IFRS 9 and its possible effects at Kesko Group, a company used as his case study. Huian (2013), in its turn, examines the level of involvement of all major stakeholder groups in the development of the first phase of IFRS 9, through the submission of comment letters to the IASB, and the degree in which the concerns and complaints expressed by those letters were integrated into the final standard. Carvalho et al. (2015) also examine the comment letters received by the IASB in the context of IFRS 9's first phase, however, with the aim at analysing the differences in terms of professional interests among the various groups of stakeholders.

Using different perspectives, some studies focus on the impairment loss of financial assets. For instance, Elgeti et al. (2010) compare the accounting for default risk of bonds according to IAS 39 versus the proposal introduced by the exposure draft of IFRS 9 Financial Instruments: Amortised Cost and Impairment, whereas Hronsky (2010) analyses the conceptual issues underlying the debate on provisioning and procyclicality, and assesses possible financial statement impacts of introducing IFRS 9. Gebhardt (2016), in its turn, uses as a case study the Greek government bonds to criticise the impairment model under IFRS 9, mainly because of the restriction in Stage 1 to calculate only the 12-month expected credit losses. Meanwhile, Novotny-Farkas (2016) examines the interaction between the expected credit model under IFRS 9 and the supervisory rules, discussing potential implications for financial stability in the European Union.

In Brazil, still focusing on impairment models, Sayed et al. (2013) simulate the impacts in earnings and their respective volatilities resulting from changing the financial instruments standard, from IAS 39 to IFRS 9, regarding the new methodology of impairment and the elimination of the available for sale classification and their reclassification to the fair value through profit or loss category. Dantas, Micheletto, Cardoso, and Freire (2017), in its turn, evaluate whether there is a difference between levels of losses disclosed by the Brazilian banks according to the Brazilian Generally Accepted Accounting Principles (BRGAAP) accounting models and IFRS, which of them provide losses estimate that reflect more accurately the actual write-offs and the potential effects of introducing IFRS 9.

Another focus of IFRS 9's studies is the classification and measurement of financial instruments. For instance, Huian (2012) critically analyses the new rules to account for financial assets and liabilities according to the controversial project of IFRS 9, regarding the new concepts, options and accounting treatments mean, and on the possible consequences of their appliance. In its turn, Singleton-Green (2014) argues that financial reporting already reflects firms' business models and makes the case for an approach to measurement in financial reporting based on firms' business models. The approach distinguishes between assets that are transformed by a firm's in-firm processes and those that are not. The author identifies some problems with the business model approach to measurement, such as proposed by IFRS 9. Focusing on the Islamic accounting, Shafii and Rahman (2016) examine some issues in IFRS 9 with regards to classification and measurement of financial assets, as well as some concerns on the use of fair value to measure financial assets.

In Brazil, particularly on prudential and performance ratios, Almeida (2010) analyses, within the context of IFRS 9, whether the change in financial assets classification introduces significant changes in the prudential and the profitability ratios of the most prominent Brazilian banks. Focusing on the five biggest Brazilian insurance companies, Crote, Weffort, and Peters (2017) simulate the possible effects of changing the classification and measurement of financial assets under IFRS 9.

Fair value accounting has become a crucial measurement principle in international accounting, and its increase in financial reporting has generated debate both in practice and in the academic literature. Because IAS 39 gave firms the option to fair value their financial liabilities, with gains and losses recorded in profit or loss, the standard had been controversial and had drawn considerable attention. Particularly when measuring long-term debt, discussions surrounding the use of fair value measurement remain controversial and have not yet reached a consensus in the accounting literature and among practitioners. (e.g., Barth, Hodder et al., 2008; Gaynor et al., 2011; Lachmann et al., 2015; Lipe, 2002).

The inclusion of effects due to changes in a firm's own credit risk when measuring the fair value of liabilities remains one of the most debated aspects of fair value accounting among academics. Critics of this standard argue that reporting an accounting gain from its financial liabilities when the firm's creditworthiness has deteriorated is very confusing to the market (Lipe, 2002), and it is possible that managers can exploit the accounting treatment of fair valuing liabilities for opportunistic reasons (Henry, 2009; Guthrie, Irving, & Sokolowsky, 2011).

Barth, Hodder et al. (2008) add that the aspect seen as controversial is the recognition of a gain when a company experiences financial difficulties that cause the credit risk of its debt, as perceived by present and potential creditors, to increase, and the recognition of a loss, otherwise. Hence, when an entity elects the FVO for its debt, a decline in the company's creditworthiness is likely to have a favourable effect on its reported income, as the fair value of its liabilities reduces, or an unfavourable effect if there is an improvement when the fair value of its liabilities increases.

The authors mentioned above highlight that the understanding of how credit risk changes affect the values of debt and equity is relevant to the debate about using fair value accounting for liabilities. While for some it is counterintuitive, cannot be understood by the users and may mask a financial deterioration of a company, for others it is a message that a decrease in asset value has not been recognised, which could offset the gain in the liability. Moreover, decreases in the fair value of an entity's debt below its amortised cost create an opportunity for the entity to settle its debt at bargain prices by buying back the debt in the open market. Therefore, such opportunities generate economic benefits for the entity's shareholders.

Contrary to Barth, Hodder et al.'s (2008) view, Pounder (2012) lists some objections to the treatment of changes in fair value of financial liabilities designated as at FVTPL attributable to changes in firm's credit risk in profit or loss:

- a) Unrealised gain that exists when the fair value of an entity's debt is less than the debt's amortised cost is far more likely to become realised than the unrealised loss that exists when the fair value of an entity's debt is higher than the debt's amortised cost. That is because it makes economic sense for the entity to buy back its debt in the open market when it can do so more cheaply than settling the debt under its original terms, whereas it would not make sense for the entity to do the opposite. Thus, it does not make much sense for the accounting treatment to be symmetrical both above and below amortised cost when the likelihood of gain/loss realisation is decidedly asymmetrical.
- b) Unrealised gain reported for a fair-valued financial liability is unlikely to be fully realisable. If a debtor entity attempts to realise the gain by buying back the entire debt, the entity will create higher-than-normal demand for the debt in the market, which would drive the debt's price upward from its existing level. Thus, the more expensive the debt becomes, the less gain the entity would realise.
- c) Some creditors may be committed to holding the debt until maturity and would not be willing to sell, thus, limiting the debtor's realised gain.

Corroborating to Pounder's (2012) view, Scott (2015) highlights some reservations about recording gains and losses attributable to changes in the firm's credit risk in net income. Firstly, the author states that the decline in fair value of debt creates a wealth transfer between constituencies: shareholders gain through the lower economic value of firm debt, and debtholders lose through increased risk of future interest and principal payments. For the author, under the entity view of financial reporting adopted by the Conceptual Framework, the income statement is a report of firm performance to all capital providers. Consequently, for the author, it is questionable whether a gain to shareholders accompanied by a loss to debtholders represents a firm's income.

The second point highlighted by Scott (2015) is the fact that an increase in a firm's credit risk is usually accompanied by a decline in the fair value of its assets. However, as many of these assets are not recorded (e.g., internally developed goodwill) or are recorded, but measured at cost (e.g., property, plant, and equipment), there is no loss to offset the decline in the fair value of debt, creating a mismatch-like situation. The author concludes that, again, it is questionable whether gains to shareholders should be recorded.

As seen, the fair value option of financial liabilities is a controversial subject, has not yet reached a consensus and, in the best of my knowledge, has not yet been studied by Brazilian researchers, and has international literature very sparse. Therefore, this study extends existing international studies that investigate the fair value option. For instance, Chang, Liu, and Ryan (2009) examine the determinants of the timing of and financial instruments involved in banks' fair value option elections upon their adoption of SFAS 159 – The Fair Value Option for Financial Assets and Financial Liabilities, nowadays Accounting Standards Codification (ASC) 825. They find that hedge accounting ineffectiveness and accounting mismatches, which are used as proxies for the intended objectives of SFAS 159, predict the fair value option's adoption only for regular adopters, but not for early adopters.

Moving one step further, Fiechter (2011) examines whether the reduction in accounting mismatches is translated into lower earnings volatility. Using a sample of banks from 42 countries, he finds that adopters of IAS 39 had lower earnings volatility in the cross-section and that earnings volatility decreased around the election of the fair value option. His findings contrast to those previously evidenced by Song (2008), who concludes that the banks in his sample were primarily opportunistic adopters of the fair value option. Moreover, the author finds that adopters systematically benefited from earnings management and balance sheet restructuring, but he does not find evidence of earnings volatility's reduction or a change in

hedging activities. However, since Song (2008) does not differentiate between early and regular adopters in his sample, this may cause the discrepancy among both findings.

Similarly, Henry (2009) examines firms that early adopted SFAS 159 and then rescinded or revised their early adoption, concluding that such reversals imply opportunistic use of the implementation provisions, which was an excellent opportunity to manage earnings by reclassifying losses to retained earnings, without reporting such losses in the income statement.

Building on Henry's (2009) study of early adopting banks, Guthrie et al. (2011) examine to what extent the firm's election of instruments benefited their current or future earnings. Unlike Henry (2009), their findings suggest that earnings management is only plausible to early adopters.

Extending previous literature that examines specific elections and intent of adoption (e.g., Chang, Liu, & Ryan, 2011; Henry, 2009; Guthrie et al., 2011), Couch, Thibodeau, and Wu (2017) directly examine whether fair value option under SFAS 159 resulted in decreased earnings volatility. In contrast to Fiechter (2011), their findings show that earnings volatility increased among US financial institutions after the fair value adoption in 2008.

Focusing on the own credit risk subject, the extant literature has provided mixed results. For instance, whereas Gaynor et al. (2011), Lipe (2002) and Lachmann et al. (2015) agree that credit risk effects must be presented in the other comprehensive income, as these reported gains are unlikely to be realised and are not understood by the users, Barth, Hodder et al. (2008), Fiechter (2011), and Chung, Lobo, and Yong (2017) have the opinion that the effect must be recognised in profit or loss, as it has informative power about the entity's value and risk and better reflects real market changes.

Using the Boston Chicken's 1997 form 10-K⁷, which is a period that the company faced a credit quality deterioration, Lipe (2002) demonstrates how the recognition of changes in the fair value of liabilities, due to the change in its own credit risk, can be 'counterintuitive' or even 'dangerous'. For the author, if the fair value measurement considers the effects of changes in the own credit risk, such gains or losses could be placed in OCI, in order to avoid conflicting signals, as described using the Boston Chicken's case.

Chasteen and Ransom (2007) also consider as counterintuitive the gain or losses due to changes in own credit risk of financial liabilities designated as at FVTPL, and they propose to measure such liabilities at their risk-free carrying amount.

⁷ Available on the Sec's website (<https://www.secinfo.com/dS9Jj.7Ey.htm#1stPage>). Retrieved on: 30/06/2019.

Using a different approach, Gaynor et al. (2011) experimentally find that over 70 per cent of CPA participants incorrectly assess a company's credit risk as improving (deteriorating) when a fair value gain (loss) is recognised. They also find that disclosures which explicitly specify the relation between the direction of the credit risk change and the income statement effect significantly reduce participants' misinterpretations, and are more beneficial when fair value gains versus losses are recognised. However, their results suggest that disclosure improvements alone may not mitigate investors' misinterpretations of fair value gains and losses related to liabilities and that perhaps standard setters should consider excluding credit risk gains and losses from the income statement.

Similarly, Lachmann et al. (2015) use an experiment with the aim to gain insight into how non-professional investors process fair value information for liabilities. Their findings indicate that non-professional investors are less likely to acquire information about changes in credit risk of liabilities when they are not measured at fair value. However, they find evidence that fair value measurement is to some extent counterintuitive for the subjects analysed since participants are more likely to acquire the information on changes in credit risk if that information is included in OCI, indicating that IFRS 9 might reduce misperceptions in firm performance evaluation.

Shedding light on the value relevance of the own credit risk, Barth, Hodder et al. (2008) find that equity returns associated with credit risk changes are attenuated by the debt effect of the credit risk changes. They find that upgrade firms would recognise higher net income than they do under current accounting standards if all changes in debt and asset values were recognised, and downgrade firms would recognise lower net income, which is consistent with firms' unrecognised asset value changes exceeding their unrecognised debt value changes. Their results suggest that anomalous effects on net income more likely arise from the failure to recognise all changes in asset values, than from the recognition of changes in debt values.

Corroborating to Barth, Hodder et al. (2008), Chung et al. (2017) examine the economic implications of fair value liability gains and losses arising from the adoption of SFAS 159, also finding a positive correspondence between a firm's fair value liability gains and losses and stock returns. Further analysis indicated that fair value gains and losses from liabilities attributable to the change in a firm's own credit risk are also positively related to returns. They also document that the volatility of earnings that incorporates SFAS 159 liability fair value gains and losses is positively associated with market measures of firm risk. Finally, their study provides direct empirical evidence that such gains and losses are value and risk relevant.

Shedding light on IFRS 9, Onali and Ginesti (2014) examine the price reaction to news related to IFRS 9 adoption events. Their findings suggest that investors reacted positively to the ongoing accounting reform, particularly those domiciled in countries with a weaker rule of law and weaker divergence between local accounting standards and IAS 39. Finally, the authors invite empirical studies that could follow after the final implementation of IFRS 9, in order to examine whether the investors' expectations have been fulfilled and if the market reaction depends on specific firm characteristics in addition to country factors.

Using a different approach, van Veen (2011) also analyses the influence of the change in the treatment of fair value changes due to changes in own credit risk on the value relevance of reported net income considering the proposal presented on the Exposure Draft related to the fair value option of financial liabilities. Unlike Onali and Ginesti (2014), she concludes that the value relevance of net income does not increase after removing the gains or losses due to the own credit risk from the income statement. Moreover, the author analyses the determinants of choosing the fair value option for financial instruments. Her findings indicate that volatility of earnings, leverage and size influences the likelihood to use the FVO.

This empirical evidence' review demonstrates that there is no consensus regarding the use of FVO and that there are just a few studies focused on the accounting treatment of the own credit risk of financial liabilities designated as at FVTPL, under IFRS 9. Thus, there is an opportunity to contribute to this controversial but interesting issue for research and practice.

Furthermore, understanding how credit risk changes affect the values of debt and equity is relevant to the debate about measuring liabilities at fair value. The fair value option of financial liabilities has some peculiar features that motivate this study. First, while the measurement at fair value is more common and mandatory for financial assets, such as trading securities, derivatives, and assets classified as at fair value through other comprehensive income, fair value measurement for financial liabilities is strictly optional, except for derivatives. Second, the fair value option is adopted by the management on a contract-by-contract basis, but once elected, it has to be carried out for the whole life of the instrument. Third, if the management elects fair value option of financial liabilities, an increase (decrease) in the firm's credit quality results in a decrease (increase) in the fair value of liabilities and an increase (decrease) in other comprehensive income, under IFRS 9. Fourth, whereas the fair value measurement of financial assets is affected exclusively by external factors, the fair value measurement of financial liabilities is affected by both external factors (market risk) and internal factors (firm's credit quality). Fifth, the literature regarding the value relevance and accounting choices related to IFRS 9 is still incipient. Sixth, since IFRS 9 became mandatorily effective recently, but could

have been early adopted since 2013, when permitted in the corresponding jurisdiction, there is an opportunity to directly test the value relevance and accounting choices related to the accounting treatment of the own credit risk of financial liabilities designated as at FVTPL, as encouraged by Onali and Ginesti (2014).

Therefore, this study adds the current literature once it is, based on the best of my knowledge, the first investigation focusing on the early adoption of the new treatment of the own credit risk of financial liabilities designated as at FVTPL. Moreover, financial liabilities have been neglected, since most of the time, the discussion focuses on financial assets. (Gaynor et al., 2011).

The reason for choosing the financial industry to study the impacts of IFRS 9 is the fact that it is more than evident that the financial sector is a vital economic sector, given its role as intermediary and provider of liquidity to the economy. Given the fact that they can cause a systemic crisis, it is essential that its health is monitored by supervisory authorities and by other financial market participants, whether on an individual basis or the system as a whole.

Moreover, the financial sector will be one of the most affected by the requirements of IFRS 9 due to the characteristic of its activity. This industry typically holds the most substantial proportion of assets and liabilities at fair value on its balance sheets. As the IASB states, “regulated financial institutions are extensive holders and issuers of financial instruments and so are likely to be among the largest potential users of the fair value option.” (IASB, 2014a, p. BCZ4.71).

According to Fiechter (2011), in 2006, 56 per cent of international banks applied FVO in any form. The author adds that while fewer (31 per cent) of banks applied FVO to their financial liabilities, the amount is considerably higher than the figure of designated assets. Moreover, based on the study carried out by Guthrie et al. (2011), firms electing the fair value option are most heavily concentrated in financial and insurance industries (73.6 per cent). Finally, restricting the analysis over financial institutions increases the homogeneity among sample firms, in terms of industry, and it is why financial institutions are the main focus of this study.

Going further, according to the report sent to the G7⁸, on international standards, banking supervisors have an interest in accounting standards and their effects on financial reporting, as they can affect their objectives:

Banking supervisors have an interest in the quality of accounting standards and their effective implementation, as a means of providing a basis for relevant and reliable measures of assets, liabilities, equity and income, as well as capital adequacy, and enhancing market discipline through transparent financial

⁸ The Group of Seven (G7) is a group consisting of Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States of America, considered as the seven wealthiest and most advanced nations in the world.

reporting. They want to ensure that accounting standards used by banks both support these goals and facilitate – rather than work against – supervisor’s objective of fostering safe and sound banking systems. (BCBS, 2000, p. 6).

Accounting standard setters determine the requirements that have to be followed by firms when preparing the financial report to investors, creditors and any other external user. Moreover, as standard setters are responsible for developing standards to meet the needs of issuers and users of financial statements, research focused on standard-setting issues provides insights into the financial needs of these parties, which can also contribute with insights to management, investors, auditors, and any other interested party.

As mentioned by Barth (2000), academic research aids in identifying issues, helping standard setters and other parties structure their thinking about a particular issue and providing evidence that speaks to an issue. Moreover, she states that there is a demand for more academic research that provides insights into questions of interest to accounting standard setters and other practitioners. Recently, with the aim to invite for more studies addressing questions of interest to global standard setters, Barth (2018a, 2018b) lists the fair value option of financial liabilities and the own credit risk as one of three examples of studies addressing questions relating to the IASB agenda topics that can be crafted to influence standard setting, since they address global financial reporting issues.

Regarding the measurement and recognition of financial liabilities, Gaynor et al. (2011) emphasise that “little attention has been given in academic research to the issue of reporting financial liabilities at fair value and, in particular, to the accounting for credit risk change as gain or losses” (p. 132), and they invite new researchers to address this subject.

In the same way, Fiechter (2011) states that as the U.S. subprime crisis became a global financial crisis in 2008, the effect of the fair value option on the volatility of bank earnings remains a controversial but exciting issue for accounting research and practice. The author gives the own credit risk adjustments on financial liabilities designated as FVTPL as an example of a subject to be studied, encouraging researchers to investigate this field further.

Emphasising the need for more studies focused on practical issues, the accounting research has been seen detached from the practice (Hopwood, 2007; Humphrey, 2008), with more accounting academics interested in questions other than those of interest to accounting practice, including accounting standard setting (Barth, 2015). Additionally, Barth (2015) asserts that the recent expansion of accounting research to focus on how the accounting information is communicated rather than its content illustrates the weakening of the link between accounting research and practice. Thus, to address the fair value option and the own credit issue is a chance

to contribute to the fulfilment of a gap in the accounting literature and to try to approximate academics and practitioners.

However, as previously mentioned by Barth (2000), it is important to note that researchers are not consultants setting out to find answers to specific questions that practitioners and standard setters posit. Instead, researchers' role is to extend knowledge to enhance the understanding of the characteristics of accounting amounts and the role of accounting in capital markets. Thus, this study intends to go further on a subject that has received little attention from academic research and is very relevant for the capital markets, otherwise, it would not have been so debated during the IFRS 9 standard-setting process.

Because currently 150 jurisdictions have already adopted or converged to IFRS, and that IFRS 9 will impact thousands of IFRS reporting financial institutions, "it may be argued that the issues related to the reform of accounting for financial instruments are research subjects worth noticing". (Jääskeläinen, 2016, p. 9). The literature on the recently issued IFRS 9 is incipient, thus this study also seeks to reinforce the literature related to the subject.

Specifically, in the best of my knowledge, no study has examined the determinants of the accounting choice to early adopt only the new treatment of the own credit risk of financial liabilities designated as at FVTPL, without adopting IFRS 9 entirely. Therefore, this study extends the existing literature on accounting choices by analysing the determinants of early adopting the new accounting treatment of the own credit risk of financial liabilities designated as at FVTPL.

Moreover, this study contributes to the stream of research dealing with the value relevance of accounting information. Since IFRS 9 became mandatorily effective recently, empirical studies that use field data are not yet available. Therefore, I add to this incipient branch of research by shedding light on the value relevance of accounting information after removing the gains or losses attributable to changes in firm's credit risk from net income to OCI. Thus, through this study, it is expected to:

- a) Contribute to the literature on the use of fair value in financial reporting and on the incentives for changes in accounting practices, mainly to early adopt IFRS 9, given the shortage in the national and international literature on this subject;
- b) Clarify the effects of the new accounting treatment of the own credit risk in the financial statements, in order to support the users in a critical analysis of the financial statements and ratios;
- c) Support regulators with feedback that can be used as a basis for new policy actions, especially for the capital market and

- d) Approximate the accounting research to the practice, which has been criticised by the literature as being increasingly detached from each other (e.g., Hopwood, 2007; Barth, 2015).

1.4 Limitations

While this study is intended to be a comprehensive and detailed examination of the determinants to early adopt the accounting treatment of the own credit risk of financial liabilities designated as at FVTPL under IFRS 9, the interpretation of the results is subject to some limitations.

First, the delay of the European Financial Reporting Advisory Group - EFRAG in endorsing IFRS 9 to be applied in Europe might have effectively halted the motivation and/or opportunistic elections by possible early adopters. As such, the results cannot be used to predict the extent of opportunistic adoption if all firms in Europe had a chance to make the election choice only after the end of 2016.

Second, since my sample was defined deterministically, the results provided by the regression models cannot be generalised. Moreover, all variables were carefully selected relying on extant literature. Therefore, the results obtained consider the context and the presence of the selected variables (*ceteris paribus*), and may not be confirmed in adverse context and/or in the presence of different explanatory variables.

It is important to emphasise that it was selected only firms that adopt IFRS, in order to ensure consistency in the accounting treatment used to prepare the financial statements. The inclusion of firms under different accounting regimes could bias the results of the statistical models used in this research.

Although country variables were used to control for country-specific factors, it is not possible to ensure total isonomy of the legal environment, politics, economics, among other characteristics that could affect or be affected by the accounting standards.

1.5 Content Outline

In order to achieve the above objectives, this study is organised into five sections. The first one, Introduction, presents the context, the research question and objectives, the importance and contributions of the study, the limitations, and how the study is organised.

Section 2 contains the theoretical framework, which presents the concepts of financial instruments, classification and measurement of financial instruments, the changes made by the IASB, an overview of the IAS 39's replacement, the background of the fair value option, and the own credit risk effects and why they are considered as 'counterintuitive'. Moreover, at the end of each subsection that introduces the theoretical framework related to accounting choices and value relevance, the development of the study's hypotheses is presented.

Section 3 refers to the methodology and presents the research strategy adopted. It also presents the population, sample and variables used in addition to the choice of statistical models and methods, with the respective criteria of validation and evaluation.

Section 4 shows the results, with evidence of quantitative validation of the statistical methods applied.

Finally, Section 5 presents the conclusions and the answer to the research questions. Also, the closing remarks are presented, which summarise the contributions of the study and the recommendations and suggestions for future researches.

In the end, the references used and important appendices to the understanding of this research are presented.

2 LITERATURE REVIEW AND HYPOTHESES

In order to give support to the investigation carried out in this study, the theoretical framework is divided into three parts: (a) accounting for financial instruments; (b) accounting choices literature and (c) value relevance literature. All the three parts are essential to give support to the hypotheses' development sub-sections, which are included as soon as the underlying literature is presented.

2.1 Accounting for financial instruments

2.1.1 Relevant concepts for the application of accounting standards

For an adequate understanding of the financial instruments' classification, measurement and recognition, and its connection to the research problem of this study, firstly, we need to comprehend some relevant concepts. For this purpose, we need to understand the measurement at fair value, what is taken into account when measuring liabilities at fair value, and the recognition of unrealised gains or losses arising from financial instruments measured at fair value as a component of other comprehensive income, which are discussed below.

IFRS 13 (IASB, 2011) defines fair value "as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date." (p. A609). Therefore, it is an exit price, and its measurement assumes that the transaction to sell the asset or transfer the liability takes place either in the principal market or, in its absence, in the most advantageous market for the asset or liability.

Principal market is the market with the highest volume and level of activity, while the most advantageous market is the market that maximises the amount that would be received for the sale of the asset or minimises the amount that would be paid to transfer the liability, after considering transaction costs (e.g., brokerage fees) and transport costs (e.g., freight).

When measuring the fair value of a particular asset or liability, an entity shall take into account the characteristics of the asset or liability (e.g., condition and location of the asset) if market participants would take such characteristics into account while pricing the asset or liability at the measurement date. Market participants are independent buyers and sellers that know the asset or liability they are negotiating, and are willing and able to enter into a transaction.

The fair value measurement follows a hierarchy. Every time a quoted price for an identical asset or liability is available, it must be used. However, if observable prices are not available, an entity shall use valuation techniques that are appropriate, always maximising the use of observable inputs and minimising the use of unobservable inputs. The valuation techniques are divided into three approaches (IASB, 2011):

- a) Market approach: uses prices and other relevant information generated by the market transactions involving identical or similar assets, liabilities or a group of assets and liabilities, such as a business.
- b) Cost approach: reflects the amount that would be required currently to replace the service capacity of an asset.
- c) Income approach: converts future amounts (e.g., cash flows or earnings) to a single discounted amount, reflecting current market expectations about those future values.

Fair value accounting was introduced to increase information's consistency and comparability. For this purpose, IFRS 13 (IASB, 2011) establishes a fair value hierarchy that categorises into three levels the inputs used in the fair value measurement, being them:

- a) Level 1: the highest level, as it provides the most reliable evidence of fair value and comprehends unadjusted quoted prices in active markets for identical assets and liabilities, which shall be prioritised.
- b) Level 2: includes quoted prices for similar assets or liabilities in active markets, quoted prices for identical or similar assets or liabilities collected from inactive markets, or observable inputs, which shall be used when Level 1 inputs are not available.
- c) Level 3: includes unobservable inputs for the asset or liability, which shall be used to the extent that relevant observable inputs are not available.

Regarding the fair value measurement of liabilities, the focus of my study, IFRS 13 (IASB, 2011) determines that "an entity shall take into account the effect of its credit risk (credit standing) and any other factors that might influence the likelihood that the obligation will or will not be fulfilled." (p. A615). Therefore, the fair value of liability reflects the effect of non-performance risk, which includes, but may not be limited to, the entity's own credit risk.

Because the use of fair value measurement has increased over time, the location where to record changes in the remeasured balance sheet accounts became a hotly debated topic. (Jones & Smith, 2011). According to FASB (1997), issues about income reporting were

characterised broadly in terms of a contrast between the so-called current operating performance (or dirty surplus) and the all-inclusive (or clean surplus) income concepts. Under the former income concept, extraordinary and nonrecurring gains and losses are excluded from income, whereas under the all-inclusive income concept, all revenues, expenses, gains, and losses recognised during the period are included in income, regardless of whether they are considered to be results of operations in the period.

Because users of financial statements expressed concerns about the increasing number of comprehensive income items that used to bypass the income statement, they urged the FASB to implement the concept of comprehensive income. (FASB,1997).

The terminology comprehensive income was introduced by the Conceptual Framework – SFAC n° 3⁹, issued in 1980, although it had already been used in SFAC n° 1¹⁰, in 1978. In 1997, the FASB issued the Statement of Financial Accounting Standards n° 130 – Reporting Comprehensive Income, which requires that entities report and display the comprehensive income and its components in a full set of general-purpose financial statements. SFAS 130 (FASB,1997) defines comprehensive income as:

[...] the change in equity [net assets] of a business enterprise during a period from transactions and other events and circumstances from nonowner sources. It includes all changes in equity during a period except those resulting from investments by owners and distributions to owners (p. 6).

SFAS 130 (FASB,1997) uses the term comprehensive income to describe the total of all components of comprehensive income, including net income. Other comprehensive income (OCI) refers to revenues, expenses, gains, and losses that under generally accepted accounting principles are included in comprehensive income but excluded from net income. Hence, comprehensive income comprises net income plus other comprehensive income.

Other comprehensive income classifies its items according to their nature. Examples of components of OCI are the adjustment for foreign currency translation, pension liabilities adjustments, and unrealised gains and losses on available-for-sale investments¹¹. The

⁹ Statement of Financial Accounting Concepts n° 3 - Elements of Financial Statements of Business Enterprises (which was superseded by SFAC n° 6 – Elements of Financial Statements).

¹⁰ Statement of Financial Accounting Concepts n° 1 - Objectives of Financial Reporting by Business Enterprises.

¹¹ Available-for-sale used to be the label for investments according to IAS 39 – Financial Instruments: Recognition and Measurement. According to IFRS 9 – Financial Instruments, such investments are labelled as fair value through other comprehensive income (FVOCI). Details about the classification of financial assets is presented in section 2.1.2.

components may be displayed net of related tax effects or gross of tax effects, but with one amount showing the aggregate income tax effects related to all OCI components.

Reclassification adjustments shall be made to avoid double counting in comprehensive income items that are displayed as part of net income for a period that also had been reported as part of OCI in the same or prior periods.

The total of OCI must be disclosed on the statement of financial position, as a component of equity, separately from the other components, with a descriptive title such as accumulated other comprehensive income (AOCI). An entity shall disclose accumulated balances for each classification in that separate component of equity on the face of a statement of financial position, in a statement of changes in equity, or notes to the financial statements. (FASB,1997).

In 2007, the IASB issued a revised version of IAS 1 – Presentation of Financial Statements, incorporating the requirement to disclose the comprehensive income, which is similar to those requirements under SFAS 130. In the same year, in Brazil, our statutory law (Law nº 11.638 /2007) included a new account in the equity section, to report the other comprehensive adjustments, as part of the commitment towards convergence to the international standards. In July 2009, CPC 26 – *Apresentação das Demonstrações Contábeis* was approved, which is our IAS 1's converged standard.

Finally, as previously mentioned, an entity measuring a liability at fair value has to take into account the effects of changes in its own credit risk. As it is going to be presented in the next section, such effects used to be treated as a component of net income. Nowadays, a new item was included among the components of OCI, which is the component object of this study: gains and losses attributable to changes in firm's credit risk of financial liabilities designated to be measured at fair value. Thus, in the following section I explain the classification and measurement of financial instruments under the former accounting standard (IAS 39), give an overview of the replacement project of IAS 39, the background of the option to designate financial instruments to be measured at fair value, and introduce the new classification and measurement under IFRS 9, which gave rise to my research question.

2.1.2 Financial instruments: definition, classification and measurement

IAS 32 – Financial Instruments: Presentation (IASB, 2014b) defines financial instruments as any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another one.

According to the aforementioned standard, financial asset is defined as (i) cash; (ii) an equity instrument of another entity; (iii) a contractual right to receive cash or another financial asset from another entity or to exchange financial assets or financial liabilities with another entity under conditions that are potentially favourable to the entity; or (iv) a contract that will or may be settled in the entity's own equity instruments. Examples of financial assets are loans to other entities and investments in securities.

IAS 32 (IASB, 2014b) also defines a financial liability as any liability that is: (i) a contractual obligation to deliver cash or another financial asset to another entity or to exchange financial assets or financial liabilities with another entity under conditions that are potentially unfavourable to the entity or (ii) a contract that will or may be settled in the entity's own equity instruments. Examples of financial liabilities are demand deposit, bonds issued, and loans raised from other entities.

Equity instrument means any contract that evidences a residual interest in the assets of an entity after deducting all of its liabilities. Typical examples are ordinary shares.

A financial asset or financial liability is measured initially at fair value, plus or minus, in the case of financial assets or financial liabilities not classified as at FVTPL, transaction costs that are directly attributable to the acquisition or issue of the financial asset or financial liability. Subsequent measurement depends on the financial instrument's classification. Some categories are measured at amortised cost, whereas others are measured at fair value.

Amortised cost is defined as the amount at which the financial asset or financial liability is measured at initial recognition minus the principal repayments, plus or minus the cumulative amortisation using the effective interest method of any difference between that initial amount and the maturity one and, for financial assets, adjusted for any loss allowance (IASB, 2014c). The effective interest method is a method of allocating the interest income or interest expense over the relevant period, considering the effective interest rate of the respective financial instrument.

Fair value, in its turn, is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. (IASB, 2011).

According to the former IAS 39 (IASB, 2008a), a financial asset should be classified into one of the following four categories: (i) financial assets at fair value through profit or loss, (ii) held-to-maturity, (iii) loans and receivables, and (iv) available-for-sale.

A financial asset should be classified in the first category if it was classified as held for trading or upon initial recognition it was designated by the entity as at FVTPL. Held-to-maturity investments were non-derivative financial assets with fixed or determinable payments and fixed maturity that an entity had a positive intention and ability to hold to maturity. Loans and receivables were non-derivative financial assets with fixed or determinable payments, not quoted in an active market and not classified in the other categories. Finally, available-for-sale were non-derivative financial assets that were designated as available for sale or were not classified in the other categories.

While IAS 39 focuses on how the entity intends to realise individual financial assets to classify them, IFRS 9 focuses on the way the business manages its financial assets. According to the current standard, financial assets shall be classified as subsequently measured at amortised cost, fair value through other comprehensive income (FVOCI) or fair value through profit or loss on the basis of both: (i) the entity's business model for managing the financial assets, and (ii) the contractual cash flow characteristics of the financial asset. (IASB, 2014c).

A business model refers to the way the entity manages its financial assets in order to generate cash flows, which can be by collecting contractual cash flows, selling financial assets or both. The determination of the business model should be made on a higher level of aggregation, reflecting how financial assets are managed to achieve the business goal.

The other criteria for determining the classification of a financial asset is whether the contractual cash flows are solely payments of principal and interest (SPPI). IFRS 9 defines the principal as the fair value of the financial asset at initial recognition. On the other hand, interest consists of consideration for the time value of money, for the credit risk associated with the principal amount outstanding during a particular period and for other basic lending risks and costs, as well as a profit margin. (IASB, 2014c).

A financial asset shall be measured at amortised cost if both of the following conditions are met: (i) the financial asset is held within a business model whose objective is to hold

financial assets in order to collect contractual cash flows, and (ii) the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding. (IASB, 2014c).

Financial assets measured at FVOCI comprehend all those that meet both of the following conditions: (i) the financial asset is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets, and (ii) the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding. Moreover, at initial recognition, an entity may make an irrevocable election for particular investments in equity instruments to present subsequent changes in fair value in OCI. (IASB, 2014c).

Financial assets that are not measured at amortised cost or FVOCI shall be measured at FVTPL. Furthermore, at initial recognition, an entity may irrevocably designate a financial asset to be subsequently measured at FVTPL if doing so it eliminates or significantly reduces an accounting mismatch. (IASB, 2014c).

Moving to the financial liabilities, according to IFRS 9 (IASB, 2014c), they shall be classified as subsequently measured at amortised cost, except those classified as at FVTPL, which shall be subsequently measured at fair value. Moreover, an entity may, at initial recognition, irrevocably designate a financial liability as measured at FVTPL when the following conditions adopt:

- a) The designation eliminates or significantly reduces an accounting mismatch that would otherwise arise from measuring assets and liabilities or recognising the gains and losses on them on different bases;
- b) A group of financial assets, financial liabilities or both is managed, and their performance is evaluated on a fair value basis, in accordance to a documented risk management or investment strategy, and information about the group is provided internally on that basis to the entity's key management personnel or;
- c) A financial liability contains an embedded derivative that meets certain conditions.

Additionally, IFRS 9 (IASB, 2014c) determines that an entity shall present a gain or loss on a financial liability that is designated as at FVTPL as follows:

- a) The amount of change in the fair value of the financial liability that is attributable to changes in the credit risk of that liability shall be presented in other comprehensive income, and

- b) the remaining amount of change in the fair value of the liability shall be presented in profit or loss unless the treatment of the effects of changes in the liability's credit risk would create or enlarge an accounting mismatch in profit or loss. In this case, an entity shall present all gains or losses on that liability (including the effects of changes in the credit risk of that liability) in profit or loss.

When we compare the former standard (IAS 39) to the new one (IFRS 9), it is possible to see that no changes were introduced to the scope of the standard and on the classification and measurement of financial liabilities, except for the recognition of changes in own credit risk in OCI for liabilities designated as at FVTPL. Previously, IAS 39 required that all changes in the fair value of financial liabilities designated as at FVTPL were recorded in profit or loss, including the effects of changes in the own credit risk of such liability.

Moreover, according to IFRS 9 (IASB, 2014c), amounts presented in OCI shall not be subsequently transferred (recycled) to profit or loss. Nevertheless, the entity may transfer the cumulative gain or loss within equity, to the retained earnings account. Under IAS 39, both realised and unrealised gains or losses attributable to changes in own credit risk used to be presented in profit or loss. Therefore, it is another difference between the two standards.

2.1.3 The replacement of IAS 39: the phased completion of IFRS 9

IAS 39 used to set the requirements for classifying and measuring financial instruments. However, since its issuance, in 1999, IAS 39 had been considered difficult to comprehend and a rule-based standard, what motivated the users and any other interested party to ask the IASB to develop a new and principle-based standard, in order to improve decision usefulness for the external users by simplifying the requirements for financial instruments.

In 2005, the IASB and the FASB started working together towards a long-term objective of improving and simplifying the reporting for financial instruments, which resulted in the Discussion Paper "Reducing Complexity in Reporting Financial Instruments", published in March 2008. Focusing on the measurement of financial instruments and hedge accounting, the Discussion Paper identified several possible approaches for improving and simplifying the accounting for financial instruments. As the responses to the Discussion Paper indicated support for a significant change in the requirements for reporting financial instruments, in November 2008, the IASB added this project to its active agenda. (IASB, 2014c).

However, the global financial crisis made the IASB and the FASB reconsider the priority of the project in their discussions. In April 2009, in response to the feedback received on its work responding to the global financial crisis, and following the conclusions of the G20 leaders and the recommendations of international bodies such as the Financial Stability Board (FSB)¹², the IASB announced an accelerated timetable for replacing IAS 39.

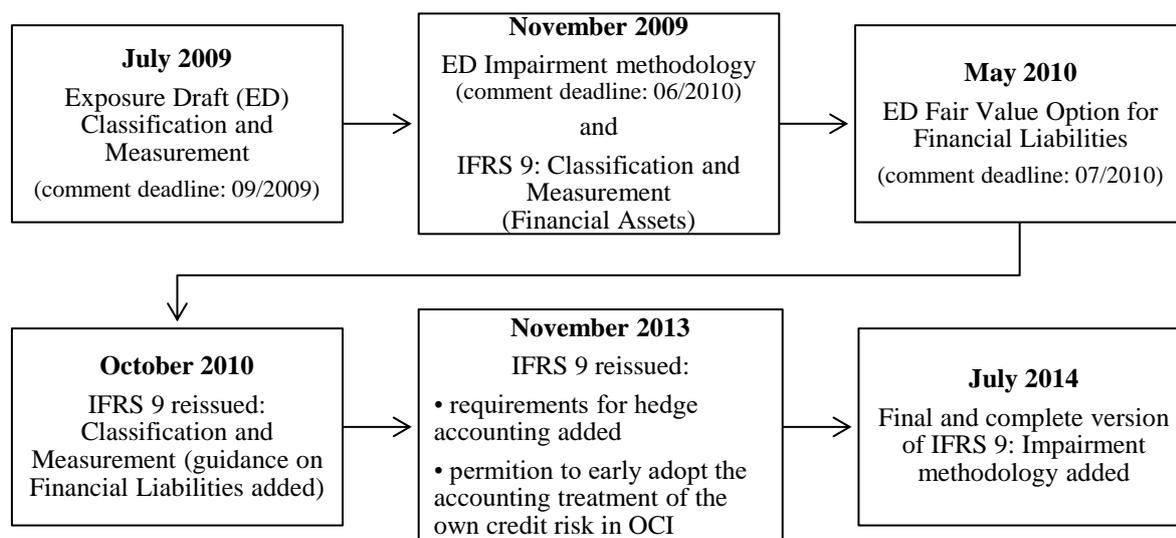
Thus, in order to accelerate the project and correct the consequences of the crisis, as quicker as possible, the IASB divided its project to replace IAS 39 into three main phases: (i) Classification and measurement of financial assets and financial liabilities, (ii) Impairment methodology, and (iii) Hedge accounting. As soon as each phase was concluded, the IASB created chapters in IFRS 9 that replaced the corresponding requirements in IAS 39.

The different ways to measure the financial instruments used to be considered by critics as one of the main reasons that add complexity in the standards. Thus, the consequences of the proposals on classification and measurement would be the basis for proposals on impairment methodology and hedge accounting, the reason why it was placed as the first phase.

In order to detail the review process of IAS 39, Figure 1 shows a timeline of the main steps followed by the IASB.

¹² The Financial Stability Board (FSB) is an international body that monitors and makes recommendations about the global financial system. It was established in April 2009 as the successor to the Financial Stability Forum (FSF). The Board includes all G20 major economies, International Financial Institutions and International Standard-Setting and Other Bodies.

Figure 1 – Main steps of IAS 39's review



Source: Prepared by the author, based on information from IAS Plus¹³.

In November 2009, the IASB issued the chapters of IFRS 9 related to the accounting treatment of financial assets. As previously mentioned, those chapters require financial assets to be classified and measured on the basis of the business model within they are held, and their contractual cash flows characteristics.

In October 2010, the requirements for financial liabilities were added to IFRS 9. Most of those requirements in IAS 39 were kept unchanged in IFRS 9, except for the recognition of changes in own credit risk in OCI for liabilities which were designated as at FVTPL on initial recognition. Such improvements were made in response to consistent feedback received from interested parties, asking the IASB that effects of changes in a liability's credit risk ought not to affect profit or loss unless the liability is held for trading. One of the reasons for such change in the accounting treatment is because the effect of the own credit risk is considered by the external users as counterintuitive and hard to understand.

Under the pressure of commentators, in November 2013, the IASB amended IFRS 9 to permit entities to early adopt the new requirements for the own credit risk of financial liabilities designated as at FVTPL without adopting the other requirements of IFRS 9 at the same time. Moreover, the IASB included the new general hedge accounting model.

Finally, after following all steps required by the IASB, to develop a new standard, and all stages being completed, IFRS 9 was issued in 2014, and it replaces IAS 39, being

¹³ Available on: <<https://www.iasplus.com/en/standards/ifrs/ifrs9>>. Retrieved on: 17/07/2018.

mandatorily effective for periods commencing on or after 1 January 2018, with early adoption permitted, which is subject to local endorsement requirements.

2.1.4 Fair Value Option: background

In 2003, the IASB concluded that it could simplify the IAS 39's application for some entities by permitting the optional use of fair value measurement for any financial instrument, which is known as the "fair value option" and can be applied to individual financial instruments selectively. The IASB aimed to allow firms to mitigate the volatility generated by the mixed measurement model of accounting, as certain financial assets or liabilities are mandated to be measured at fair value while others at amortised cost, and to better reflect inherent economic reality without using complex hedge accounting treatment.

Before the inclusion of such option, any financial instrument could be measured at fair value, with gains or losses recorded in profit or loss, only if it met the conditions for classification as held for trading.

After the inclusion of the fair value option, the revised version of IAS 39 permitted entities to designate irrevocably on initial recognition any financial instruments to be measured at FVTPL, with no reclassification permission.

Although some respondents suggested that entities could use the fair value option to recognise changes in fair value in profit or loss selectively, the IASB noted that the requirement, also included in IFRS 9, to designate irrevocably on initial recognition the financial instruments for which the fair value option is to be applied results in an entity being unable to "cherry pick" in this way. It is because no entity will know, at initial recognition, whether the fair value of the instrument will increase or decrease afterwards. (IASB, 2014a).

As a result of continuing discussions with constituents on the fair value option, the IASB became aware that some, including prudential supervisors of banks, securities companies and insurers, were concerned that such option could be misused. The main concerns were:

- a) entities might adopt the fair value option to financial assets or financial liabilities whose fair value is not verifiable. If so, because the valuation of these financial assets and financial liabilities is subjective, entities might determine their fair value in a way that inappropriately affects profit or loss.
- b) the use of the option might increase, instead of decreasing, volatility in profit or loss, for example, if an entity applied the option to only one part of a matched position.

- c) if an entity applied the fair value option to financial liabilities, it might result in an entity recognising gains or losses in profit or loss associated with changes in its own creditworthiness. (IASB, 2014a).

In response to such concerns, the IASB issued an exposure draft in 2004 proposing some restrictions. After discussions and round-tables meetings, the IASB issued an amendment to IAS 39, in June 2005, including some conditions to be met in order to designate a financial instrument at fair value through profit or loss. These are:

- a) the designation eliminates or significantly reduces a measurement or recognition inconsistency that would otherwise arise from measuring assets and liabilities or recognising the gains and losses on them on different bases;
- b) a group of financial assets, financial liabilities or both is managed, and their performance is evaluated on a fair value basis, in accordance to a documented risk management or investment strategy, and information about the group is provided internally on that basis to the entity's key management personnel or;
- c) a financial liability contains an embedded derivative that meets certain conditions.

According to the IASB (2014a), the ability for entities to use the fair value option simplifies the application of IAS 39 by mitigating some anomalies that result from the different measurement attributes, such as:

- a) it eliminates the need for hedge accounting for fair value hedges exposures when there are natural offsets, eliminating, as well, the related burden of designating, tracking and analysing hedge effectiveness.
- b) it eliminates the burden of separating embedded derivatives.
- c) it eliminates problems arising from a mixed measurement model when financial assets are measured at fair value, and related financial liabilities are measured at amortised cost. In particular, it eliminates volatility in profit or loss and equity that results when matched positions of financial assets and financial liabilities are not measured consistently.
- d) the option to recognise unrealised gains and losses on available-for-sale financial assets in profit or loss is no longer necessary.
- e) it de-emphasises interpretative issues around what constitutes trading.

In 2010, during the discussions about following classification and measurement of financial liabilities, for IFRS 9's purpose, the IASB concluded that no changes were required, as it was not changing the approach for financial liabilities already existing in IAS

39. Most of the respondents agreed with such proposal, and the IASB decided to carry forward to IFRS 9 the three eligible conditions in October 2010.

Regarding the own credit risk effects, in 2003 the IASB discussed the issue of including changes in the own credit risk of a financial liability in its fair value measurement. Commentators noted that it is not useful to report lower liabilities when an entity is facing financial difficulty, and it would be tough to explain to users of financial statements the reasons why there is an income recognition when a liability's creditworthiness deteriorates, suggesting that fair value should exclude such effects from its measurement.

Considering that the financial statements are prepared on a going concern basis, the value at which a financial liability could be repurchased or settled is affected by the credit risk. Therefore, for the IASB, it is inappropriate to include the credit risk in the initial fair value measurement of financial liabilities, but not subsequently. Moreover, entities realise changes in fair value, including the effects attributable to credit risk, by renegotiating, repurchasing or by using derivatives. Finally, the changes in the credit risk affect observed market prices, and they are not easy to be excluded from the observed price, from a practical standpoint. (IASB, 2014a).

Still, in 2003, the IASB also considered whether the changes attributable to credit risk should be presented in separate in the income statement or equity. In the end, the IASB decided to keep presenting the changes in fair value in the income statement and required disclosure to help identify how much of the change is attributable to changes in the own credit risk. Doing so, the IASB believed the users would be provided with information to help them to understand the profit or loss effect of changes in credit risk.

Over a long period, the IASB had been told that such changes should not affect the income statement, unless the liability is held for trading, because, in general, the entity does not realise the changes due to the own credit risk of its financial liabilities. Moreover, the volatility in the income statement, due to the own credit risk is seen as an effect that does not provide useful information, although the information regarding it can still be useful.

To respond such long-standing and widespread concern, in May 2010 the IASB proposed to present such effects in OCI. After discussing whether such accounting treatment would create or enlarge an accounting mismatch, the IASB set out an alternative approach, whereby the effects of changes in the liability's credit risk would be presented in OCI, unless such accounting treatment would create or enlarge an accounting mismatch, which has to be

assessed on the liability's initial recognition. As such alternative proposal was preferred by many respondents, the IASB included in IFRS 9 such accounting treatment.

Also, in 2010, the IASB proposed to prohibit reclassification of gains or losses to profit or loss on the derecognition of financial liabilities. Although many respondents disagreed with such a proposal, the IASB was not persuaded and confirmed the proposal to prohibit recycling. Therefore, when realised, such cumulative gains or loss must be transferred within equity, from accumulated other comprehensive income to retained earnings, being such amount disclosed in the notes.

As previously mentioned, under the pressure of commentators, in November 2013, the IASB amended IFRS 9 to permit entities to early adopt the new requirements for the own credit risk of financial liabilities designated as at FVTPL without adopting the other requirements of IFRS 9 at the same time.

In the accounting literature, most investigations are focused on financial assets, while financial liabilities have been neglected. (Gaynor et al., 2011). The reason why this investigation is important and relevant is because of the fact the financial liability's credit risk is used to determine the overall riskiness of the entity, identify whether an entity is in financial distress, and to help to estimate future financing costs. (van Veen, 2011).

Moreover, there is no consensus in the literature and among practitioners regarding the use of fair value option and that there are just a few studies focused on IFRS 9. Whereas Gaynor et al. (2011) and Lachmann et al. (2015) agree that credit risk effects must be presented in OCI, as these reported gains are unlikely to be realised, Gray (2003), Barth, Hodder et al. (2008), and Fiechter (2011) have the opinion that the effect must be recognised in profit or loss, as it has informative power about the entity's value and risk and better reflects real market changes.

Therefore, there is an opportunity to contribute to such a discussion, and this is precisely the purpose of this study. Before presenting the underlying theory used in this research and the development of my hypotheses, in the next section I present in more details why the own credit risk is seen as 'counterintuitive' for some, but intuitive for others that rely on the finance theory, in order to clarify the 'drama' behind this subject.

2.1.5 Fair value accounting and the 'counterintuitive' own credit risk effect

There are many studies on fair value estimates and fair value accounting (see Barth, Beaver, & Landsman, 2001 for a review). There are also some researches on the controversial question of whether to incorporate the effect of changes in firm's credit risk while measuring their financial liabilities at fair value (e.g., Barth, Hodder et al., 2008; Gaynor et al., 2011). For instance, Barth, Hodder et al. (2008) find evidence that equity investors understand those effects, and they reflect such effects in their valuation decisions. Gaynor et al. (2011) disagree with such view since in their experiment, 70 per cent of the participants incorrectly assess a company's credit risk as improving (deteriorating) when a fair value loss (gain) is recorded.

Barth (2018b) explains that although the inclusion of the own credit risk is consistent with finance theory, for some, such effect is counterintuitive. The reason for this is because an increase (decrease) in the firm's credit risk is deemed as being associated with a weaker (stronger) performance and the overall position of a firm, but the income effect is 'the other way around'. (Schmidt, 2018).

In order to explain the own credit risk effect, Barth (2018b) illustrates using as an example a firm with assets of \$1,000, debts of \$800, and equity of \$200. Assuming the asset value decreases by \$100, it means that impairing the asset to \$900, the firm recognises a loss of \$100. Since net income reflects changes in equity, it captures accounting performance pertinent to equity holders. However, the author emphasises that such a situation raises a question of whether the equity holders bear the entire \$100 loss in asset value or whether the debt holders share in it.

Under the Merton's (1974) model, equity can be viewed as a call option on the firm's assets with a strike price that is equal to the notional amount of debt. If the firm's assets exceed the notional amount of debt, equity holders will claim the residual. However, if the amount of debt exceeds the firm's assets, then the equity holders will need to forfeit their claim, and the debt holders will claim the residual, which is less than their notional claim in this scenario. Therefore, Merton's (1974) model shows that when an asset decrease, credit risk increases because of the increase in the probability of default, which causes a decrease in the liability value.

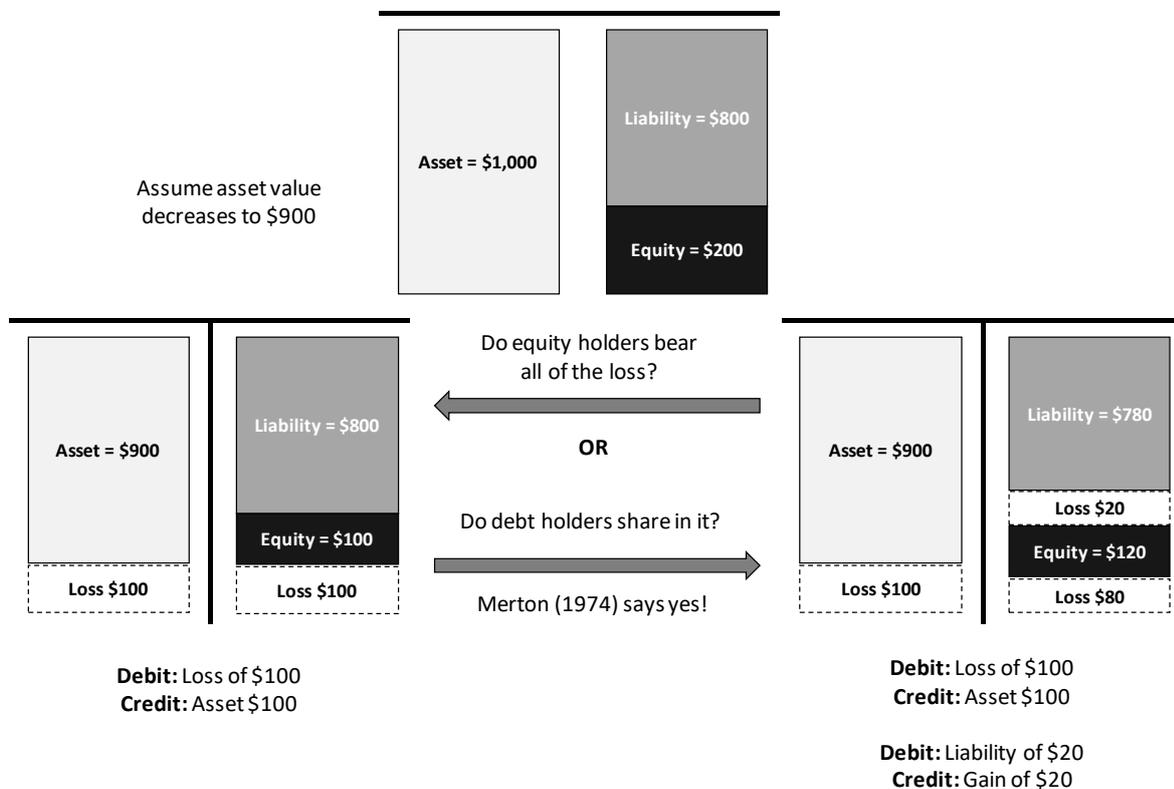
Schmidt (2018) explains that under the Merton's (1974) model, an increase (decrease) in firm value (firm's assets) results in two effects:

- a) Direct effect: an increase (decrease) in the market value of equity and
- b) Indirect effect: an increase (decrease) in the market value of the firm's debt.

The author mentioned above uses the rationale of the Merton's (1974) model to explain the indirect effect, saying that part of the change in asset value is absorbed by debt holders, and this absorption has a corresponding (additional) effect in the market value of equity. He adds that the indirect effect on the value of the firm's equity is in the opposite direction of the direct effect and partially offsets the direct effect.

Moving back to Barth's (2018b) example, she uses the rationale of Merton (1974) as background to explain the indirect effect and assumes that debt holders bear \$20 of the loss in asset value and equity holders bear \$80. In order to recognise these economic effects, the value of the debt is reduced to \$780, and equity is reduced by \$80, not \$100, as previously said. Thinking separately, the decrease in the debt value means a gain in the income statement, which seems counterintuitive. However, putting them all together, i.e. sharing the asset value loss between equity holders and debt holders, the net loss to equity holders of \$80 seems intuitive, Barth (2018b) concludes. Figure 2 illustrates the example given by the author.

Figure 2 - Recognising change in fair value of debt arising from a change in own credit risk

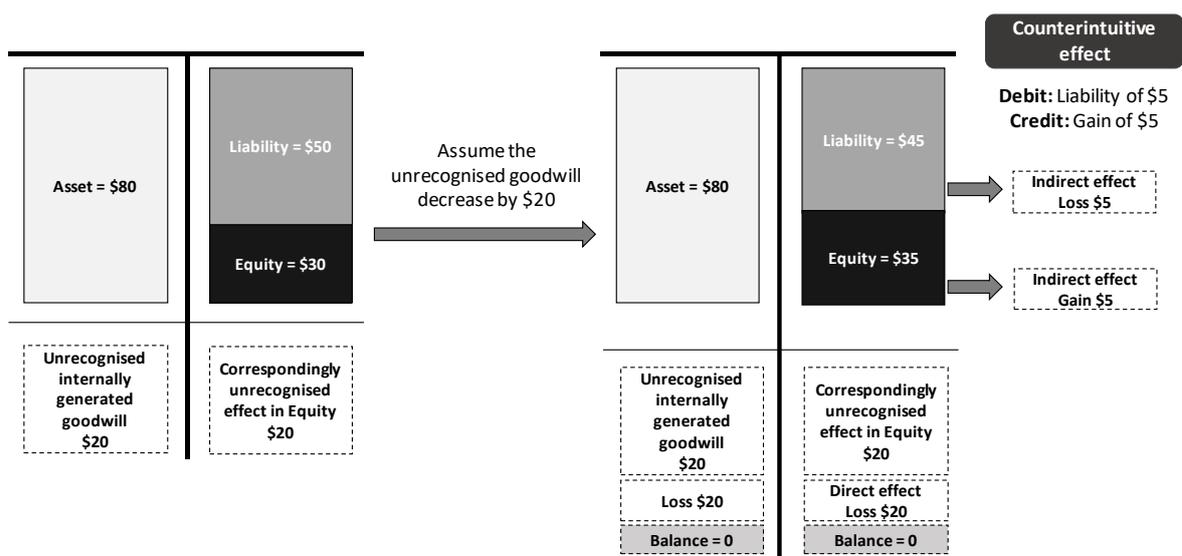


Source: Adapted from Barth (2018b).

Schmidt (2018) explains that the counterintuitive result of changes in firm's credit risk of financial liabilities measured at fair value is caused by the fact that one crucial assumption of the economic concept underlying Merton's (1974) model is not met in accounting: the firm's assets recorded on the face of the balance sheet do not depict the full entity value, because not all assets, including internally generated goodwill, are recognised. The author adds that some recognised assets are measured under the concept of "lower of cost or market" and, thus, their book value sometimes falls below the present value of future cash flows to be generated with that asset. Consequently, the book value of total recognised assets is lower than firm value, which correspondingly means that the book value of the residual claim on equity is lower than the market value of equity, he concludes.

Going one step further, Schmidt (2018) explains that the counterintuitive result of changes in the firm's own credit risk following from measuring financial liabilities at fair value occurs if the direct effect is not reflected in the financial statements. To illustrate such effect, he uses as an example an entity that has an asset value of \$80 and an unrecognised internally generated goodwill of \$20. The recognised debt value is \$50, and equity is \$30. Then, the author assumes that there is a decrease of \$20 in the internally generated goodwill. Figure 3 illustrates his example.

Figure 3 – Direct and indirect effect under the Merton's model following a decrease in unrecognised internally generated goodwill



Source: Adapted from Schmidt (2018).

Since there is no impairment loss recorded on the asset side, there is no direct effect recorded in the book value of equity. However, the indirect effect is recorded in the liability section, if such liability is measured at fair value. The reason for that is because the reduction in the goodwill increases the firm's risk. When we bring the future cash flows into present value, considering the new risk of the company, which increased, the liability decreases and a gain is recorded in the income statement (according to IAS 39) or other comprehensive income (under IFRS 9), affecting the book value of equity.

Schmidt (2018) concludes that the 'counterintuitive' direction of the income effect is consistent with the Merton's (1974) model: an increase in firm's credit risk is associated with a decrease in the debt value and an increase in the equity value. He adds that the effect is 'counterintuitive' not because it is false, but because of the inherent limitations of the accounting, since accounting is merely 'incomplete'.

After clarifying the effect in the financial statements emerged by the accounting treatment of the own credit risk, in the next sections, it is presented the theory used as background for the development of the study's hypotheses.

2.2 Accounting Choices Literature

Watts and Zimmerman (1990) assert that the "accounting theory's role is to provide explanations and predictions for accounting practice" (p. 148). The Positive Accounting Theory (PAT) is considered as the mainstream in accounting choices realm, as its central idea is to develop hypotheses about determinants that influence the world of accounting practices and to test the validity of such hypotheses empirically.

Research on accounting choices addresses a fundamental research question: does accounting matter? (Fields et al., 2001). For the efficient securities market theory, accounting policies adopted by firms do not have economic consequences¹⁴ if they are fully disclosed and they do not have effects on cash flow (Beaver, 1973). Furthermore, accounting is viewed as competing with other sources of information, for instance, news media and market price, and it will survive just if it is useful, timely, and cost-effective relative to other sources. (Scott, 2015).

¹⁴ Economic consequences happen when managers change accounting policies and/or change operating decisions in response to a change in accounting standards. (Scott, 2015).

The efficient securities market theory also alerts us that the primary reason for the existence of accounting is the information asymmetry, which occurs when some parties to business transactions may have an information advantage over others or may take actions which are not observable to others. (Scott, 2015). There are two types of information asymmetry: (i) the adverse selection, when some persons are better served with information about the business transaction than the others and (ii) moral hazard, when one or more parties to a contractual relationship take actions which are not observable to the other contracting parties.

In a world of an imperfect and incomplete market, the demand for accounting information and accounting regulation implies that accounting disclosure and accounting-based contracts are efficient ways of addressing such markets imperfections. (Fields et al., 2001). Hence, we can interpret accounting as a way to enable communication between who is inside and outside the entity, in order to eliminate or, at least, mitigate the information asymmetry.

In order to analyse the role of accounting information, first of all, we need to understand the definition of accounting choices. According to Fields et al. (2001), an accounting choice can be defined as any decision made whose primary purpose is to influence (either in form or substance) the accounting system's output in a particular way, including not only financial statements published according to GAAP, but also tax returns and regulatory filings.

As we can see, such definition is broad enough to include different measures and treatments, for instance. It is well-known that IFRS requires that judgement be made while preparing the financial statements. It means that lots of accounting choices can be made by the management personnel, including the choice to designate a financial liability as at FVTPL, and the timing of new standards' adoption, such as the new treatment of a firm's own credit risk of financial liabilities designated as at FVTPL under IFRS 9, which could be early adopted without adopting IFRS 9 entirely, early adopted if IFRS 9 was early adopted in full or mandatorily adopted for annual periods commencing on or after 1 January 2018.

The motivations for accounting choice are classified by Fields et al. (2001) in three categories, consistently with the classifications of Watts and Zimmerman (1986) and Holthausen and Leftwich (1983): contracting, asset pricing, and influencing external parties.

Accounting choice is determined to influence one or more of the entity's contractual arrangement, and this category is often termed the efficient contracting perspective. (Fields et al., 2001). The authors add that such contractual arrangements include management

compensation agreements and debt covenants, and have the primary function to alleviate agency costs¹⁵ by better aligning the incentives of the parties involved.

The second category is driven by information asymmetries and attempts to influence asset prices. Its primary focus is to overcome problems that arise when markets do not correctly aggregate individually held information. Therefore, accounting choice may provide a mechanism by which better-informed insiders can impart information to less well-informed parties about timing, magnitude, and risk of future cash flows. (Fields et al., 2001).

The last category is to influence external parties other than actual and potential owners of the firm, such as the government regulators, competitors, and union negotiators, for instance.

Managers' motives for the choice of accounting policies and their effects on contractual arrangements are explained by the Positive Accounting Theory (Watts & Zimmerman, 1986), which focuses on management's motives when there are significant enforcement cost for contracting, when markets are not perfect, and when there are political costs arising from regulation. Thus, accounting choice literature can be classified based on market imperfections: agency costs, information asymmetries, and externalities affecting non-contracting parties. (van Veen, 2011).

The Positive Accounting Theory predicts that the use of accounting numbers in compensation, debt contracts, and in the political process affects a firm's accounting choices. Most accounting choice studies uses combinations of three sets of variables: variables representing the manager's incentives to choose accounting methods under a bonus plan, those representing debt contracts, and variables representing the political process. Then, these three variables become three particular hypotheses (Watts & Zimmerman, 1990):

- a) The bonus plan hypothesis: managers of firms with bonus plan are more likely to choose accounting choices that increase current earnings, which presumably increase the present value of bonuses;
- b) The debt/equity hypothesis: predicts that the higher the debt/equity ratio is, the more likely managers use accounting choices to increase earnings, in order to avoid covenants violations and costs of technical defaults;

¹⁵ Agency cost is defined by Jensen and Meckling (1976) as the sum of: (i) the monitoring expenditures by the principal, (ii) the bonding expenditures by the agent, and (iii) the residual loss. The principal is the party that engage the agent to perform some service on his/her behalf.

- c) The political cost hypothesis: predicts that the larger the firms are, the more likely they are to use accounting choices that reduce reported earnings.

As seen, contracting is relevant to financial accounting, as contracts usually depend on accounting figures, such as reported earnings for management compensation, as well covenants as the debt-equity ratio or agreed times interest earned ratio for debt contracts.

By their nature, contracts are rigid, which means that they are hard to be changed. One of the reasons that justify this is that they tend to be long term. If they depend on accounting figures, changes in accounting standards can happen during the contract's life and can adversely affect the manager's compensation and increase the likelihood of a covenant's violation. Thus, it is apparent that changes in accounting standards matter to managers, particularly those accounting policies that can affect compensation and covenants, for instance.

The Efficient contracting theory studies the role of financial accounting information in moderating information asymmetry between contracting parties. According to Scott (2015), such theory takes the view that firms organise themselves most efficiently, to maximise their prospects for survival. The author adds that, ultimately, the objective of the theory is to understand and predict managerial accounting policy choice in different circumstances and across different firms, and how financial accounting can contribute to contract efficiency.

The Efficient contracting theory assumes that managers, like investors, are rational and they may be tempted to bias or otherwise manage reported earnings and working capital valuations if they perceive this to be for their benefit. Dichev and Skinner (2002) support this argument, as they provide empirical evidence which suggests that managers choose accounting policies to manage their covenants. Moreover, according to Christensen (2012), contracting may explain why some firms adopt IFRS voluntarily.

Regarding asset pricing, accounting choice literature examines the association between accounting figures and stock prices or returns, examining whether accounting policy choice affects equity valuation or the cost of capital. (Fields et al., 2001). Such studies have their roots in the study of Ball and Brown (1968)¹⁶. Fields et al. (2001) add that several forms can be taken to influence stock prices: managers may maximise earnings in a given period, smooth earnings over time, avoid losses, or avoid declines, among other forms.

¹⁶ Discussed in section 2.3.

According to Graham, Harvey, and Rajgopal (2005), managers believe that higher perceived volatility of earnings can hurt the firm's stock price and the assessment of the management's performance. The reason for that is because more volatile performance measures indicate higher firm risk. Moreover, the managers surveyed by them believed that more volatile earnings paths lead to lower credit ratings and higher risk premium. Therefore, volatile earnings numbers negatively affect the stock price. Consequently, it is a reason why executives have a strong preference for smooth earnings, which are perceived as less risky by investors. Furthermore, smooth earnings also improve the predictability of future earnings, which increases the stock price.

Finally, a firm's reported accounting figures indirectly affect the extent to which the firm is criticised or supported by stakeholders. For politically visible firms, reported accounting figures have economic consequences because changes in those figures change the likelihood of taxes being imposed or subsidies being granted, for instance. (Holthausen & Leftwich, 1983). Hence, managers of those firms have incentives to choose particular accounting policies, as well as to lobby for or against mandatory changes in accounting standards that alter their firm's political visibility.

2.2.1 Fair Value Option and Accounting Choices

Extant literature has discussed the determinants of accounting choices behind the option to designate financial instruments as at FVTPL using the Positive Accounting Theory as background. As presented below, most of the studies are concentrated in the United States of America (USA) and analyses the USGAAP's standards. No consensus has already been reached.

Putting together the fair value option and the accounting choices, Song (2008) examines what firm's characteristics are associated with a firm's decision to use the fair value option under SFAS 159. Being more specific, the author aims to check whether the fair value option is used as intended by the FASB (to mitigate earnings volatility and/or to simplify hedge accounting) or used opportunistically. The reason for this is the fact that SFAS 159 allows to report cumulative unrealised gains or losses in the beginning balance of retained earnings rather than earnings when the fair value option is elected, which provides an excellent opportunity for companies to restructure their loss portfolios without recording losses in earnings. His findings show that banks with loss positions in available-for-sale securities are

more likely to use the fair value option. Moreover, he finds that banks reporting quarterly earnings lower than benchmark earnings are more likely to apply the fair value option. Based on such findings, the author concludes that the determinants of using the fair value option are associated with opportunistic motivation, such as earnings management and restructuring portfolios.

Just a quick remark, to help understand Song's (2008) findings and other studies presented later on. According to the transition guidance of SFAS 159, if available-for-sale investments are designated as at FVTPL under the fair value option, gains or loss recorded in AOCI are transferred directly to retained earnings, without affecting the income statement, which could be a motivation for those with accumulated losses in securities with potential increase in the future.

In the same way as Song (2008), Henry (2009) examines firms that early adopted SFAS 159, and then rescinded or revised their early adoption, concluding that such reversals imply opportunistic use of the implementation provisions, which was an excellent opportunity to manage earnings by reclassifying losses to retained earnings, without reporting such losses in the income statement.

Chang et al. (2009, 2011) examine the determinants of the timing of and financial instruments involved in bank's fair value option elections upon their adoption of SFAS 159 of regular adopters and contrast these determinants with those of early adopters' initial fair value option elections. Using a sample of 312 US banks, the authors find that regular adopters adhere to the standard's intent, as the variables related to ineffective hedge accounting or accounting mismatch explain their option. Although *ex-ante* earnings volatility of a bank was one of the variables analysed and that a positive association with accounting mismatch was expected, their study does not provide evidence that such variable explains the decision to adopt SFAS 159.

Regarding early adoption, the authors above find evidence that the early adopters made their decision on an opportunistic way, in order to manage the financial statements and regulatory capital figures, which corroborates to the findings of previous literature (e.g., Song, 2008; Henry, 2009).

Furthermore, Chang et al. (2009, 2011) provide evidence that regular adopters made the fair value option election for loans held for sale and that such option remedied accounting mismatches. However, similarly to previous literature (e.g., Song, 2008; Henry, 2009), they

find evidence that early adopters elections were most frequently for available-for-sale securities and debt, whose elections exploited the standard's transition guidance.

Based on Henry's (2009) study of early adopting banks, Guthrie et al. (2011) examine to what extent firms' election of fair value option on a contract-by-contract basis benefited their current and future earnings. The authors do not find evidence of regular opportunistic election of the fair value option as found by the previous literature (e.g., Song, 2008; Henry, 2009). According to them, only handful cases, concentrated among early adopters with earnings shortfall, experienced a significant improvement in current and future earnings that casts doubts on whether their adoption was keeping with the intent and spirit of the standard. Therefore, they conclude that managing current and future earnings were at most a marginal factor in the firm's decisions whether to elect the use of the fair value option. Moreover, their results suggest that such election resulting in increments in current and future earnings were most prevalent among early adopters and smaller firms.

Cairns, Massoudi, Taplin, and Tarca (2011) investigate the use of fair value measurement by 228 listed companies in the UK and Australia around the adoption of IFRS in 2005, its impact on accounting policy choice, and the comparability of financial statements in both countries analysed. Regarding the use of the fair value option, the authors concluded that its election for financial assets and financial liabilities reduced comparability, although fair value might be more relevant.

van Veen (2011) investigates three related topics: (i) the accounting choices of European banks that use the fair value option, (ii) the disclosure quality of banks that apply the fair value option, and (iii) the influence of the change in treatment of fair value variations due to shift in credit risk, on the value relevance¹⁷ and volatility of the net income figure, during the years of 2007 to 2009. Using a sample of 167 European banks, the author finds evidence that the likelihood to use the fair value option is significantly negatively influenced by the volatility of earnings, which contrasts to Chang et al. (2009), who do not find evidence that such variable explains the decision to adopt SFAS 159, and significantly positively influenced by the leverage and size, which corroborates to Holthausen and Leftwich (1983).

Xu and Tang (2011) analyse the timing and the determinants of electing the SFAS 159 in the banking industry, separating the sample into three groups: early adopters, late adopters and non-adopters. Using a sample of 467 US listed banks, being 31 early adopters, 21 late

¹⁷ Discussed in the section 2.3.

adopters, while the remaining banks choose not to adopt the standard, they find evidence that early adopters, as well as late adopters, face greater earnings pressures, have fewer volatile earnings and larger size, and are active in hedging activities, when compared to non-adopters. Besides, late adopters have weak financial strength, less volatile earnings, and are more likely to be audited by non-Big four auditors, when compared to early adopters.

Although the primary objective of their study is to analyse the relationship between fair value measurement of securities under SFAS 115 - Accounting for Certain Investments in Debt and Equity Securities and information asymmetry among banks, Ball, Jayaraman, and Shivakumar (2012) also analyses the determinants for such accounting choice. Their findings are consistent with Chang et al. (2011), as banks with more loans held for sale and derivatives are more likely to adopt the fair value option under SFAS 159.

As previously seen, Henry (2009), Guthrie et al. (2011) and Chang et al. (2011) find only limited evidence of opportunistic adoption of fair value option among early adopters. The limited evidence is one of the motivations for the investigation carried out by Wu, Thibodeau, and Couch (2016), who consider that none of those above authors considered the peculiar relationship between the fair value option of financial liabilities and a firm's own credit risk.

In the context of the financial crisis of 2008, Wu, Thibodeau, and Couch (2013) examine how financial markets could have identified financially vulnerable firms earlier through fair value option of financial liabilities (FVOL). As FVOL is a free option that provides managers with a mechanism to disguise financial vulnerability when their own firm's credit risk increases, the authors examine whether firms would choose FVOL for this purpose. They argue that FVOL is a uniquely informative mechanism because it is a discrete and transparent choice and there is a relationship between a firm's fair value of liabilities and its own credit risk.

Examining whether adverse selection occurred among FVOL adopters and, if so, whether the stock market missed the distress signal embedded in the decision to adopt FVOL, the authors find that: (i) financially vulnerable firms are more likely to adopt FVOL (Wu et al., 2013, 2016); (ii) they exhibit ex post abnormal stock returns (Wu et al., 2013, 2016); and (iii) they are more likely to receive TARP¹⁸ bailout funds (Wu et al., 2013).

¹⁸ The Trouble Asset Relief Program (TARP) is a program of the USA government to stabilise the country's financial system, restore the economic growth, and to mitigate the effects of the financial crisis of 2008.

Therefore, their findings show that the market did not price the information revealed by the FVOL adoption.

Although the primary objective of their study is to analyse whether the adoption of FVO under SFAS 159 diminishes earnings volatility, Couch et al. (2017) also analyse the determinants for such accounting choice. Their findings show that the adoption of FVO seems mostly to be a function of Tier 1 capital level and the level of investments available-for-sale, which is consistent with Chang et al.'s (2011) findings.

Again, just a quick remark to help understand Couch et al.'s (2017) findings, while unrealised gains or loss of available-for-sale securities recorded in AOCI cannot be computed to Tier 1 capital, they could be added to Tier 1 capital when they are recorded in retained earnings. Thus, companies with unrealised gains in AOCI could be motivated to make the option to designate as at FVTPL financial assets previously recorded as available-for-sale, exploiting the standard's transition guidance that benefits the capital adequacy.

Additionally, Couch et al. (2017) find evidence that firms with more derivatives and loans held for sale are more likely to adopt the FVO, which is also consistent with Chang et al.'s (2011) findings. Such findings show that the difficulty in applying hedge accounting encourages firms to mitigate accounting mismatches using the fair value option.

Size is another significant and positive coefficient found by Couch et al. (2017), consistent with previous literature (Wu et al., 2016), which shows that the larger the firms are, the more derivatives and other financial instruments that may create accounting mismatch and earnings volatility they have, thus making them more likely to adopt the FVO.

Couch et al. (2017) focus on the use of fair value option for liabilities and find evidence that the firms are more likely to adopt such accounting choice in order to mitigate earnings volatility due to accounting mismatches or hedge earnings from an increase in credit risk which will consequently reduce earnings volatility.

As seen, most of the studies are concentrated in the USA and analyse the USGAAP's standards. Only van Veen (2011) discusses the effects of IFRS 9 and analysis the consequences of the change in the accounting treatment of fair value variations due to a shift in credit risk. In the best of my knowledge, there is no research about motivation to early adopt the new accounting treatment of the own credit risk of financial liabilities designated as at FVTPL without adopting IFRS 9 entirely. Therefore, there is a gap that this research intends to fulfil. For this intent, in the next section, it is presented the development of study's hypotheses.

2.2.2 Hypotheses development: own credit risk and accounting choices

Researching about more general financial reporting questions are of interest to global standard setters, for instance, such as the determinants of early adopting new accounting standards and the relevance of financial information provided by it. Because the IASB sets standards that are applied in many countries, accounting research addressing these topics based on different institutional settings that exist in different countries can provide insights that research focused on only a single country cannot provide. (Barth, 2018a)

Accounting choices can be considered of practical importance by management because it affects the relevance and usefulness of accounting information. (Stadler & Nobes, 2014). The literature has shown that the country, industry, and firm characteristics influence accounting policy choices. (e.g., Haller & Wehrfritz, 2013; Jaafar & McLeay, 2007; Stadler & Nobes, 2014).

Ball, Kothari, and Robin (2000) and Ball (2006) find evidence that institutional features influence accounting practice. Since institutional features vary across countries, research based on combining accounting information from multiple countries needs to control for these differences to avoid confounding the inferences. (Barth, 2018a). Among many potentially influential country factors, the legal system, the corporate financing system, and the relationship between tax and financial reporting were generally stressed. (Stadler & Nobes, 2014).

Regarding firm characteristics, those most often associated with accounting choices include size (e.g., Holthausen & Leftwich, 1983; Skinner, 1993), debt covenants (e.g., Holthausen & Leftwich, 1983; Gopalakrishnan, 1994; van Veen, 2011), and compensation arrangements (e.g., Healy, 1985; Bamber, Jiang, Petroni, & Wang, 2010).

Based on this framework, I analyse the influence of firm characteristics on IFRS policy choice, controlling for country effects, among others. To achieve this goal, this research relies on the Positive Accounting Theory (Watts & Zimmerman, 1986), on the Accounting Choices' studies (Fields et al., 2001), and on the political and economic forces that influence the accounting practice (Ball, Kothari, & Robin, 2000; Ball, 2006), in order to explain the behaviour of firms regarding the early adoption of the new accounting treatment of the own credit risk of financial liabilities designated as at FVTPL, under IFRS 9, without early adopting the standard entirely. According to Watts and Zimmerman (1990), "it is clear that there is a relation between firm's accounting choice and other firm variables". (p. 132).

Therefore, for this study, it was retained the classical variables issued from the positive's research, such as size, leverage and CEO's compensation.

The study retains the PAT as an explaining background because one of its main objectives is to explain firms' accounting choices linked by agency relationship and political cost (Watts & Zimmerman, 1990). As previously presented, several studies have provided empirical support on accounting choices based on a positive approach. (e.g., Couch et al., 2017; van Veen, 2011). Their results have generally evidenced that proxies such as size, leverage, ownership structure, management compensation can explain and predict accounting choices.

Economic consequences of accounting choices analysed by Watts and Zimmerman (1978) result from the following causal links between a firm's cash flows and reported accounting figures:

- a) Management compensation plans,
- b) Government regulations,
- c) Lending agreements and
- d) Political visibility.

Management compensation plans often allow managers to share profits over a target level, which is typically stated in terms of accounting figures (e.g., earnings) or measures based on them, such as ROE – Return on Equity, for instance. Therefore, management's wealth can be affected by voluntary or mandatory accounting choices if the compensation is not adjusted to offset them.

Watts and Zimmerman (1978) assert that managers select accounting procedures to maximise their utility. So, if the manager's compensation contracts are constituted by a bonus plan, that may affect the entity's accounting choices. Therefore, managers are encouraged to adopt accounting procedures that increase their compensation.

Going further, managers can respond to a mandatory change in accounting choices by adjusting investing and financing decisions in order to reach such target and reduce the probability of an unfavourable impact on their compensation payments. As far as such investing and financing decisions does not maximise the firm's value, the mandatory accounting change causes a change in the firm's value. Thus, changes in accounting rules have economic consequences, and there are incentives for managers to spend resources to change accounting principles voluntarily, or to lobby for or against proposed mandatory accounting rules changes. (Holthausen & Leftwich, 1983).

Previous literature (e.g., Healy, 1985; Bamber et al., 2010) argues that managers exercise accounting discretion to maximise the present value of their bonus compensation. According to managers interviewed by Graham et al. (2005), higher perceived volatility of firm performance could hurt the firm's stock price and assessments of the manager's performance.

ROE is a widespread measure in management compensation plans, which can be calculated in different ways. For this study, ROE is calculated as presented below:

$$ROE = \frac{Net\ Income}{Average\ Equity}$$

In cases of increase (decrease) in the firm's credit quality, liabilities at fair value rise (diminish) and a corresponding loss (gain) is recorded in the income statement, under IAS 39. Considering that a loss (gain) decreases (increases) net income, thus, might decrease (increase) ROE, as well as affect management bonuses, managers may not be motivated to early adopt the new accounting treatment of the own credit risk of financial liabilities designated as at FVTPL in OCI, under IFRS 9, when there are gains in the period. Therefore, the first hypothesis can be expressed as follows:

H1: Financial institutions with management bonus plans and positive fair value changes due to the own credit risk of financial liabilities designated as at FVTPL are less likely to early adopt the new accounting treatment of the own credit risk.

Regarding government regulations, federal, state and local governments and regulatory bodies restrict the activity of many firms using regulations that are based on accounting figures. For instance, banks must meet capital adequacy tests.

According to Paragraph 75 of "Basel III: A global regulatory framework for more resilient banks and banking systems", cumulative gains or losses due to changes in own credit on fair value financial liabilities are derecognised in the calculation of Common Tier 1. (BCBS, 2010). Therefore, whether the change in fair value due to the own credit risk of financial liabilities designated as at FVTPL is recorded in the income statement or other comprehensive income does not matter for Tier 1's intent. For this reason, it is not predicted

any relation between regulation and early adoption of the new accounting treatment of the own credit risk under IFRS 9.

Lending agreements impose restrictions on the activities of borrowers, and many of them are based on accounting figures. Changes in the rules used to prepare the financial statements affect restrictions in lending agreements, which may alter the probability of default on loans covenants. Consequently, mandatory or voluntary changes in accounting rules may affect a firm's cash flows or the value of various claims on them. Therefore, managers have incentives to lobby for or against mandatory changes in accounting rules, or to voluntarily make other changes. (Holthausen & Leftwich, 1983).

Contracts for both public and private debt include covenants that use accounting figures to restrict management's actions. A violation of a covenant is considered a default and it provides the lender with the right to take actions usually associated with a default. A default on a debt contract is costly, thus, contracts that define a breach in terms of accounting figures provide managers with incentives to choose accounting procedure that reduce the probability of a breach. (Watts & Zimmerman, 1986). The authors add that if a breach is going to occur under one accounting method, managers would have the motivation to switch procedures to avoid such a breach.

The debt hypothesis of Watts and Zimmerman (1990) asserts that "the higher the firm's debt/equity ratio, the more likely managers use accounting methods that increase income". (p. 139). Fields et al. (2001) add that, in general, researchers conclude that their results suggest that incentives work: managers select accounting methods to increase their compensation and to reduce the probability of debt covenant violations. Therefore, the higher the firm's indebtedness, the more likely to early adopt the new accounting treatment of the own credit risk of financial liabilities designated as at FVTPL, when the effect of the own credit risk is adverse, in order to increase the income of the period. This leads to the second hypothesis:

H2: Financial institutions with higher leverage and negative fair value changes due to the own credit risk of financial liabilities designated as at FVTPL are more likely to early adopt the new accounting treatment of the own credit risk.

Much of the prior studies on accounting choice is conducted within the framework of three popular contracting cost hypotheses: political costs, debt contracting and compensation

hypotheses. (Stent, Bradbury, & Hooks, 2017). Size is a common proxy for political costs. (e.g., Watts & Zimmerman, 1978; Holthausen & Leftwich, 1983; Fields et al., 2001; Missonier-Piera, 2004; Quagli & Avallone, 2010).

Under the assumption that politicians want to maximise their utility, the political process is a competition for wealth transfers, as taxes and regulations transfer wealth to individuals via government services (e.g., education, highways), for instance. Accounting figures are used, for example, in setting price controls, in setting rates (public utilities) and to regulate the quantity and type of service offered to society (banking). Therefore, to the extent that a given firm is subject to potential wealth transfers in the political process, it is hypothesised that managers have incentives to adopt accounting policies that reduce the transfer. (Watts & Zimmerman, 1978).

Moreover, as previously said, a firm's reported financial information indirectly affect the extent to which the firm is either criticised or supported by stakeholders. For politically visible firms, reported accounting figures have economic consequences, and their managers have incentives to choose particular accounting procedures. (Holthausen & Leftwich, 1983). The authors add that companies that have high political visibility are more likely to choose income-decreasing techniques. This size hypothesis is based on the assumption that larger firms are more politically sensitive and have relatively more massive transfers of wealth imposed on them (political costs) than smaller firms. (Watts & Zimmerman, 1978).

Watts and Zimmerman (1978) add that management faces a trade-off among alternative accounting policies. This is because the procedure that is optimal for political or regulatory reasons may not be optimal for management compensation and debt contracts purposes. Hence, opposing predictions are expected, as for management compensation and debt/equity hypotheses we expect that managers would choose accounting policies that increase earnings, while for political visibility purpose they would pick the one that reduces earnings.

Considering the subject of this research, the own credit risk of FVOL, when the firm's credit risk increases (decreases), the debt diminishes (enlarges) and a gain (loss) is recorded in the income statement. Taking into account the size hypothesis, it is predicted that management would choose to early adopt the new accounting treatment of the own credit risk of financial liabilities designated as at FVTPL when there is a gain recorded in the period. Therefore, such gain would be recorded in other comprehensive income and, in the end, the goal to reduce net income would be reached. This assumption leads to the third hypothesis:

H3: Larger financial institutions with positive fair value changes due to the own credit risk of financial liabilities designated as at FVTPL are more likely to early adopt the new accounting treatment of the own credit risk.

Going further, Watts and Zimmerman (1978) assert that the political process creates incentives to reduce the variance of reported earnings changes. Firms with higher earnings volatility are perceived as riskier, and the market becomes more sceptical of underlying cash flows when earnings are volatile. (Graham et al., 2005). The authors add that the stock market values earnings predictability, therefore, the earnings volatility can hurt the firm's share price and the assessment of the manager's performance. Consequently, the CFOs surveyed by Graham et al. (2005) prefer a smoother earnings path, even if the underlying cash flows are the same.

Economically connected positions tend to offset changes in the fair value of each other. However, if one position is measured at amortised cost whereas the other at fair value, the income statement does not correctly reflect the opposite changes in fair value. This is why the use of the fair value option leads to a consistent measurement of such economically connected positions. The opposite effects in the income statement eliminate or, at least, mitigate any artificial earnings volatility¹⁹.

However, even though both sides are presented at fair value, there might still be an asymmetry in recognition of gains and losses of assets and liabilities in the financial statement. To illustrate that, suppose an entity issues debt and hedge it using a derivative. According to IFRS 9 (IASB, 2014c), derivatives are always measured at FVTPL, unless it is treated according to hedge accounting rules.

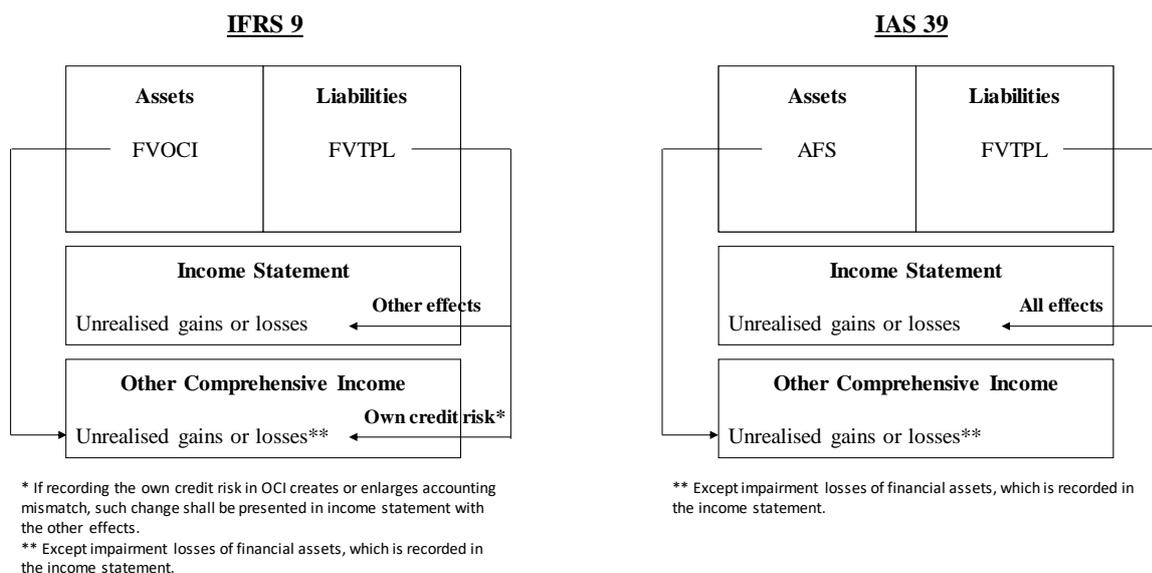
In order to reduce an accounting mismatch, at the inception date, the liability could be designated as at FVTPL. If it is done, derivatives will affect income statement, changes in the debt's fair value due to other reasons than the firm's own credit risk would affect income statement as well, while the changes due to the firm's own credit risk would be recorded in OCI, which might result in an accounting mismatch. However, the own credit risk is treated in OCI unless the treatment creates or enlarges an accounting mismatch in the income statement. If so, an entity shall present all gains or losses on that liability (including the

¹⁹ Under the mixed measurement model of IFRS 9 (i.e. some financial instruments are measured at amortised cost whereas others are measured at fair value through profit or loss), economically hedged positions may be measured differently. This so-called accounting mismatch induces artificial earnings volatility.

there is no mismatch in terms of measurement, there is a ‘geographical’ recognition mismatch.

Comparing both treatments for the second situation presented above, whether applying the requirements of IAS 39 and IFRS 9, Figure 5 illustrates the recognition mismatch. Therefore, artificial earnings volatility is not entirely eliminated or, at least, mitigated.

Figure 5 - Accounting treatment of financial assets FVOCI²⁰ and liabilities FVTPL



Source: Prepared by the author

As seen, although IFRS 9 introduced changes in the classification of financial assets and in the way the own credit effects are recorded, fair value option remains to solve the measurement mismatch. However, it might continue causing an asymmetry in recognition of gains and losses of assets and liabilities in the financial statements, and may not be representative of the risk inherent in the bank’s financial position, depending on how the asset is accounted for.

According to Barth, Hodder et al. (2008), the own credit risk can change due to changes in the value or risk of the entity’s assets and due to changes in financing risk or leverage. Therefore, credit risk can vary every year, which means that the effect of the own credit risk creates variability in net income, which might lead to a volatile reported net income figure.

²⁰ According to IAS 39, financial assets measured at fair value through other comprehensive income used to be labelled as available-for-sale (AFS).

Such volatility is one of the reasons the interested parties asked the IASB to change the accounting treatment of the own credit risk's effects of financial liabilities designated as at FVTPL from net income to OCI. Thus, the primary goal of the IASB, for the proposed IFRS 9, was to increase the decision usefulness (value relevance) and to reduce the volatility of the net income figure.

Considering that earnings volatility can hurt the firm's share price and the assessment of the manager's performance, which might affect their compensation, executives might have incentives to remove the fair value changes attributable to changes in firm's credit risk of financial liabilities designated as at FVTPL from net income. Moreover, taking into account that earnings volatility is one of the reasons why constituents put pressure on the IASB to change the accounting treatment of the own credit risk and to permit its early adoption without early adopting IFRS 9 entirely, it is predicted that financial institutions with higher earnings volatility in the period prior to their early adoption of the new accounting treatment of the own credit risk are more likely to early adopt such new accounting treatment. This assumption leads to the fourth hypothesis:

***H4:** Financial institutions with higher earnings volatility are more likely to early adopt the new accounting treatment of the own credit risk.*

Considering the second example (Figure 5), which analyses the effects of financial liabilities designated as at FVTPL and financial assets as at FVOCI (according to IFRS 9) and available-for-sale (according to IAS 39), it is expected that firms which do not use the exception to treat the own credit risk's effect in profit or loss tend not to have changes in fair value of financial assets as at FVTPL being offset by changes in fair value of this specific liability as at FVTPL, as well. Recording the effect of the firm's own credit risk in OCI offsets partially the volatility created by the financial assets as at FVOCI/AFS. For this reason, it is predicted that financial institutions that have higher volatility in gains or losses attributable to changes in fair value of financial assets classified as available-for-sale in the period before their early adoption of the new accounting treatment of the own credit risk are more encouraged to early adopt such new accounting treatment. This prediction leads to the fifth hypothesis:

H5: Financial institutions with higher volatility in available-for-sale unrealised gains or loss are more likely to early adopt the new accounting treatment of the own credit risk.

Finally, I examine the voluntary adoption of the new accounting treatment of the own credit risk of financial liabilities designated as at FVTPL under IFRS 9 of financial institutions. I focus only on financial institutions in order to isolate any industry-specific effects, in the same way as done by Couch et al. (2017). Further details about the research design are presented in Section 3.

2.3 Value Relevance Literature

According to Scott (2015), if the efficient markets theory and the decision theories underlying it are reasonable descriptions of reality on average, it would be observable the securities' market values responding in predictable ways to new information.

Information is useful if it leads investors to change their beliefs and actions. The degree of such usefulness to investors can be measured by the extent of volume or price change following the information release. (Scott, 2015).

Empirical accounting research has established that securities' market prices do respond to accounting information. Therefore, if there is a predicted association with equity market values, an accounting amount is defined as value relevant. (Barth et al., 2001).

According to Scott (2015), the first significant evidence of this security market reaction to earnings announcements was provided by Ball and Brown, in 1968. In the same year, using a different approach, Beaver (1968) also contributes to such a discussion. Since then, several studies have documented additional aspects of value relevance (e.g., Barth et al., 2001; Ahmed, Kilic, & Lobo, 2006; Barth, Landsman, Young, & Zhuang, 2014).

Because net income is an amount of particular interest to investors, the outcome that Ball and Brown (1968) use as a predictive criterion in the investment decision as it is reflected in security prices. For them, if security prices do adjust rapidly to new information as it becomes available, then changes in securities prices will reflect the information flow to the market. Therefore, an observed revision of shares prices associated with the release of the income report would provide evidence that the information reflected in such figure is useful.

Beaver (1968) also contributed to such discussion, however, with a different approach. His study directs its attention to investor reaction to the earnings announcement, as reflected in the trading volume and price movements of ordinary shares in the weeks surrounding the announcement date. For the author, if the earnings announcement is value-relevant, it must induce a change in the decision-maker's behaviour, who might buy more shares or sell some or all of them. Therefore, such a change in behaviour is expected to be reflected in the volume of shares traded. His findings show a dramatic increase in volume during the week the earnings were announced.

The value relevance literature is comprehensive and diverse. The studies vary in the accounting's perspective, market assumptions, and research methods applied, among others. Francis and Schipper (1999) consider four possible interpretations of the construct value relevance. Details about each possible interpretations and previous literature connected to each of them are summarised in Figure 6, which follows.

Figure 6 – Interpretations of Value Relevance as defined by Francis and Schipper (1999)

Interpretation	Description	Previous literature
(i) Fundamental analysis view	Involves determining a firm's intrinsic value without reference to the price at which the firm's equity trades on the stock market. According to this approach, accounting information cause stock prices to change by capturing values toward which market prices drift. This approach allows for an inefficient stock market.	Bernard, Thomas, and Wahlen (1997); Chan et al. (1996); Sloan (1996); Fama and French (1992); Lakonishok et al. (1994).
(ii) Prediction view	It focuses on the relevant variables to be used in valuation and how to predict them. According to this approach, information is relevant if it can be used to predict future earnings, dividends, or future cash flows.	Ou and Penman (1989); Skogsvik (2002); Lev and Suogiannis (1996); Dumontier and Raffournier (2002).
(iii) Information view	Under the assumption that the stock market is efficient, statistical association measures are used as indicators as to whether investors use the information in question when making investment decisions. This approach implies that accounting information has value relevance if the stock market reacts upon the disclosure of it.	Ball and Brown (1968); Beaver (1968); Foster (1976); Pope and Inyangete (1992); Beaver (1997).
(iv) Measurement view	Under this construct, the value relevance of financial statement information is measured by its ability to capture or summarise information, regardless of source, that affects equity value.	Marton (1998); Dumontier and Raffournier (2002); Barth et al. (2001).

Source: Adapted from Francis and Schipper (1999); Nilsson (2003); Flores (2016).

It is interesting to note that from the perspective of Francis and Schipper (1999), the four interpretations mentioned above can be combined in specific situations, building contexts that contemplate more than one interpretation simultaneously.

The volume of researches has intensified over the last decades, which provided different results and confusions. Regarding this fact, Lo and Lys (2000) emphasise that considerable confusion remains on the methodologies to conduct such studies and how to interpret the results. Using such a situation as a background, the authors classify in three approaches the studies that investigate the implications of accounting disclosure for security prices, which are summarised in Figure 7.

Figure 7 - Approaches of Value Relevance as defined by Lo and Lys (2000)

Approaches	Description	Previous literature
(i) Information content studies	An announcement has information content if it leads to price changes in excess of the amount due to the passage of time (i.e., expected returns). This definition makes only non-directional predictions.	Beaver (1968)
(ii) Valuation relevance studies	The relation between accounting information and the evolution of prices over time, as a process, is the central theme of this approach.	Ball and Brown (1968)
(iii) Value relevance studies	This approach typically examines the association between market values and accounting summary measures such as earnings and book values.	Harris et al. (1994); Frankel and Lee (1998); Barth et al. (1998).

Source: Adapted from Lo and Lys (2000)

According to Lo and Lys (2000), when we compare the above approaches, we can see that the information content approach looks at the disclosed information's entirety, whereas the valuation relevance approach examines identifiable items. They add that because of the aggregative nature of the information content approach, the test must necessarily be non-directional, contrasting to the valuation relevance approach, which can be either directional or non-directional. Regarding the value relevance approach, Lo and Lys (2000) state that the critical difference is that this approach allows only very weak inferences concerning the causality when compared to the valuation relevance approach.

In 2001, with the aim to critically evaluate the standard-setting inferences that can be drawn from value relevance studies, Holthausen and Watts made an overview of the value relevance literature. The authors classify the value relevance studies into three categories, based on the methodology applied to them, which are summarised in Figure 8.

Figure 8 – Categories of Value Relevance as defined by Holthausen and Watts (2001)

Category	Description	Previous literature
(i) Relative association studies	Compare the association between stock market values (or changes in values) and alternative bottom-line measures (e.g., an association of earnings number with/ without an effect of interest with stock market values or returns). These studies usually test for differences in R^2 of regressions using different earnings numbers. The accounting number with the greater R^2 is described as being more value-relevant.	Dhaliwal, Subramanyam and Trezevant (1999); Harris, Lang, and Moller (1994); Pope and Rees (1993).
(ii) Incremental association studies	Investigate whether the accounting number of interest helps explain value or returns given other specified variables. The variable is considered value-relevant if its estimated regression coefficient is significantly different from zero.	Aboddy (1996); Barth, Beaver, and Landsman (1992); Barth and Clinch (1998).
(iii) Marginal information content studies	Investigate whether a particular accounting number adds information to investors. They typically use event studies to determine if the released information is associated with changes in values.	Amir, Harris, and Venuti (1993); Beaver, Christie, and Griffin (1980); Vincent (1999).

Source: Adapted from Holthausen and Watts (2001)

Holthausen and Watts (2001) add that there are three basic valuation models used in value relevance studies: balance-sheet model, earnings model and Ohlson model. The authors label as a balance-sheet model the valuation model in which the market value of equity equals to the market value of assets minus the market value of liabilities. In the earnings model, earnings are assumed informationally linked to future cash flows or valued directly. Consequently, in such model, stock market rates of return, or equity values, are regressed on (i) components of earnings and/or earnings components changes or (ii) earnings and/or earnings changes. Finally, the Ohlson model indicates that, given a dividend valuation model and a clean surplus accounting, the share price can be written as a linear function of earnings and book value of equity.

After presenting the different constructs value relevance, approaches, categories, valuation models, and considering that the hypotheses intend to analyse whether there is an increase in the association between accounting figures and market values, in my point of view, this study connects to the fourth interpretation of the construct value relevance proposed by Francis and Schipper (1999), in which relevance is addressed under a measurement view. Regarding the approach, I consider that this study is a value relevance study, according to the proposal made by Lo and Lys (2000). In terms of methodology, this study connects to the relative association, according to Holthausen and Watts (2001). About the valuation models, this study relies on the Ohlson model.

Finally, whereas Holthausen and Watts (2001) conclude that value relevance research offers little or no insight for standard setting, Barth et al. (2001) offer another point of view. For the latter authors, although financial statements can be used for a variety of applications beyond equity investment (e.g., debt contracting and management compensation), the possible uses of financial statements do not diminish the importance of value relevance research, which focuses on equity investment. The key conclusion of them is that the value relevance literature provides fruitful insights for standard setting, as the primary focus of financial statements is equity investment. Therefore, standard setters have an interest in the value relevance researches and this study can help providing evidence on the value relevance of the new accounting treatment of the own credit risk of financial liabilities designated as at FVTPL, as prescribed by IFRS 9, whose existing literature is still incipient and has provided mixed conclusions (e.g., Barth, Hodder et al., 2008; van Veen, 2011; Chung et al., 2017).

2.3.1 Fair Value Option and Value Relevance

As mentioned by Hodder, Hopkins, and Wahlen (2006, p. 340), “income measurement is a central function of accounting and is controversial”. Nowadays, two different measures of income have been applied: net income and comprehensive income. Both measures include unrealised fair value gains or losses with financial instruments.

The option to designate financial instruments as at fair value through profit or loss (“fair value option”) was introduced by the IASB in 2003, in IAS 39, and in 2007 by the FASB, in SFAS 159 (ASC 825). Therefore, the literature evaluating the value relevance of financial instruments earlier to those years used to compare the value relevance of different measures of income, and whether the fair value estimates of financial instruments are priced by the capital markets.

Criticizing previous literature for not providing strong evidence on value relevance of assets fair value estimates, Barth (1994) investigates how disclosed fair value estimates of bank’s investment securities and securities gains and losses based on those estimates are reflected in share prices compared with historical costs. She uses as sample only firms in the banking industry, in order to avoid cross-sectional differences in sample firms. Her findings indicate that fair value securities gains and losses’ combined relevance and reliability to investors is marginal, but whether the problem is relevance or reliability is not determinable

from the reported results. However, the author states that investment securities' fair value estimates are sufficiently relevant and reliable to be reflected in share prices, although fair value securities gains and losses are not.

In 1991, the FASB issued SFAS 107 – Disclosures about Fair Value of Financial Instruments, extending existing fair value disclosure practices by requiring all entities to disclose the fair value of financial instruments recognised and unrecognised in the statement of financial position. Soon after SFAS 107 was issued, Barth, Beaver, and Landsman (1996) investigated the value relevance of fair value disclosures under SFAS 107. In contrast to previous literature, their findings show evidence that the fair value estimates disclosed under SFAS 107 provide significant explanatory power for bank share prices beyond that disclosed by book values for three (securities, loans and long-term debt) of the five major asset and liability categories disclosed.

Although the FASB generally followed the all-inclusive income concept, occasionally the board issued standards²¹ requiring the treatment of changes in assets and liabilities directly in equity, bypassing the income statement (dirty surplus). Because the number of comprehensive income items bypassing the income statement increased, some financial statements' users expressed their concerns and urged the FASB to implement the concept of comprehensive income, which was consolidated in the standard SFAS 130 – Reporting Comprehensive Income, in 1997.

As soon as the standard above was introduced, Dhaliwal, Subramanyam, and Trezevant (1999) investigated the claim that income measured on a comprehensive basis is a better measure of firm performance than other summary income measures by testing the value relevance of comprehensive income and net income. Moreover, the authors examine in details which components of other comprehensive income improve income's ability to summarise firm performance. Their findings show no clear evidence that comprehensive income is on average more value-relevant than net income.

Going one step further, the analysis of components of other comprehensive income made by the authors mentioned above demonstrate that only the gains and losses related to marketable securities improve the association between income and returns, whose finding is driven by the financial sector firms.

²¹ Statements that contain those exceptions are: (i) FASB Statements N° 12, Accounting for Certain Marketable Securities, (ii) N° 52, Foreign Currency Translation, (iii) N° 80, Accounting for Futures Contracts, (iv) N° 87, Employers' Accounting for Pensions, and (v) N° 115, Accounting for Certain Investments in Debt and Equity Securities. (FASB, 1997).

Dhaliwal et al.'s (1999) study is deeply criticised by Skinner (1999) for not providing exciting or surprising results, due to a lack of a more precise delineation of the economic rationale for their tests and predictions. For the latter author, comprehensive income would seem to be relatively less useful to users since it comprises items that have few, if any, implications for the company's future earnings and cash flows.

Using as a background the discussion of the FASB and the IASB on whether to record fair value gains and losses on a complete set of financial instruments, Hodder et al. (2006) evaluate how well three measures of income volatility represent commercial bank risk. For this intent, they construct a measure of a full-fair-value income and compare it to net income and comprehensive income. Based on a sample of 202 commercial banks over 1996-2004, their findings suggest that full-fair-value income volatility reflects elements of risk that are neither captured by volatility in net income nor by comprehensive income. Furthermore, the former volatility relates more closely to capital market pricing of that risk than either the latter ones.

In 1998, the FASB issued SFAS 133 – Accounting for Derivative Instruments and Hedging Activities as a response to significant hedging losses involving derivatives in prior years. The FASB's objective is to provide an integrated accounting framework for derivative instruments and hedging activities. Focusing on the recognition and disclosure of derivatives, and having as a background the introduction of SFAS 133, Ahmed et al. (2006) investigate the value relevance of banks' derivative financial instruments held for risk management purposes and provide evidence on how investor valuation of such instruments differs depending upon whether the fair value of them is recorded or only disclosed. Using a sample of banks that simultaneously recorded and disclosed the fair value of derivatives before SFAS 133, their findings demonstrate that investors consider, while pricing shares, the recognition of such derivatives. Furthermore, using a sample of banks that have only disclosed derivatives before SFAS 133, the authors find that the disclosure is not value-relevant, but the recognition becomes value-relevant after the derivatives started being recorded under SFAS 133.

Because unrealised gains and losses recorded as components of OCI and special items recorded in net income are often viewed as similar in nature (i.e., transitory items with little ability to predict future cash flows and minimal implication for valuation purpose), but treated in accounting differently, Jones and Smith (2011) compare other comprehensive and

special items²² gains and losses in general, which include effects of financial instruments, in order to analyse the value relevance, predictive value, and persistence of them. They use a sample of 236 companies and find evidence that both gains and losses are value-relevant, but special items gains and losses do not show persistence (they are transitory), whereas other comprehensive gains and losses exhibit negative persistence (they are partially reversed over time). Furthermore, special items gains and losses have strong predictive value to forecast both future net income and future cash flows, whereas other comprehensive gains and losses have weaker predictive power.

In 2002, the European Union adopted IFRS as the required financial reporting standards for the consolidated financial statements of all listed European companies, effective in 2005. Using the adoption in Europe as a background, Barth et al. (2014) investigate whether the adjustments to net income due to the mandatory adoption of IFRS in Europe are relevant to investors. Using a sample of 1,201 financial and non-financial firms in 15 European countries, the authors find evidence that such adjustments are relevant, although the extent to which they differ for financial and non-financial firms, for adjustments associated with individual standards, and across significant country groups. Focusing on financial instruments, their findings show that adjustments due to IAS 39 adoption is value-relevant to financial firms. This findings suggest that financial firm's investors view net income measured according to IAS 39 as more value-relevant than the domestic standards, even though it might contain estimation errors and managerial discretion that many believe diminish the value relevance of net income that results from its application.

The fair value option was introduced by SFAS 159 – The Fair Value Option for Financial Assets and Financial Liabilities, in 2007. Soon after, Song (2008) investigates the value relevance of unrealised gains or losses recorded in profit or loss due to the fair value option. His findings show that market participants price unrealised losses, but unrealised gains are not. Furthermore, he finds that gains or losses due to the fair value option are not priced when banks report earnings higher than earnings benchmark by using fair value option gains.

Because value relevance literature attributes the lack of value relevance to a lower degree of reliability induced by information asymmetry and measurement error, information

²² Special items are those infrequent and unusual gains and losses that are separately reported in net income, whether realised or not, which are coded as special items (SI) by Compustat. They include gains and losses from sales of assets and investments, unrealised impairment write-offs, and realised or unrealised restructuring charges, merger costs, settlements, and other accrued items. (Jones & Smith, 2011).

asymmetry studies are also included in the study's literature review. Analysing the fair value of financial instruments under USGAAP, Ball et al. (2012) examine the relation between information asymmetry and fair value accounting under SFAS 115 in banks. Particularly, paying attention to financial assets held for trading, their findings show that fair value accounting increased bid-ask spreads for banks with trading securities compared to those without them. The same result was obtained when the fair value option for financial assets and financial liabilities were analysed.

Similarly, Schneider and Tran (2015) investigate the relationship between the use of fair value option for liabilities under IAS 39 and information asymmetry across investors as reflected in bid-ask spreads. Using a sample of financial firms for 2006-2010, their findings show that banks using the fair value option exhibit lower bid-ask spreads, when compared to non-adopters, which diverge to the findings of Ball et al. (2012), and might be explained by the differences in the adoption dates between IAS 39 and SFAS 159. SFAS 159 became effective in the middle of the financial crisis and may have evoked different types of adopters, some of which might have used the fair value option in an opportunistically way, as evidenced by Henry (2009).

The objective of the IASB for the IFRS 9 was to increase the decision usefulness of financial statement information for the external users, and decision usefulness relates primarily to the reported earnings amount. Investors are particularly interested in the net income number, and such number is considered as value-relevant when it can affect share prices, as previously mentioned.

The extant literature has shown that accounting information is value-relevant. Although the findings regarding the value relevance of fair value changes of financial instruments are mixed, in most cases they are value-relevant.

The fair value measurement of financial liabilities has been long debated, and the literature has also provided mixed results (e.g., Lipe, 2002; Barth, Hodder et al., 2008; Henry, 2009; Fiechter, 2011; Guthrie et al., 2011). However, the literature debating the value relevance of the own credit risk of financial liabilities designated as at FVTPL is still incipient.

Barth, Hodder et al. (2008) is a seminal study investigating the effects of changes in credit risk on the values of the firm's debt and equity. The authors examine whether equity value changes associated with credit risk changes are attenuated by debt value changes associated with the credit risk changes, as predicted by Merton (1974). Using a sample of

49,081 observations²³, they provide descriptive evidence on the effects on the firm's net income of recording presently unrecognised changes in debt value. Consistent with prior literature, they find that equity returns are significantly negatively related to changes in credit risk. Going further, they find that the relation between the credit risk change and equity returns is significantly less harmful when the firm has more debt, confirming Merton's (1974) prediction.

The study carried out by Barth, Hodder et al. (2008) has two debatable issues: (i) on the one hand, the authors use as credit risk proxy the credit rating built by rating agencies, which may lack predictability, as demonstrated by the financial crisis in the last decade and (ii) on the other hand, the Merton's model (1974) relies on market prices, whereas Barth, Hodder et al. (2008) use assets book value to replace asset market price. Moreover, since firms did not record gains and losses from liabilities in profit or loss during their sample period, they were unable to directly test the value relevance of fair value gains and losses from liabilities.

Couch and Wu (2016) analyse the stock returns following the adoption of SFAS 159 by financial firms, during the financial crisis, after the media accusation that large banks adopted the fair value option for financial liabilities to disguise financial vulnerability. Their findings show that firms which adopted the fair value option for financial liabilities exhibit *ex-post* negative abnormal returns, firms that are financially vulnerable are more likely to adopt the fair value option for financial liabilities, and that adopters are more likely to receive TARP bailout funds.

Chung et al. (2017) examine the economic implications of fair value liability gains and losses arising from the adoption of SFAS 159. Consistent with the notion that gains and losses contain value-relevant information, their findings show a positive relation between such gains and losses and current period stock returns.

Going further, the authors above decompose the fair value changes into two separate components: fair value changes attributable to changes in the firm's own credit risk and fair value changes attributable to factors other than changes in firm's own credit risk. Their findings suggest that the fair value attributable to changes in the firm's own credit risk is value-relevant, corroborating to the Barth, Hodder et al.'s (2008) findings.

Finally, in order to examine whether investors understand the valuation implications of the liability gains and losses by investigating the association between this earnings

²³ Authors eliminate firms in utilities, financial services, and real estate industries because they have different capital structures when compared to those of other firms.

component and future returns, Chung et al. (2017) find evidence indicating that investors overreact to this earnings component, mainly in those firms that have low institutional ownership.

Shedding light on the proposal presented on the Exposure Draft IFRS 9: Fair Value Option for Financial Liabilities, which recognises the fair value changes due to changes in the own credit risk of financial liabilities designated as at FVTPL in OCI rather than in the net income, van Veen (2011) examines the influence of the change in such treatment on the value relevance of the net income figure in European banks that adopt IFRS, covering the years of 2007 to 2009. She hypothesises that the value relevance of the net income number significantly increases after recording the fair value changes due to the own credit risk in OCI rather than in the income statement. Using a sample of 36 European banks, her findings indicate that after eliminating fair value changes due to the own credit risk out of the income statement, the value relevance is not increased, which rejects her predictions.

This study extends van Veen's research in the following aspects: (i) the sample is more significant and comprises international banks that apply IFRS; (ii) this study directly test the value relevance of the own credit risk, since the data is collected after the new accounting treatment was adopted and might corroborate to her hypothesis, which was based on the objective of the IASB for the proposal of a new accounting treatment of the own credit risk of financial liabilities as at FVTPL, and (iii) I apply more robust statistics valuation models and tools.

Since relevance and usefulness are some of the arguments to remove the fair value gains or losses arising from changes in the own credit risk from net income, a question that arises is: is net income more relevant after banks started presenting such gains or losses in OCI?

This research attempts to provide direct evidence on whether fair value changes of financial liabilities due to change in the firm's own credit risk provide value-relevant information, as Barth, Hodder et al. (2008) and Chung et al. (2017) have suggested. In particular, I examine how the market reacts to the new accounting treatment of the own credit risk of financial liabilities designated as at FVTPL, analysing the value relevance of net income after the mandatory adoption of IFRS 9. Such evidence is notably relevant given the lack of studies shedding light on the fair value of financial liabilities (Gaynor et al., 2011), and given to many assertions that the accounting for fair value liabilities is flawed (Chung et al., 2017).

2.3.2 Hypotheses development: own credit risk and value relevance

The objective of the IASB for the IFRS 9 was to provide relevant and useful information to users of financial statements for their assessment of the amounts, timing and uncertainty of a firm's future cash flows, in order to give support to their decisions. Therefore, there is a special relationship between relevant and useful information and the reported income figures.

The reported net income is a figure of particular interest for investors and its relation with share prices has been widely examined for decades. Barth, Li, and McClure (2017) describe how the relationship between share price and accounting information has evolved. Their findings show that the value relevance of accounting information does not decrease over time. Although the value relevance of earnings has decreased, such decrease is more than offset by the net increase in value relevance of other accounting figures. Furthermore, the authors find that more accounting amounts have become value-relevant over time, and conclude that such findings are consistent with a more complex relation between accounting information and share price.

This study attempts to provide direct evidence on whether reported fair value liability gains and losses provide value-relevant information, which is a topic that still has a lack of studies, and to contribute for this still fruitful discussion. Being more specific, I examine to what extent the new accounting treatment of the own credit risk of financial liabilities designated as at FVTPL is priced by the investors.

Many users and others told the IASB over a long period that changes in a liability's credit risk ought not to affect profit or loss unless the liability is held for trading. The reason for that is because an entity generally will not realise the effects of changes in the liability's credit risk unless the liability is held for trading. (IASB, 2014a). Therefore, the realisation of such gains and losses is seen as more hypothetical than actual, as such gains and losses, for those commentators, are substantially reversed before they are realised, which means that they are not expected to impact future earnings.

Furthermore, IFRS 9 prohibits reclassification of such gains or losses from OCI to profit or loss. For the IASB, if the entity repays the contractual amount, the cumulative effect over the life of the instrument of any changes in the liability's credit risk will net to zero because its fair value will equal the contractual amount. In specific cases, when the effects of changes

in the credit risk are realised, the entity may transfer the cumulative gain or loss within equity, from AOCI to retained earnings. (IASB, 2014a).

Previous studies have shed light on the counter-intuitiveness of recording fair value gains or losses attributable to changes in the firm's credit risk in profit or loss (e.g., Lipe, 2002; Gaynor et al., 2011), being some authors concerned about the possibility that managers can exploit the fair value option of liabilities for opportunistic reasons (e.g., Guthrie et al., 2011; Henry, 2009). However, Barth, Hodder et al. (2008) explain that the misleading financial statement effects of recording fair value changes due to changes in credit risk derive from incomplete recognition of assets and asset value changes, not from recording debt value changes. For the authors, their results indicate that debt value changes are candidates for inclusion in firms' profit or loss, contradicting the opinion of Lipe (2002) and Gaynor et al. (2011), for instance.

Regarding the value relevance of fair value gains and losses attributable to changes in the firm's credit risk, extant literature is still incipient and has provided mixed evidence. For Barth, Hodder et al. (2008) and Chung et al. (2017), the fair value gains and losses due to changes in the firm's credit risk are value-relevant. On the other hand, van Veen (2011) provides evidence that removing the effect of fair value changes due to changes in the firm's credit risk of financial liabilities from net income does not change the value relevance of such figure, which suggests that the fair value changes due to changes in the firm's credit risk are not value-relevant.

Considering that (i) the objective of the IASB to change the accounting treatment of the fair value changes attributable to changes in the firm's credit risk was to increase decision usefulness and decrease volatility, by recording such gains or losses in OCI, rather than in the income statement, (ii) stock market investors are more likely to prefer a current operating performance approach, under which the company reports a figure that is closer to 'core earnings' (i.e., excludes transitory earnings components), in order to help them in predicting future cash flows/earnings based on earnings that persist into future periods (Skinner, 1999), (iii) the value relevance of earnings might be depressed when applying fair value accounting due to a higher portion of unexpected earnings, including, for instance, transitory gains and losses (Beisland, 2009), such as the gains or losses attributable to changes in the firm's credit risk, and (iv) investors receive confusing signals when fair value gains or losses attributable to credit risk are presented in the income statement (e.g., Lipe, 2002; Gaynor et al., 2011), it

is predicted that the value relevance of the net income figure increases after the adoption of IFRS 9. These lead to the following hypothesis:

H6: The value relevance of the net income figure significantly increases after recognising changes in fair value attributable to changes in own credit risk in other comprehensive income rather than in the income statement, due to the mandatory adoption of IFRS 9.

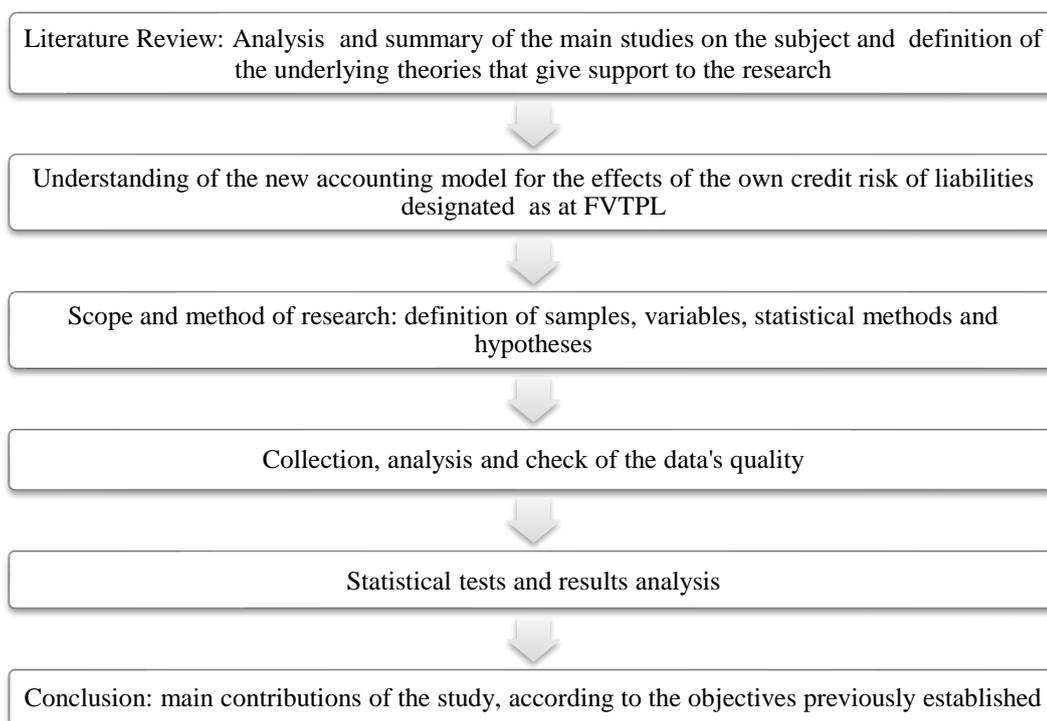
Based on this hypothesis, it is predicted that when the own credit risk of financial liabilities designated as at FVTPL is treated in OCI rather than in net income, the net income figure becomes more value-relevant.

The tests are based on reported figures at a particular point in time for each firm mandatorily adopting IFRS 9. As a result, the study permits to assess more directly the effect of IFRS 9's application on the incremental value relevance of the net income figure and to examine whether the change in the location where gains and losses attributable to changes in the firm's credit risk are recorded matters to investors.

3 RESEARCH DESIGN

This research has an empirical-analytical approach, with an archival strategy, since I use archival data as the primary source of data and I apply quantitative methods to analyse them. In order to examine the new accounting model for the effects of changes in a liability's credit risk, the economic motivation for its early adoption and, also, its economic effects, the study is developed according to the following stages, summarised in Figure 9.

Figure 9 – Research design



Source: Prepared by the author

This research applies a cross-country approach, with the aim to have enough firms that apply the fair value option for financial liabilities and have early adopted the new accounting treatment of the fair value changes attributable to changes in the firm's credit risk, in order to apply the statistics methods chosen for the study's analysis, following the approach used by Fiechter (2011).

Because the study analyses all financial institutions that have financial statements prepared according to IFRS and have liabilities designated as at FVTPL, statistical methods used have their results limited to this population and cannot be generalised to other financial institutions not included in the database.

The use of operational variables in scientific work is meaningful because it excludes possible ambiguities in the understanding of how the variables are dealt in the study so that all persons involved have the same understanding about the treatment in question. The sample, all variables and statistics models applied in this study, which give support to the hypotheses previously developed, are presented in the following sections. All data used in the study is hand-collected or extracted from Orbis/Orbis Bank Focus and Bloomberg databases, in order to avoid inconsistencies among so many different sources of information.

3.1 Own credit risk and accounting choices: sample selection and data analysis

In this section, I present the details about the sample selection and the models used to analyse the data regarding the accounting choice to early adopt the new accounting treatment of gains or losses attributable to changes in firm's credit risk of financial liabilities designated as at FVTPL.

3.1.1 Sample selection

The primary sample consists of all financial institutions around the globe that apply IFRS and have financial liabilities designated as at FVTPL, which yields a more homogeneous sample, in terms of industry. This investigation focuses on the financial sector because (i) the fair value option under IFRS 9 can be applied only to financial instruments, (ii) the financial statements of financial institutions contain significantly more financial instruments than the other industries, and (iii) the financial sector demonstrated more interest in the accounting treatment of fair value changes attributable to changes in the firm's credit risk of financial liabilities designated as at FVTPL during the standard-setting process.

Moreover, according to Fiechter (2011), in 2006, three years after the fair value option was introduced in IAS 39, 68 out of 222 international banks (30.6 per cent) were applying the fair value option to their liabilities. However, the mean (median) amount of financial liabilities designated as at FVTPL was considerably higher than the amount of financial assets designated, despite the small number of entities choosing such option.

In order to start this investigation, I used the database Orbis Bank Focus to identify all international financial institutions that are active, that applied IFRS to prepare their financial statements in 2017, and have financial liabilities designated as at FVTPL.

The early adoption of the accounting treatment of fair value changes attributable to the own credit risk became available in November 2013. However, the EFRAG only endorsed IFRS 9, to be applied in Europe, at the end of 2016. Since this database contains many European financial institutions, this study could be only carried out on the years of 2016 and 2017²⁴, in order to have all the financial institutions able to decide in regards to early adopting or not the new accounting treatment of the own credit risk.

With the aim to construct the sample, I started with 453 financial institutions that adopt IFRS and have a nonzero amount in the variable labelled by Orbis Bank Focus as “Financial liabilities at fair value through P&L (fair value portion of debt)”, from a total of 6,506 active financial institutions that apply IFRS, which represent 7 percent of the total financial institutions available in such database. The next step was to remove all financial institutions which I confirmed that were consolidated in another financial institution already considered in the sample. Thus, I took care to confirm that every firm is only once included in the investigation. In total, 132 financial institutions were removed from the sample.

According to the Orbis Bank Focus’s criteria, the account “Financial liabilities at fair value through P&L (fair value portion of debt)” is used for both fair value option and hedge accounting. Therefore, all financial reports had to be read, in order to segregate only the firms that use the fair value option for their liabilities, which is the focus of this investigation. After doing this, I removed all financial institutions that do not apply the fair value option or whose financial statement was not bright enough to get such a conclusion. In total, other 83 firms were eliminated.

Since some financial reports were not available on the internet or they are only available in a language that I am not able to understand (e.g., Chinese and Korean), I had to eliminate other 41 firms. Up to this moment, the analysis resulted in a sample of 197 financial institutions from 38 different countries. At the end of 2017, their average amount recorded as financial liabilities designated as at FVTPL is USD 12,368 million, which represents 4 per cent of their Total Assets.

I hand-collected the main variable of interest, the fair value gains or losses attributable to changes in the firm’s credit risk. After reading all reports, I confirmed that 43 firms out of 197 firms early adopted the new accounting treatment of the own credit risk of financial liabilities designated as at FVTPL, which represent 21.8 per cent. Table 1 summarises firms

²⁴ The year of 2017 is the last year that IFRS 9 could be early adopted, since it is mandatorily effective for annual periods beginning on or after 1 January 2018.

that adopt the fair value option to financial liabilities (FVOL) per country and the early adopters per year and country, since the new treatment of the own credit risk became available in IFRS 9, in November 2013.

Table 1 – FVOL and early adopters per country and year

N	Countries	2013	2014	2015	2016	2017	Total Early adopters	Total FVOL per country	% Early adopters per country	% FVOL per country
1	Armenia						0	1	0.00%	0.5%
2	Australia		3			1	4	6	66.7%	3.0%
3	Austria				1	1	2	7	28.6%	3.6%
4	Belgium					2	2	4	50.0%	2.0%
5	Canada			1			1	5	20.0%	2.5%
6	China				1		1	22	4.5%	11.2%
7	Colombia				1		1	1	100.0%	0.5%
8	Denmark						0	6	0.00%	3.0%
9	Finland						0	2	0.00%	1.0%
10	France				2		2	15	13.3%	7.6%
11	Germany				1	1	2	6	33.3%	3.0%
12	Hungary						0	2	0.00%	1.0%
13	Iceland						0	1	0.00%	0.5%
14	Ireland						0	1	0.00%	0.5%
15	Italy					3	3	27	11.1%	13.7%
16	Latvia						0	1	0.00%	0.5%
17	Liechtenstein						0	1	0.00%	0.5%
18	Luxembourg						0	3	0.00%	1.5%
19	Malaysia						0	4	0.00%	2.0%
20	Netherlands				4		4	7	57.1%	3.6%
21	New Zealand	1	1				2	2	100.0%	1.0%
22	Nigeria						0	1	0.00%	0.5%
23	Norway						0	7	0.00%	3.6%
24	Philippines						0	1	0.00%	0.5%
25	Poland						0	1	0.00%	0.5%
26	Portugal						0	2	0.00%	1.0%
27	Rep. of Korea						0	8	0.00%	4.1%
28	Russian Fed.						0	2	0.00%	1.0%
29	Slovenia						0	1	0.00%	0.5%
30	South Africa						0	1	0.00%	0.5%
31	Spain						0	4	0.00%	2.0%
32	Sweden						0	3	0.00%	1.5%
33	Switzerland				2		2	8	25.0%	4.1%
34	Taiwan		1	5		4	10	17	58.8%	8.6%
35	Turkey						0	2	0.00%	1.0%
36	Ukraine						0	1	0.00%	0.5%
37	Un. Arab Emirates			1			1	2	50.0%	1.0%
38	United Kingdom				2	4	6	12	50.0%	6.1%
	Total	1	5	7	14	16	43	197	21.8%	100.0%
	% Total Early adopters	2.3%	11.6%	16.3%	32.6%	37.2%	100.0%	#	#	#

Based on Table 1, it is possible to see that the fair value option of financial liabilities is more commonly used in Italy, with 27 firms (which represent 13.7 per cent of the sample), followed by China, with 22 firms (11.2 per cent), Taiwan, with 17 firms (8.6 per cent), and France, with 15 firms (7.6 percent).

Regarding the early adoption of the new accounting treatment of fair changes attributable to changes in firm's credit risk, they are mainly concentrated in the years of 2016 and 2017 (14 and 16 early adopters, respectively). Moreover, most of the firms that early adopted in those two years are located in Europe. Here we can see clearly the impact of the EFRAG's delay in endorsing IFRS 9 to be applied in Europe. As soon as it was endorsed, 12 European firms early adopted in 2016, followed by more 11 firms in 2017. Such delay might have effectively halted the motivation and/or opportunistic elections by possible early adopters.

With respect to the effect of the own credit risk recorded in OCI, in the first year of early adoption of each financial institution, 29 out of 43 financial institutions reported losses (67.4 per cent), 13 reported gains (30.2 per cent) and just 1 firm reported zero effect (2.3 per cent), which is a Chinese bank that early adopted IFRS 9 entirely in 2016.

Among the 43 early adopters, two firms early adopted IFRS 9 entirely, being one of them from Switzerland and the other from China (aforementioned), both in 2016. Since one of the objectives of this study is to analyse those companies that early adopted only the new treatment of the own credit risk of financial liabilities designated as at FVTPL, the two firms that early adopted IFRS 9 entirely were removed from the sample. Moreover, all early adopters before 2016 were removed (13 firms), since the analyses can only be carried out in the years of 2016 and 2017, as previously mentioned.

While collecting data from Orbis Bank Focus, one of the companies was no longer available on the database, the reason why it was removed from the sample. Moreover, whereas hand-collecting data from the financial statements, I noticed that not all firms have their closing period on the last day of the year. In order to keep comparable firms, in terms of closing periods, other seven firms were removed from the sample. The objective here is to have equal fiscal-year ends to make sure that all data from the financial institutions in this sample are affected by the same market conditions.

Due to the lack of available information and to the fact that one of the study's objectives is to analyse the value relevance of financial information, I focused only on listed companies. Accordingly, all unlisted and delisted companies were removed from the sample, which corresponds to 91 companies.

After taking all these steps, only three early adopters remained in 2016, while 13 remained in 2017. Due to the small number of early adopters in 2016, the focus of this study

was changed, and only the early adopters in 2017 were analysed. Therefore, more three firms were removed from the sample.

While collecting data from Orbis/Orbis Bank Focus for both analyses (accounting choices and value relevance), 15 financial institutions had to be removed from my sample, due to missing data. Therefore, after taking all these steps, the final sample comprises 65 firms, being 13 early adopters and 52 non-adopters. Table 2 summarises all steps followed to define the final sample.

Table 2 – Sample definition

Full Sample	453
(-) Banks consolidated in another bank already in the sample	(132)
(-) Banks which do not apply FVO to liabilities or the financial statement is not bright enough to make such a conclusion	(83)
(-) Financial statements not available/ not available in English/French/Italian/Portuguese	(41)
(-) Early adopters of IFRS 9 entirely	(2)
(-) Early adopters in the period of 2013 to 2015	(13)
(-) A firm no longer available on the database	(1)
(-) Firms without the closing period on December 31	(7)
(-) Unlisted/delisted firms	(91)
(-) Listed early adopters in 2016, due to change in the study's focus	(3)
(-) Missing data	(15)
(=) Final sample	65

Finally, the characteristics of the final sample of early adopters and non-adopters are summarised in Table 3 and Table 4, respectively:

Table 3 – Characteristics of the early adopters

N	Financial institution	Country	Specialisation
1	Banca Monte dei Paschi di Siena SpA- Gruppo Monte dei Paschi di Siena	Italy	Commercial banks
2	Banco BPM SPA	Italy	Commercial banks
3	Barclays Plc	UK	Bank holdings
4	Chang Hwa Commercial Bank Ltd.	Taiwan	Commercial banks
5	Commerzbank AG	Germany	Commercial banks
6	Dexia SA	Belgium	Bank holdings
7	HSBC Holdings Plc	UK	Bank holdings
8	KBC Groep NV/ KBC Groupe SA	Belgium	Bank holdings
9	Lloyds Banking Group Plc	UK	Bank holdings
10	Raiffeisen Bank International AG	Austria	Commercial banks
11	Royal Bank of Scotland Group Plc (The)	UK	Bank holdings
12	Sinopac Financial Holdings	Taiwan	Bank holdings
13	Taishin Financial Holding Co., Ltd	Taiwan	Bank holdings

Based on the details presented in Table 3, it is possible to see that the early adopters in 2017 are mainly bank holdings (8 firms, which represent 61.5 per cent of the sample) and from Europe (10 firms, which represent 76.9 per cent of the sample).

Table 4 – Characteristics of the non-adopters

N	Countries	Commercial banks	Bank Holdings	Other	Total	% Non-adopters per country
1	Austria		1		1	1.9%
2	China	8		5	13	25.0%
3	Denmark	2			2	3.9%
4	France	2		1	3	5.8%
5	Germany	1			1	1.9%
6	Italy	3	1	2	6	11.5%
7	Malaysia	1	1		2	3.9%
8	Netherlands	2	2		4	7.7%
9	Norway		1		1	1.9%
10	Poland		1		1	1.9%
11	Portugal	1			1	1.9%
12	Rep. of Korea	1	2		3	5.8%
13	Russian Fed.	1			1	1.9%
14	South Africa		1		1	1.9%
15	Spain	3			3	5.8%
16	Sweden	1			1	1.9%
17	Switzerland		2		2	3.9%
18	Taiwan		4	1	5	9.6%
19	Un. Arab Emirates			1	1	1.9%
Total non-adopters		26	16	10	52	100%
% Total non-adopters		50.0%	30.8%	19.2%	100%	#

Based on the details presented in Table 4, the sample of non-adopters is mainly comprised by firms from China (25.0 per cent), Italy (11.5 per cent), and Taiwan (9.6 per cent). In terms of specialisation, they are mainly commercial banks (50 per cent) or bank holdings (30.8%). The firms classified as others are those whose specialisation is classified as investment banks or cooperative banks, for instance, and they represent 19.2 per cent of the final sample of non-adopters.

3.1.2 Logistic Model to test Hypotheses H1 to H3

I test the hypotheses using cross-sectional multivariate logistic regression models in which the dependent variables are dichotomous variables indicating two distinct types of adopters: (i) the early adopters in the year of 2017, which take the value of one, and (ii) the regular adopters, which take the value of zero, since they did not early adopt the new treatment of the own credit risk. Logit models are appropriate when attempting to model a

binary dependent variable, and they have been widely used in previous studies of accounting choices (e.g., Chang et al., 2011; van Veen, 2011; Xu & Tang, 2011; Wu et al., 2016).

Prior researches (e.g., Demaria & Dufour, 2007; Chang et al., 2011; van Veen, 2011; Wu et al., 2016) indicate that the following firm's characteristics can affect the accounting choices made by firms: (i) financial leverage, firm's size, and CEO's compensation, among others. As a consequence, the following variables and regression models are used to examine the determinants for early adopting the new requirements for the own credit risk of financial liabilities designated as at FVTPL without early adopting IFRS 9 entirely.

The model used to test hypotheses H1 to H3 is expressed in equation (1), which analyses the determinants explained by the Positive accounting theory, controlled by firm-specific characteristics, as well as institutional and macroeconomic factors.

$$ADOPT = \beta_0 + \beta_1 ROE_i + \beta_2 LEV_i + \beta_3 SIZE_i + \beta_4 NEGOCR_i + \beta_5 POSOCR_i + \beta_6 ROE_i * POSOCR_i + \beta_7 LEV_i * NEGOCR_i + \beta_8 SIZE_i * POSOCR_i + Controls_i \quad (1)$$

ADOPT is a dummy variable equal to one when the financial institution early adopted the new accounting treatment of the own credit risk, and zero otherwise. *ROE* is the return on equity, a proxy commonly used to measure management compensation plans since such plans are often tied to reported accounting performance (Watts & Zimmerman, 1990; Fields et al., 2001). Watts and Zimmerman (1978) state that managers select accounting procedures to maximise their utility. So, if the manager's compensation package comprises a bonus plan, that may affect the firm's accounting choices, with the aim to adopt procedures that increase their compensation. The variable is measured considering the net income scaled by the average book value of equity at the end of the period before the early adoption.

LEV is the financial leverage, a proxy commonly used to investigate the debt hypothesis, measured as a ratio of total debts to total assets at the end of the period before the early adoption. *SIZE* is a proxy commonly used for political visibility (Fields et al., 2001), measured as the natural logarithm of total assets at the end of the period before the early adoption. *NEGOCR* (*POSOCR*) is a dummy variable equal to one when the financial institution recorded negative (positive) changes attributable to changes in firm's credit risk at the end of the period before the early adoption of the new accounting treatment under IFRS 9, and zero otherwise.

The interactive variables *ROE*POSOCR*, *LEV*NEGOOCR*, and *SIZE*POSOCR* are the variables of interest since they isolate the effect of ROE, LEV and SIZE of those firms that recorded gains, losses, and gains attributable to changes in firm's credit risk, respectively.

Consistent with prior research into accounting choices, firm-specific characteristics such as listing status and Tier 1 capital ratio are also significant in explaining accounting policy choices (e.g., Demaria & Dufour, 2007; Wu et al., 2016; Fiechter, Landsman, Peasnell, & Renders, 2017). Tier 1 capital ratio is a critical regulatory requirement that banks must maintain, which represents the bank's financial strength, and it is a risk-weighted way of measuring the bank's leverage (the higher the ratio is, the less leveraged the bank is). Consequently, *TIER1* was added, which is the ratio of Tier 1 capital to risk-weighted assets at the end of the period before the early adoption.

Firms listed on multiple or foreign stock exchanges have greater agency problems. Foreign listing adds capital market pressures on firms, which may motivate them to remove a volatile effect from the income statement, such as the gains or losses attributable to changes in the firm's credit risk. Hence, *CLIST* was added to control for such factors, which is a dummy variable equal to one when the financial institution is cross-listed, and zero otherwise.

Following prior studies (e.g., Bastos, Nakamura, & Basso, 2009; Duh, Hsu, & Alves, 2012), I address the concern that my results could be driven by macroeconomic factors controlling for macroeconomic variables that can affect bank risk – the inflation rate and GDP growth. *INFLRATE* is the annual change in the consumer price index whereas *GDPGROWTH* is the country's gross domestic product growth rate, both in the period of early adoption. While a higher inflation rate can increase bank risk, higher GDP growth reflects the country's economic development and profit opportunities, which in turn may reduce bank risk.

Similarly, Ball et al. (2000) argue that the country's institutional features can also determine the outcomes of accounting standards. To explore the role of legal enforcement in influencing the decision to early adopt the accounting treatment of the own credit risk, *ENFORC* is another control variable, and it represents the quality of legal enforcement in each particular country. (Leuz, Nanda, & Wysocki, 2003; Duh et al., 2012). The variable is measured using the average score of the rule of law and corruption in the period before the early adoption.

Finally, β_0 is the intercept, while all the other β are the slope coefficients. Subscript i refers to the financial institution. Further details about variables' specifications are presented in Section 3.1.5.

For the same hypotheses, a second model was proposed, which replaces ROE for another proxy labelled as CO . The second model used to test hypotheses H1 to H3 is expressed in equation (2), which also analyses the determinants explained by the Positive accounting theory:

$$ADOPT = \beta_0 + \beta_1 CO_i + \beta_2 LEV_i + \beta_3 SIZE_i + \beta_4 NEGOCR_i + \beta_5 POSOCR_i + \beta_6 CO_i * POSOCR_i + \beta_7 LEV_i * NEGOCR_i + \beta_8 SIZE_i * POSOCR_i + Controls_i \quad (2)$$

CO is a dummy variable equal to one when the financial institution adopts stock-option compensation, and zero otherwise. (Demaria & Dufour, 2007; Costa, Silva, & Laurencel, 2013). All the other variables are the same as defined in equation (1).

3.1.3 Logistic Model to test Hypotheses 4 – Earnings volatility

Earnings volatility is one of the reasons the constituents asked the IASB to transfer from profit or loss to OCI the effects of changes in fair value of financial liabilities designated as at FVTPL attributable to changes in the own credit risk.

Reported earnings are essential to assess the management performance and, for the external users, as a basis to make decisions about allocating resources. Since managers have the discretion to change the accounting treatment regarding the own credit risk of financial liabilities designated as at FVTPL, they can early adopt the new accounting treatment in order to improve short-term earnings. Therefore, it is expected that financial institutions with more volatile income would be more likely to early adopt the new accounting treatment of the own credit risk.

The model used to test hypothesis H4 - *Financial institutions with higher earnings volatility are more likely to early adopt the new accounting treatment of the own credit risk* – is expressed in equation (3).

$$ADOPT = \beta_0 + \beta_1 EarVol_i + Controls_i \quad (3)$$

ADOPT is a dummy variable equal to one when the financial institution early adopted the new accounting treatment of the own credit risk, and zero otherwise. *EarVol* is the standard deviation of quarterly earnings per share over the four quarters before the early adoption, which aims to measure earnings volatility and it follows Xu and Tang (2011) and Duh et al. (2012). The control variables used in this model are leverage, size, ROE, enforcement, cross-listing, Tier 1 ratio, inflation rate, and GDP growth, which were previously presented in equation (1). β_0 is the intercept and all the other β are the slope coefficients. Subscript *i* refers to the financial institution. Further details about variables' specifications are presented in Section 3.1.5.

3.1.4 Logistic Model to test Hypotheses 5 – Available-for-sale volatility

Considering that recording the effect of the firm's own credit risk in OCI might partially offset the volatility created by gains or losses related to financial assets classified as at FVOCI/AFS, it is expected that financial institutions that have higher volatility in gains or losses attributable to changes in fair value of financial assets classified as available-for-sale are more encouraged to early adopt the new accounting treatment of the own credit risk as a component of OCI.

The model used to test hypothesis H5 - *Financial institutions with higher volatility in available-for-sale unrealised gains or loss are more likely to early adopt the new accounting treatment of the own credit risk* – is expressed in equation (4).

$$ADOPT = \beta_0 + \beta_1 UGLAFSVol_i + Controls_i \quad (4)$$

ADOPT is a dummy variable equal to one when the financial institution early adopted the new accounting treatment of the own credit risk, and zero otherwise. *UGLAFSVol* is the standard deviation of available-for-sale gains or losses scaled by the number of outstanding shares over the four quarters before the early adoption, following Chang et al. (2011), Xu and Tang (2011) and Duh et al. (2012). The control variables used in this model are leverage, size, ROE, enforcement, cross-listing, Tier 1 ratio, inflation rate, and GDP growth, all previously presented in equation (1). β_0 is the intercept and all the other β are the slope coefficients. Subscript *i* refers to the financial institution. Further details about variables' specifications are presented in Section 3.1.5.

3.1.5 Variables' specification

This study prioritised the configuration of variables in the moulds of previous literature, mainly in order to reduce possible misconceptions in the definition of the variables of interest analysed in this research.

The sample comprises financial institutions with different characteristics and from multiple countries, whose features by themselves accentuate sample heterogeneity. In this sense, control variables were implemented with the objective of reducing variations in the estimators from different aspects among the firms present in the database. More specifically, such items were selected with the aim of reducing varieties that might directly affect the adjusted statistics and potentially lead to misleading inferences.

Seeking out to control for country characteristics, I included macroeconomics factors - inflation rate and GDP growth - variables that could represent the economic scenario in which each financial institution was inserted in the year of early adoption, following Bastos et al. (2009) and Duh et al. (2012).

Ball et al. (2000) argue that a country's institutional framework can also determine the outcomes of accounting standards. In principle, a robust legal system has active and well-functioning courts that can protect shareholders and creditors, for instance, against any abuse committed by the management. To address these issue, I examine proxies for the enforcement quality of such rights, choosing two of the five measures used by La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998): the rule of law and corruption. As the authors state, the rule of law pertains to law enforcement proper, whereas corruption deals more generally with the government's stance toward business.

Being very specific, rule of law measures the "extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, the police, and the courts, as well as the likelihood of crime and violence" (Kaufmann, Kraay, & Mastruzzi, 2007, p. 4). In other words, the rule of law measures the quality of courts, contract enforcement, and the degree to which rules are trusted and followed. According to Cieslewicz (2014), the rule of law is crucial to accounting systems as it reflects the degree to which contracts can be expected to be enforced, the degree to which laws can be relied upon, as well as the extent to which property rights are respected.

Control of corruption, in its turn, refers to the "extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as 'capture' of

the state by elites and private interests” (Kaufmann et al., 2007, p. 4). Cieslewicz (2014) explains that corruption has many outcomes in accounting. Given an example, he says that, for accountants, corruption means being put in situations where one expects to hide and explain away questionable activities, which may involve, for instance, dressing up financial records.

To explore the role of enforcement in influencing the choice to early adopt the new accounting treatment of the own credit risk, I included the two aforementioned institutional factors, which might put pressure on firms to make one particular accounting choice. I follow the method/theory of Leuz et al. (2003) and Duh et al. (2012), in order to measure the quality of legal enforcement, using the average score of the rule of law and control of corruption. Both scores are measured by the methodology developed by Kaufmann et al. (2007), and range from approximately -2.5 to +2.5, whose better scores indicate better outcomes.

Leuz et al. (2003) and Duh et al. (2012) also consider the efficiency of the legal system to measure the quality of legal enforcement. All three variables mentioned used to range from zero to ten, however, nowadays, the efficiency of the legal system remains ranging from zero to ten, while the rule of law and corruption range from approximately -2.5 to +2.5, as previously mentioned. Therefore, using the three variables to measure the average quality of legal enforcement could distort the metrics, and this is the reason why I decided not to consider the efficiency of the legal system in my variable, keeping just the rule of law and corruption in my measurement of enforcement quality.

With the aim to control for firm's characteristics, variables commonly used in the extant literature were added, such as size, leverage, cross-listing, and Tier 1 ratio.

All variables used in accounting choices models are presented in details in Figure 10, with explanations regarding their measurement, preceding literature that has already considered them, and the source from where they were collected.

It is important to emphasise that all monetary variables are expressed in thousands of U.S. dollars. Moreover, there are different ways of measuring some variables, such as size and leverage, in the extant literature. However, the analysis of studies related to these items, as presented in Figure 10, showed that the selected methodologies are usually found in the existing literature and, therefore, it would not be inconsistent to adopt them for this research.

Figure 10 – Variables' specifications – Accounting choice

Hypotheses	Variable	Description	Preceding literature	Source
H1 to H5	ADOPT	Dummy variable equal to one when the financial institution early adopted the new accounting treatment of the own credit risk of FVOL, and zero otherwise.	Chang et al. (2009, 2011); Song (2008); van Veen (2011); Wu et al. (2013, 2016); Xu and Tang (2011)	Hand-collected
	ROE	Net income scaled by average book value of equity at the end of the period before the early adoption.	Costa et al. (2013); Couch et al. (2017); Guthrie et al. (2011)	Based on data available on Orbis Bank Focus
	LEV	The ratio of debts to total assets at the end of the period before the early adoption.	Demerjian, Donovan, and Larson (2016); Fiechter (2011); van Veen (2011); Wang, (2011)	Based on data available on Orbis Bank Focus
	SIZE	The natural logarithm of total assets at the end of the period before the early adoption.	Chang et al. (2009, 2011); Chung et al. (2017); Couch et al. (2017); Couch and Wu, (2016); Onali, Ginesti, and Vincenzo (2017); Song (2008); Wu et al. (2013); Xu and Tang (2011)	Orbis Bank Focus and hand-collected
	ENFORC	Quality of legal enforcement using the average score of the rule of law and corruption in the period before the early adoption.	Alon and Dwyer (2014); Duh et al. (2012); Leuz et al. (2003)	World Bank (WDI)
	INFLRATE	The inflation rate, defined as the annual change in the consumer price index in the period of early adoption.	Bastos et al. (2009); Duh et al. (2012)	World Bank (WDI)/IMF
	GDPGROWTH	Country's gross domestic product growth rate in the period of early adoption.	Bastos et al. (2009); Judge, Li, and Pinsker (2010); Lasmin (2011)	World Bank (WDI)/IMF
	CLIST	Dummy variable equal to one when the financial institution is cross-listed, and zero otherwise.	Demaria and Dufour (2007); Jaafar and McLeay (2007); Martínez, Martínez, and Diazaraque (2011)	Orbis Bank Focus
	TIER1	Tier 1 capital ratio, defined as the ratio of Tier 1 capital to risk-weighted assets, at the end of the period before the early adoption.	Fiechter et al. (2017); Song (2008); Wu et al. (2016); Xu and Tang (2011)	Orbis Bank Focus and hand-collected
H1 to H3	NEGOCR	Dummy variable equal to one when the financial institution recorded negative changes attributable to changes in the firm's credit risk at the end of the period before the early adoption, and zero otherwise.	Greiner (2015)	Hand-collected
	POSOCR	Dummy variable equal to one when the financial institution recorded positive changes attributable to changes in the firm's credit risk at the end of the period before the early adoption, and zero otherwise.	Greiner (2015)	Hand-collected
	CO	Dummy variable equal to one when the financial institution adopts stock-option compensation, and zero otherwise.	Costa et al. (2013); Demaria and Dufour (2007)	Hand-collected
H4	EARVOL	The firm-specific standard deviation of earnings per share over the four quarters before the early adoption.	Duh et al. (2012); Xu and Tang (2011)	Orbis, Bloomberg and Hand-collected
H5	UGLAFSVOL	The standard deviation of quarterly unrealised gains or losses of available-for-sale assets scaled by the number of outstanding shares over the four quarters before the early adoption.	Chang et al. (2009, 2011); Duh et al. (2012); Xu and Tang (2011)	Hand-collected/Orbis Bank Focus

Source: Prepared by the author

Finally, while hand-collecting data, from the firm's financial statements, I took the opportunity to randomly confirm the amount disclosed by the companies versus the amount available on Orbis/Orbis Bank Focus and Bloomberg. No discrepancy between the databases and the disclosed financial statements were found.

3.2 Own credit risk and value relevance: sample selection and data analysis

In this section, I present the details about the sample selection and the models used to analyse the data regarding the value relevance of the accounting information after the mandatory adoption (regular adopters) of the new accounting treatment of the gains or losses attributable to changes in firm's credit risk of financial liabilities designated as at FVTPL.

The most frequently model employed to test value relevance is that based on Ohlson (1995) and its subsequent refinements. Specifically, different authors (e.g., Easton, 1999; Barth et al., 2001; Flores, 2016) have revealed that the value relevance of accounting information on the firm's market value can be verified through two general models:

- a) Price-level regressions²⁵: examine the association between accounting amounts, such as earnings and equity (both variables in t_n) and equity market values (the dependent variable in t_n). This model tests whether accounting amounts explain cross-sectional variation in share prices.
- b) Returns regression: studies applying this model are interested in determining what is reflected in changes in value over a specific period. This model examines the association between accounting figures, such as earnings or changes in earnings (both variables in t_n) and stock returns (the dependent variable in t_n).

Shedding light on the price model, "an accounting amount will be value relevant, i.e., have a predicted significant relation with share prices, only if the amount reflects information relevant to investors in valuing the firm and is measured reliably enough to be reflected in share prices." (Barth et al., 2001, p. 80). The authors add that share prices reflect an accounting amount if the two are correlated.

The returns model, in its turn, "may be used as the basis for tests of hypotheses regarding the timeliness of the reporting of value changes in financial statements." (Easton, 1999, p. 399).

²⁵ In Brazil, we understand this model as being a price-to-book regression model.

Barth et al. (2001) explain that the critical distinction between value relevant researches examining price levels and those examining returns is that the former are interested in determining what is reflected in firm value and the latter are interested in determining what is reflected in changes in value over a specific period.

Since the objective of this research is to investigate whether the change in the accounting treatment of the own credit risk of financial liabilities designated as at FVTPL is reflected in firm's share prices, the price model was chosen, following prior studies, such as Barth, Landsman, and Lang (2008), and Barth et al. (2014; 2017).

3.2.1 Price-to-book model adapted to test Hypothesis 6 – Value Relevance

I test my hypothesis using cross-sectional multiple linear regression models since these analyses allow many observed factors (X) to affect the dependent variable (Y). Linear models are appropriate when attempting to model a continuous dependent variable, and they have been widely used in previous studies of value relevance (e.g., van Veen, 2011; Badertscher, Burks, & Easton, 2014; Barth et al., 2014, 2017; Flores, 2016).

One of the most central regression specifications in value relevance researches is the price regression, which analyses the relationship between the equity's market value and the equity's book value. Relying on the Ohlson's model (1995) and based on the studies of Barth, Landsman et al. (2008) and Barth et al. (2014; 2017), the model can be presented as follows:

$$P_i = \beta_0 + \beta_1 NIS_i + \beta_2 BVES_i + \mathbf{Controls} + \epsilon_i \quad (5)$$

P is the equity price, which is measured four months after the fiscal period-end to ensure the accounting information is publicly available, following Barth (1994), Lopes and Walker (2012), and Barth et al. (2014). NIS is net income of the first semester of 2018, and $BVES$ is the book value of equity at the end of the first semester of 2018. β_0 is the intercept, all the other β are the slope coefficients, and ϵ is the error term. Subscript i refers to the financial institution.

The sixth hypothesis, defined on the basis of literature review, establishes that:

H6: *The value relevance of the net income figure significantly increases after recognising changes in fair value attributable to changes in own credit risk in other comprehensive income rather than in the income statement, due to the mandatory adoption of IFRS 9.*

Combining the proposal of equation (5) with the hypothesis presented above, it is possible to predict that we can see observable effects in stock prices after recording fair value changes attributable to changes in own credit risk of financial liabilities designated as at FVTPL in OCI rather than in the income statement.

In order to compare the predictive power of the first model (equation 5) to the one that would have been if the fair value changes attributable to changes in the firm's credit risk were kept being recorded in net income, a second model is proposed:

$$P_i = \beta_0 + \beta_1 NIINCLS_i + \beta_2 BVES_i + Controls + \epsilon_i \quad (6)$$

NIINCLS corresponds to the Net Income plus the fair value gain or loss attributable to changes in the firm's credit risk that started being mandatorily recorded as a component of OCI in the first semester of 2018. Therefore, this variable represents the contrafactual of how much the net income would have been if the accounting treatment had not changed in 2018. *BVES* is the book value of equity, as reported at the end of the first semester of 2018.

In order to mitigate scale concerns, all variables are scaled by the number of shares outstanding, following Barth and Clinch (2009). The controls variables included in both models are dummy variables that equal one for financial institutions domiciled in country *j*, and zero otherwise. Because only the financial industry is analysed, no variables were included to control for industry effects. I also control for size and leverage.

Kothari and Zimmerman (1995) show that price models are better specified in that the estimated slope coefficients are unbiased, contrasting to the return models, whose slope coefficients are biased downward. However, they add that the return models more often meet the assumptions behind statistical tools, such as regression analysis. On the other hand, current earnings are uncorrelated with the information about future earnings contained in the current stock price, which does not bias the estimated slope coefficient, but the price model has an uncorrelated omitted variable that reduces explanatory power. (Beisland, 2009). Considering such an explanation, it is important to emphasise that the present study does not intend to address such problems because it is beyond the intended objectives.

3.2.2 Sample selection and variables' specification

In order to test hypothesis 6, the sample selection takes as the starting point the final sample for accounting choices purpose, which comprises 65 firms, being 13 early adopters and 52 non-adopters. Since the hypothesis 6 aims to analyse the regular adopters exclusively, the 13 early adopters were removed from the sample. Other four firms were removed from the sample, due to missing data. Finally, other three firms were removed, since they discontinued the use of the fair value option for financial liabilities in 2018. Therefore, the final sample comprises 45 firms. Due to data availability, hypothesis 6 is analysed in the first semester of 2018.

Studying only firms that adopted IFRS 9 mandatorily has two benefits. First, it ensures that the differential effect of changing the accounting treatment of the fair value changes due to the firm's credit risk is analysed at the same point in time. Second, focusing on mandatory adopters avoids potential confounding effects on the inferences associated with differences in incentives for voluntary adopters.

With the aim to control for firm's characteristics, variables commonly used in the extant literature were added, such as size and leverage.

All variables used in value relevance models are presented in details in Figure 11, with explanations regarding their measurement, preceding literature that has already considered them, and the source from where they were collected. All monetary variables are expressed in thousands of U.S. dollars.

Figure 11 – Variables' specifications – Value relevance

Hypotheses	Variable	Description	Preceding literature	Source
H6	PRICE	The equity price, which is measured four months after the end of the first semester of 2018.	Barth et al. (1996, 2014); Lopes and Walker (2012)	Orbis Bank Focus
	NIS	Net income of the first semester of 2018.	Barth, Hodder et al., (2008); Barth et al. (2014, 2017); Francis and Schipper (1999); Ohlson (1995)	Orbis and hand-collected
	BVES	The book value of equity at the end of the first semester of 2018.		
	NIINCLS	Net Income plus the fair value gain or loss attributable to changes in the firm's credit risk that started being mandatorily recorded as a component of OCI, in the first semester of 2018.	van Veen (2011)	Orbis and hand-collected
	LEV	The ratio of debts to total assets at the end of the first semester of 2018.	Demerjian et al. (2016); Fiechter (2011); van Veen (2011); Wang (2011)	Based on data available on Orbis and hand-collected
	SIZE	The natural logarithm of total assets at the end of the first semester of 2018.	Chang et al. (2009, 2011); Chung et al. (2017); Couch et al. (2017); Couch and Wu (2016); Onali et al. (2017); Song (2008); Wu et al. (2013, 2016); Xu and Tang (2011)	Based on data available on Orbis and hand-collected
	COUNTRY	Dummy variables equal 1 for each country within the sample.	Barth et al. (2014); Fiechter (2011); Flores (2016); van Veen (2011)	Orbis Bank Focus

Source: Prepared by the author

As previously emphasised, there are different ways of measuring some variables, such as size and leverage, in the extant literature. However, the analysis of studies related to these items, as presented in Figure 11, showed that the selected methodologies are usually found in the existing literature and, therefore, it would not be inconsistent to adopt them for this research.

Finally, while hand-collecting data, from the firm's financial statements, I took the opportunity to randomly confirm the amount disclosed by the companies versus the amount available on Orbis/Orbis Bank Focus. No discrepancy between the databases and the disclosed financial statements were found.

4 DATA ANALYSIS

My research extends the prior literature, because, as far as I know, there are no investigations about the determinants to early adopt the new accounting treatment of changes in fair value attributable to the own credit risk of financial liabilities designated as at FVTPL, as well as, about the value relevance of accounting figures after its mandatory adoption. Moreover, there are few archival pieces of research on fair value option for liabilities (no consensus already reached), being most of them focused on financial assets, whereas liabilities are neglected. This investigation is needed because of the absence of consensus regarding the called ‘counterintuitive’ effect of financial liabilities’ credit risk.

Therefore, this study contributes to the extant literature on accounting choices by analysing the determinants to early adopt only the new accounting treatment of the own credit risk of financial liabilities designated as at FVTPL, without early adopting IFRS 9 entirely. Moreover, this study contributes to the stream of research dealing with the value relevance of accounting information. Specifically, I add to the existing literature by shedding light on the value relevance of accounting information after removing the gains or losses attributable to changes in the firm’s credit risk from net income to OCI.

4.1 Own credit risk and accounting choices

I address one specific question in this section: what are the incentives for financial institutions to early adopt only the new accounting treatment of the own credit risk of financial liabilities designated as at FVTPL, without early adopting IFRS 9 entirely? Firstly, I present the descriptive statistics and then, the findings from the econometric models estimated to answer Hypotheses H1 to H5, whose details were introduced in Section 3.1.

4.1.1 Descriptive statistics

In this section I present the descriptive statistics of the full database, comprising early adopters and non-adopters of the new accounting treatment of the fair value changes attributable to changes in firm’s credit risk of financial liabilities designated as at FVTPL.

Table 5 – Descriptive Statistics of Early Adopters and Non-adopters

Variables	#obs	Mean	Median	Standard deviation	Min	Max
ADOPT	65	0.200	0.000	0.403	0.000	1.000
LEV	65	0.902	0.924	0.086	0.365	0.979
SIZE	65	18.885	18.916	1.903	12.777	21.968
ROE	65	0.066	0.081	0.101	(0.402)	0.258
CO	65	0.831	1.000	0.378	0.000	1.000
NEGOOCR	44	0.318	0.000	0.471	0.000	1.000
POSOCR	44	0.273	0.000	0.451	0.000	1.000
LEV*NEGOOCR	44	0.297	0.000	0.440	0.000	0.979
SIZE*POSOCR	44	5.166	0.000	8.567	0.000	21.507
ROE* POSOCR	44	(0.003)	0.000	0.081	(0.402)	0.146
CO*POSOCR	44	0.227	0.000	0.424	0.000	1.000
EARVOL	50	4.764	0.047	26.506	0.002	183.482
UGLAFSVOL	48	0.137	0.018	0.365	0.000	2.338
ENFORC	65	0.746	0.298	0.863	(0.806)	2.118
INFLRATE	65	1.711	1.600	0.808	0.500	5.200
GDPGROWTH	65	3.320	2.900	2.033	0.800	6.900
CLIST	65	0.631	1.000	0.486	0.000	1.000
TIER1	53	0.142	0.132	0.044	0.082	0.319

Table 5 reports the means, medians, standard deviation, minimum, and maximum of the explanatory and control variables used in this study. According to Table 5, the dummy variable *ADOPT* has a mean of 0.20, which means that 20 per cent of the sample chose to early adopt the new accounting treatment of the own credit risk in 2017. This finding is consistent with the previous analysis that 13 financial institutions early adopted the new accounting treatment of the own credit risk within a sample of 65 firms ($13/65 = 20$ per cent).

The variable *LEV* has a mean of 0.90, which is slightly higher than the means found by Fiechter (2011) and van Veen (2011). While the standard deviation found by Fiechter (2011) is similar to the standard deviation found in my study, van Veen (2011) found a standard deviation that is twice the value found in my sample.

The variable *SIZE* has a mean of 18.885 and a very close median of 18.916, which demonstrates the distribution is quite symmetric. The mean of *ROE* is 0.066, with a standard deviation of 0.101. It is important to highlight that the value of *ROE* ranges from a negative value of -0.402 to a positive value of 0.258, which means that there are both profitable and non-profitable firms within the sample. The mean of the dummy variable *CO* shows that 83.1 per cent of the sample has stock-options compensation plans for their executives.

The dummy variables *NEGOOCR* and *POSOCR* have means of 0.318 and 0.273, respectively. It means that 31.8 percent of the sample (44 observations x 31.8% = 14 firms)

reported losses attributable to changes in firm's credit risk in 2016 (the year prior to the early adoption period analysed in this study), whereas 27.3 per cent (44 observations x 27.3% = 12 firms) reported gains attributable to changes in the firm's credit risk in 2016. Among the 44 observations, 18 firms reported zero effect in 2016, which corresponds to 40.9 per cent of the observations analysed. It is important to highlight that 21 firms do not disclose anything related to the own credit risk effect, although such disclosure is required by IFRS 7 – Financial Instruments: Disclosure, which means approximately a third of the sample ($21/65 = 0.32$). This is the reason why the observations analysed in my models developed to test Hypotheses H1 to H3 were reduced from 65 firms to 44 observations.

The interactive variables are the main variables of this study, concerning the Hypotheses H1 to H3. The interactive variable *LEV*NEGOOCR* has a mean of 0.297 and a standard deviation of 0.440, whereas *SIZE*POSOOCR* has a mean of 5.166 and a standard deviation of 8.567. *ROE*POSOOCR* has a mean of -0.003, and it ranges from a negative value of -0.402 to a positive value of 0.146.

*CO*POSOOCR* has a mean of 0.227, which means that 22.7 per cent of the observations analysed have stock-options compensation plans for their executives and reported gains attributable to changes in firm's credit risk in the year before the early adoption period (44 observations x 22.7% = 10 firms). Among the other 34 firms analysed, 27 firms have stock-options compensation plans for their executives, but they reported losses (14 firms) or zero effect (13 firms) in the period before the early adoption year. The remaining seven firms do not have stock-options compensation plans for their executives.

EARVOL is the variable of interest, concerning Hypothesis 4. It has a mean of 4.764 and a standard deviation approximately 5.6 times higher (26.506). The values range from a minimum of 0.002 to a maximum of 183.482. The volatility found in this research is much higher than the ones found in the studies of Duh et al. (2012) and Xu and Tang (2011).

UGLAFSVOL is the variable of interest, concerning Hypothesis 5. It has a mean of 0.137 and a standard deviation of 0.365. Their values range from a minimum of zero to a maximum of 2.338. The median is 0.018, which reflects the positive skewness of such measure since many financial firms have very low volatility due to changes in fair value of financial assets classified as available-for-sale.

The variable *ENFORC* has a mean of 0.746 and a standard deviation of 0.863. The values range from a negative value of -0.806 to a positive 2.118. Considering that rule of law and control of corruption indexes vary from approximately -2.5 to +2.5, the sample

contains firms from countries with a low level of enforcement to a quite high level of enforcement.

The macroeconomics variables *INFLRATE* and *GDPGROWTH* have means of 1.711 and 3.320, respectively. *CLIST* has a mean of 0.631, which means that 63.1 per cent of the sample is listed in more than one stock exchange around the globe. Finally, *TIER 1* has a mean of 0.142 and its values range from 0.082 to 0.319, which shows that within the sample there are firms with different levels of risk.

Table 6 reports the means, medians, and standard deviation of the explanatory and control variables for various pairings of early adopters versus non-adopters. The table also reports the significance levels for these pairings of Student t and Wilcoxon rank-sum Z tests of differences between means and medians, respectively.

Table 6 – Descriptive Statistics of Early Adopters versus Non-adopters

Variables	Early Adopters				Non-Adopters			
	#obs	Mean	Median	Standard deviation	#obs	Mean	Median	Standard deviation
LEV	13	0.936	0.937	0.018	52	0.893*	0.921*	0.094
SIZE	13	19.418	19.228	1.318	52	18.752	18.846	2.012
ROE	13	(0.008)	0.041	0.143	52	0.085*	0.091*	0.079
CO	13	1.000	1.000	0.000	52	0.788*	1.000	0.412
NEGOOCR	13	0.462	0.000	0.519	31	0.258	0.000	0.445
POSOOCR	13	0.308	0.000	0.480	31	0.258	0.000	0.445
LEV*NEGOOCR	13	0.434	0.000	0.488	31	0.240	0.000	0.413
SIZE*POSOOCR	13	5.979	0.000	9.346	31	4.825	0.000	8.358
ROE*POSOOCR	13	(0.040)	0.000	0.129	31	0.013	0.000	0.044
CO*POSOOCR	13	0.308	0.000	0.480	31	0.194	0.000	0.402
EARVOL	12	19.011	0.198	53.269	38	0.265	0.040	0.433
UGLAFS	10	0.320	0.012	0.729	38	0.089	0.019	0.169
ENFORC	13	1.143	1.514	0.743	52	0.647	0.287	0.868
INFLRATE	13	1.885	2.100	0.684	52	1.667	1.600	0.836
GDPGROWTH	13	2.115	1.800	0.587	52	3.621*	3.050*	2.155
CLIST	13	0.769	1.000	0.439	52	0.596	1.000	0.495
TIER1	13	0.132	0.136	0.028	40	0.145	0.132	0.047

*indicates the difference in mean and median between early adopters and non-adopters is significant at 5% level or less (two-tailed).

The statistics and tests reported in Table 6 indicate that early adopters are more leveraged than non-adopters and the difference between the means and medians are statistically significant at 0.0035 and 0.0344, respectively. With respect to size, the early adopters are bigger than non-adopters, but the difference between them is not statistically significant.

In terms of profitability, early adopters have smaller returns (mean -0.008 and median 0.041) than non-adopters (mean 0.085 and median 0.091). The differences in both means and medians are statistically significant at 0.0398 and 0.0035, respectively.

Table 6 also indicates that a hundred per cent of the early adopters have stock-option compensation plans for their executives, while 78.8 per cent of non-adopters has such kind of plans. The mean difference between both groups is statistically significant (0.0005) at less than 5 per cent. Since all early adopters have stock-option compensation plans, the dummy variable *CO* is not the best proxy to explain the determinants of early adoption, with respect to the compensation hypothesis. Thus, in the regression analysis, only the model considering *ROE* as a proxy for compensation is analysed.

Early adopters are more likely to have recorded, in the year before the early adoption period, losses attributable to changes in the firm's credit risk than the non-adopters. Similarly, early adopters are more likely to have recorded, in the year before the early adoption period, gains attributable to changes in the firm's credit risk than the non-adopters. Although the differences in means are not statistically significant, the difference between firms that recorded losses is higher than the difference between firms that recorded gains.

The interactive variable *LEV*NEGOOCR* shows that the leverage of those firms that recorded losses due to changes in firm's credit risk and decided to early adopt the new accounting treatment of the own credit risk is higher when compared to the non-adopters. Moreover, firms that have gains attributable to changes in credit risk and decided to early adopt the new accounting treatment of the own credit risk are bigger than the non-adopters, the interactive variable *SIZE*POSOCR* shows.

In terms of returns, firms that have gains attributable to changes in credit risk and decided to early adopt the new accounting treatment of the own credit risk have lower levels of *ROE* when compared to the non-adopters, according to the results on the interactive variable *ROE*POSOCR*. Furthermore, the interactive variable *CO*POSOCR* shows that early adopters are more likely to have stock-option compensation plans and gains related to changes in the firm's credit risk than the non-adopting firms. Although there are differences among all interactive variables, they are not statistically significant at 5 per cent or less.

Early adopters are more likely to be from a country with a higher level of enforcement and to have more volatile earnings and results related to changes in fair value of financial assets classified as available-for-sale. However, the differences are not statistically significant at less than 5 per cent.

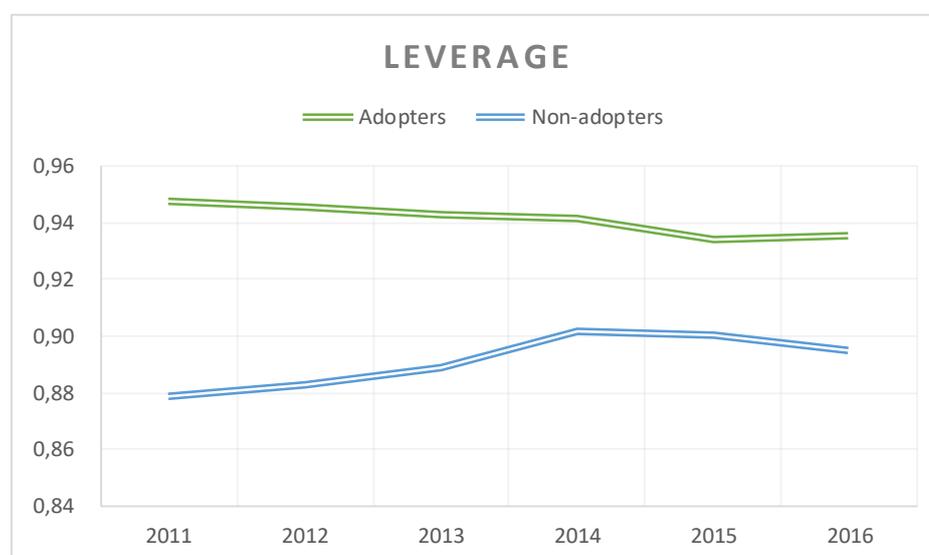
In terms of macroeconomic factors, early adopters are more likely to be from countries with a higher level of the inflation rate and lower level of GDP growth than the non-adopters. Based on these two macroeconomic variables, we can see that early adopters are inside a context that put pressure on them, since high inflation rates increase the risk of financial firms, whereas lower levels of GDP growth diminish the profit opportunities for them. It is important to emphasise that the difference in both means and medians of *GDPGROWTH* are statistically significant at 0.0000 and 0.0216, respectively. The differences in the inflation rate means and medians are not statistically significant at 5 per cent or less.

Finally, although the differences are not statistically significant, early adopters are more likely to be cross-listed and to have a lower level of Tier 1 capital ratio, when compared to non-adopters.

Before analysing the correlation and the regression results, and still connected to this first descriptive analysis, I considered as adequate a longitudinal overview of some variables considered in this study, from the year the accounting treatment of financial liabilities was added to IFRS 9 (in 2010) to the last year before the early adopters made their choice to early adopt the new accounting treatment of the own credit risk, which happened in 2017. However, due to a lack of available information related to the year of 2010, the analysis concentrates in the years of 2011 to 2016.

I start with the analysis of the firm's leverage. Figure 12 illustrates the time series of the mean leverage over the years.

Figure 12 – Leverage: Early Adopters versus Non-adopters

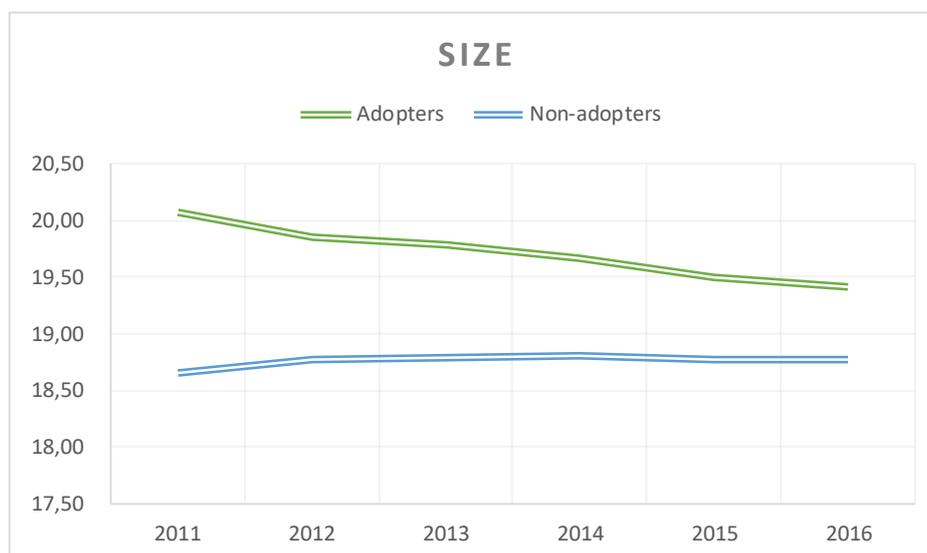


Source: Prepared by the author

Based on the data presented in Figure 12, it is possible to see that the leverage of the early adopters is higher than the leverage of the non-adopting firms. The leverage means of early adopters were much higher over the years of 2011 to 2013, when compared to the most recent years. Such difference diminished in 2014 and 2015 and suffered a slight increase in 2016. These findings indicate that more leveraged firms were more concerned about recording changes in fair value attributable to changes in firm's credit risk in net income and were more likely to early adopt the new accounting treatment of the own credit risk of financial liabilities designated as at FVTPL, which corroborates to the findings in Table 6.

Regarding size, Figure 13 illustrates the time series of the mean size over the years. It is possible to see that early adopters have been bigger than non-adopters, since 2011, which also corroborates to the findings in Table 6. However, the difference between them has diminished as time passes. These findings indicate that bigger firms were more concerned about recording changes in fair value attributable to changes in firm's credit risk in net income and were more likely to early adopt the new accounting treatment of the own credit risk of financial liabilities designated as at FVTPL.

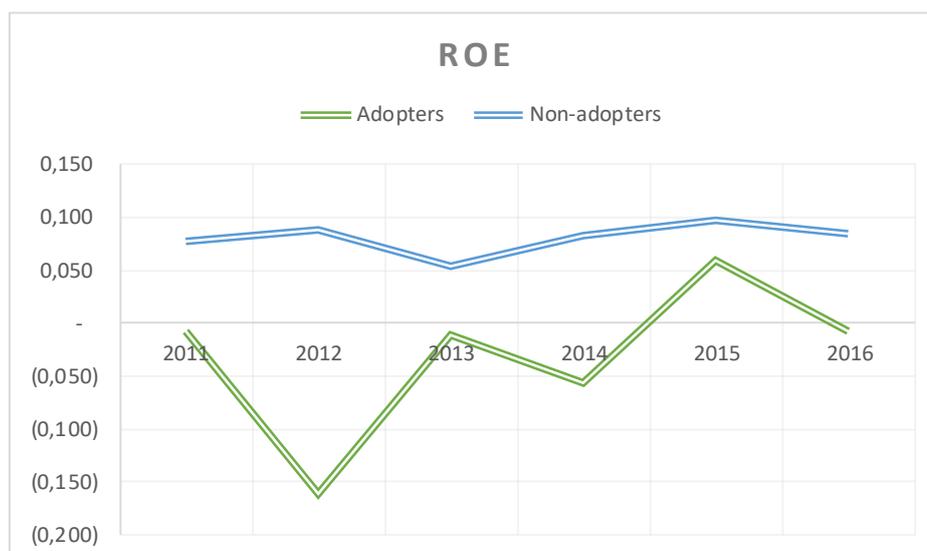
Figure 13 – Size: Early Adopters versus Non-adopters



Source: Prepared by the author

The next variable analysed is ROE. Figure 14 illustrates the time series of the mean ROE over the years.

Figure 14 – ROE: Early Adopters versus Non-adopters

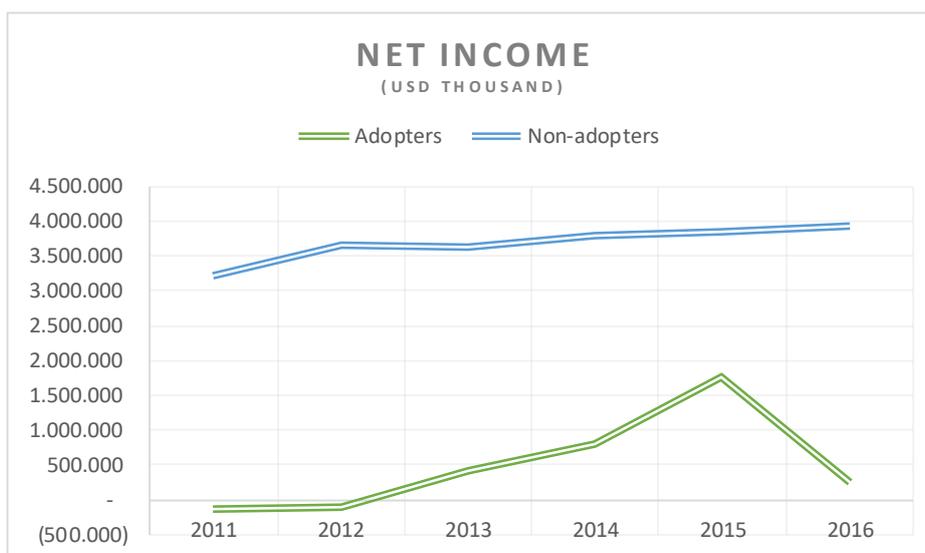


Source: Prepared by the author

Based on the data presented in Figure 14, it is possible to see that while non-adopters tend to have a more stable return, except in 2013, when their return decreased, early adopters have been facing a volatile return over the years. Although there is a sharp increase in 2015, which made the average return becomes positive for the first time in this time series, their return went down again in 2016, something that might have put pressure on them to remove all effects that contribute to such volatility, and one of these effects might be the changes in fair value attributable to changes in the firm's credit risk in net income. Therefore, firms suffering from more variability in ROE were more likely to early adopt the new accounting treatment of the own credit risk of financial liabilities designated as at FVTPL.

Since we are talking about profitability, I also included an analysis of the mean net income's behaviour over the years, which is illustrated in Figure 15.

Figure 15 – Net Income: Early Adopters versus Non-adopters

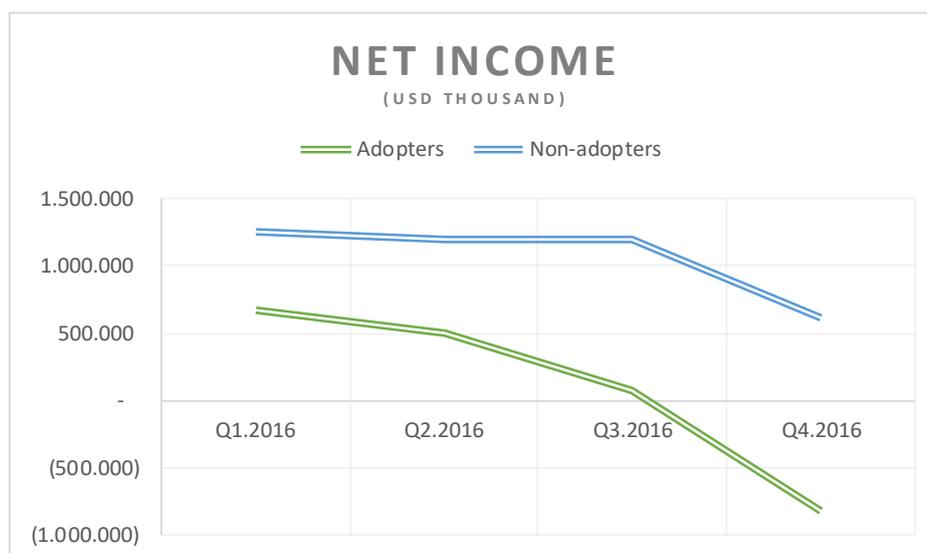


Source: Prepared by the author

Figure 15 provides evidence that the non-adopters present a more steady net income over the years, with organic growth, while the early adopters faced a steady increase in profit from 2012 to 2015, however, with an abrupt decline in 2016. Again, these data demonstrate that the behaviour of net income might have put pressure on the early adopters to remove all effects that contribute to such volatility, and one of these effects might be the changes in fair value attributable to changes in firm's credit risk in net income. Therefore, firms suffering from more variability in net income were more likely to early adopt the new accounting treatment of the own credit risk of financial liabilities designated as at FVTPL.

Shedding light on the net income disclosed in the last year before the early adoption, Figure 16 illustrates the behaviour of quarterly earnings in 2016.

Figure 16 – Quarterly Earnings in 2016: Early Adopters versus Non-adopters

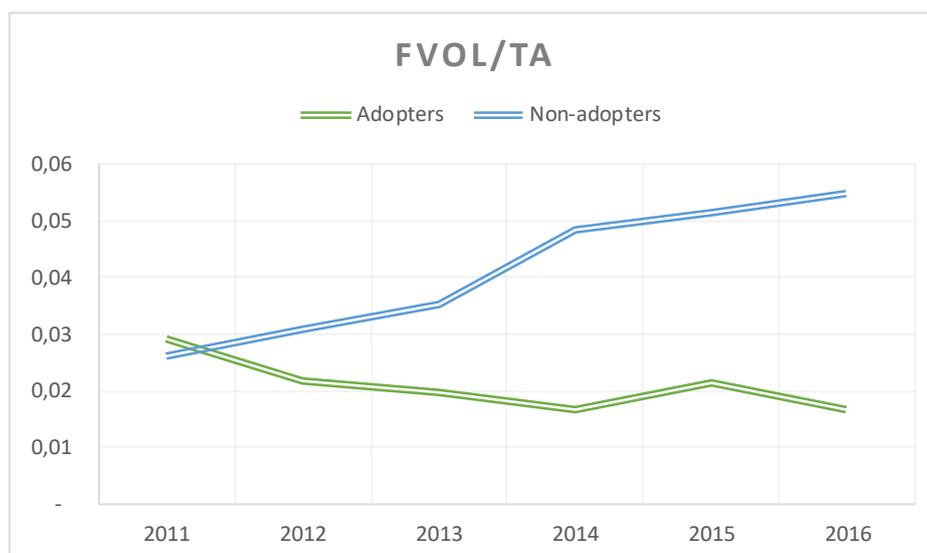


Source: Prepared by the author

Focusing on the year before the early adoption period, Figure 16 provides evidence that the net income of early adopters is smaller than the net income of non-adopters. Moreover, although both suffered a decline in earnings, as the quarters passed, the reduction was even more profound for the early adopters, mainly in the third and fourth quarters. Again, these data demonstrate that the behaviour of net income might have put pressure on the early adopters to remove all effects that contribute to such volatility, and one of these effects might be the changes in fair value attributable to changes in firm's credit risk in net income. Thereby, firms suffering from more variability in net income were more likely to early adopt the new accounting treatment of the own credit risk of financial liabilities designated as at FVTPL.

In terms of representativeness, firms that did not early adopt the new accounting treatment of the own credit risk have more financial liabilities designated as at FVTPL than the early adopters, in relation to their Total Assets. According to Figure 17, in 2011 the proportion of financial liabilities designated as at FVTPL were very similar for both adopters. However, while non-adopters have designated more financial liabilities as at FVTPL, as the time passes, early adopters have diminished such proportion.

Figure 17 – Fair Value Option of Liabilities to Total Assets: Early Adopters versus Non-adopters



Source: Prepared by the author

Even though non-adopters have a higher volume of financial liabilities designated as at FVTPL, in relation to their Total Assets, the impact of gains or losses attributable to changes in firm's credit risk is smaller than the impact on the early adopters. Table 7 shows the impact of gains or losses attributable to changes in the firm's credit risk, which were recorded in net income, according to IAS 39, in 2016. The amounts presented in Table 7 are in thousands of U.S. dollars. Important to emphasise that, as previously mentioned, 21 firms do not disclose any information about gains or losses due to changes in the firm's credit risk. Therefore, Table 7 comprises only the average data of financial firms that disclosed the gains or losses due to changes in own credit risk (i.e. 44 observations), not the full sample (65 firms).

Table 7 – Impact of the own credit risk on earnings: Early Adopters versus Non-adopters

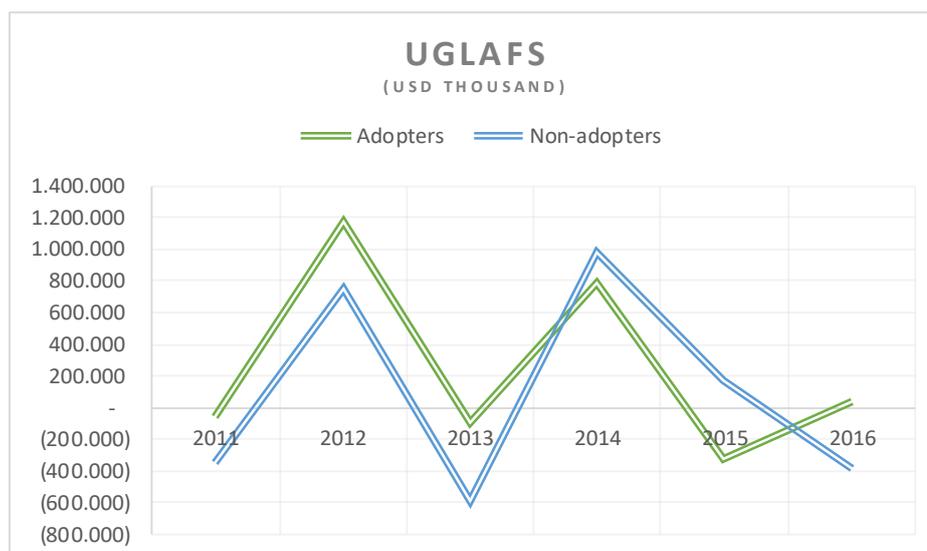
	Average Net Income as reported in the year before early adoption	Average Gains or losses attributable to changes in the firm's credit risk (OCR) recorded in the year before early adoption	Average Net Income without the effect of gains or losses due to changes in credit risk	Average % of OCR/Net Income without the effect of gains or losses due to changes in credit risk
Early adopters	252,335	(136,509)	388,844	-6.14%
Non-adopters	5,566,558	77,542	5,489,016	-1.10%

Although non-adopters have more volume of financial liabilities designated as at FVTPL, as demonstrated in Figure 17, the average impact of losses attributable to changes

in firm's credit risk on their earnings was -1.1 per cent, as shown in Table 7. On the other hand, early adopters have a lower volume of financial liabilities designated as at FVTPL, but they caused an impact of -6.14 per cent in the net income of 2016. Just to illustrate the relevance of gains or losses due to changes in credit risk in the earnings of the early adopters, in 2016, HSBC Holdings Plc recorded an adverse change in own credit risk on long-term debt in the amount of \$1,792 million, which represented -34.2 percent of its net income excluding such effect. Another financial firm that faced a significant impact in earnings was Raiffeisen Bank International AG, which recorded a loss of 119 million, which represented -17.2 per cent of its net income excluding such effect.

Changing the focus to the volatility in other comprehensive caused by gains or losses due to fair value changes of financial assets classified as available-for-sale, Figure 18 illustrates all average effects recorded in the time series period.

Figure 18 – Unrealised gains or losses of available-for-sale assets: Early Adopters versus Non-adopters

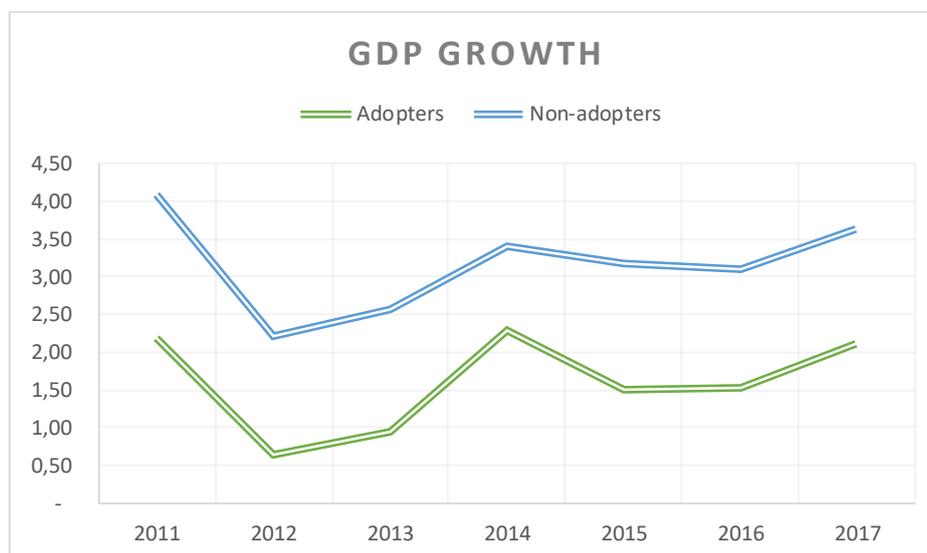


Source: Prepared by the author

Based on Figure 18, it is possible to see that both adopters and non-adopters have similar volatilities in other comprehensive income caused by changes in the fair value of financial assets classified as available-for-sale. The behaviour in all years is resembling, except in 2016, when non-adopters recorded an average loss whereas the early adopters recorded an average gain.

Changing the focus to the macroeconomic scenario, Figure 19 illustrates the country's economic development, which builds profit opportunities to their constituents.

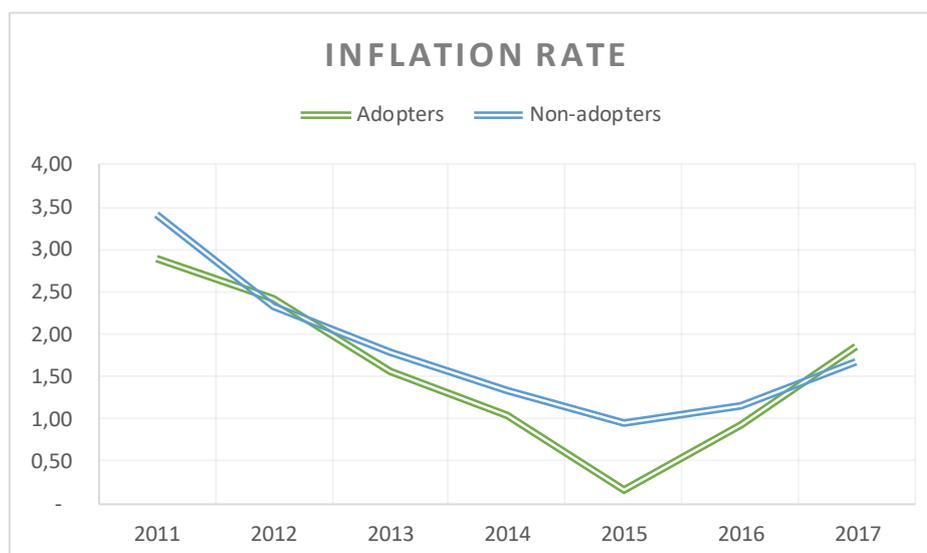
Figure 19 – GDP growth: Early Adopters' versus Non-adopters' countries



Source: Prepared by the author

Increased economic growth leads to higher income to the population, which in turn generates greater demands for more financial services. Although the countries of both early adopters and non-adopters have similar tendency regarding the growth of GDP, it is possible to see that the early adopters are within a scenario with fewer profit opportunities. Firms within such a scenario are even more stressed when the inflation rate trends have been of a steady rise, which can increase the financial firm's risk. Figure 20 shows that early adopters have been facing more pressure due to steady inflation rate rises since 2015. From 2013 to 2016, the inflation rate in the early adopters' countries was lower than in the non-adopters' countries, however, in 2017, it exceeds the inflation level of the non-adopters. Figure 20 presents the time series of inflation rate from 2011 to 2017.

Figure 20 – Inflation rate: Early Adopters' versus Non-adopters' countries



Source: Prepared by the author

Moving to the univariate analysis, Table 8 presents the Pearson correlation, highlighting whether the correlation of each variable is statistically significant at 5 per cent level or less. Such an univariate analysis shows the linear interrelation among the variables. However, it is not possible to ensure that such indicators will keep the same sign and significance in the estimated models.

Table 8 reveals that *ROE* (coeff. -0.37; p-value 0.002*) is significantly negatively correlated with the explanatory variable, which demonstrates that the higher the returns on equity, the less likely to early adopt the new accounting treatment of the own credit risk the financial firms are. In the same way, *ROE*POSOCR* (coeff. -0.30; p-value 0.047*) is significantly negatively correlated with the explanatory variable, demonstrating that firms which recorded gains attributable to changes in credit risk and have a higher level of returns on equity are less likely to early adopt the new accounting treatment of the own credit risk.

Furthermore, Table 8 also reveals that *EARVOL* (coeff. 0.31; p-value 0.031*) is significantly positively correlated with the explanatory variable, which means that the higher the earnings volatility, the more likely the firms are to early adopt the new accounting treatment of the own credit risk. The variable *GDPGROWTH* (coeff. -0.30; p-value 0.016*) is also significantly negatively correlated with the explanatory variable, which means that firms within countries with higher profit opportunities are less likely to early adopt the new accounting treatment of the own credit risk.

Table 8 – Pearson Correlation of Explanatory and Control variables – Accounting Choice

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 - ADOPT	1.00																	
2 - CO	0.23	1.00																
3 - LEV	0.20	(0.13)	1.00															
4 - SIZE	0.14	(0.22)	0.61*	1.00														
5 - ROE	(0.37)*	(0.21)	0.21	0.18	1.00													
6 - NEGOCR	0.20	0.30	0.15	0.13	0.05	1.00												
7 - POSOCR	0.05	(0.01)	0.08	(0.14)	(0.41)*	(0.42)*	1.00											
8 - CO*POSOCR	0.12	0.24	0.04	(0.13)	(0.44)*	(0.37)*	0.89*	1.00										
9 - LEV*NEGOCR	0.20	0.30	0.16	0.13	0.05	1.00*	(0.42)*	(0.37)*	1.00									
10 - SIZE*POSOCR	0.06	(0.01)	0.11	(0.11)	(0.40)*	(0.42)*	1.00*	0.88*	(0.42)*	1.00								
11 - ROE*POSOCR	(0.30)*	(0.11)	(0.08)	0.08	0.80*	0.02	(0.06)	(0.15)	0.02	(0.04)	1.00							
12 - EARVOL	0.31*	0.07	0.14	0.00	(0.12)	0.21	(0.03)	(0.01)	0.23	(0.03)	(0.18)	1.00						
13 - UGLAFSVOL	0.26	0.08	0.17	0.12	(0.58)*	(0.01)	0.40*	0.42*	(0.01)	0.40*	(0.67)*	0.91*	1.00					
14 - INFLRATE	0.11	0.08	(0.04)	0.19	0.12	0.21	(0.16)	(0.13)	0.21	(0.15)	0.04	0.06	(0.08)	1.00				
15 - GDPGROWTH	(0.30)*	(0.37)*	(0.15)	0.14	0.32*	(0.36)*	(0.27)	(0.29)	(0.36)*	(0.27)	0.11	(0.15)	(0.17)	0.07	1.00			
16 - ENFORC	0.23	0.10	0.22	0.07	(0.09)	0.40*	0.24	0.19	0.40*	0.26	0.31*	0.11	0.05	(0.06)	(0.58)*	1.00		
17 - CLIST	0.14	0.08	0.38*	0.11	(0.06)	0.31*	0.38*	0.33*	0.31*	0.37*	(0.02)	0.16	0.18	0.03	(0.54)*	0.54*	1.00	
18 - TIER1	(0.13)	(0.04)	(0.00)	(0.30)*	0.15	0.15	0.14	0.04	0.15	0.14	0.44*	0.07	(0.22)	(0.06)	(0.26)	0.64*	0.36*	1.00

* denotes correlations are significant at 5 percent level or less.

It is important to emphasise that the presentation of the correlation coefficients is a step of an exploratory data analysis, with the aim to show the linear and individual behaviour between the dependent variable and each explanatory variable. Such presentation does not allow the rejection of previously established hypothesis studied in this research.

Although the remaining explanatory variables are not statistically significant, the Pearson correlation reveals that firms with stock-option compensation plans are more likely to early adopt the new accounting treatment. Regarding leverage and size, more leveraged and bigger firms are more likely to early adopt the new accounting treatment. Except for *ROE*POSO*, aforementioned, all the other interactive variables are positively correlated to the dependent variable, however, not statistically significant.

Table 8 also reveals that firms from countries with higher level of enforcement and with more volatility due to changes in fair value of financial assets classified as available-for-sale are more likely to early adopt the new accounting treatment. Furthermore, firms from countries with a higher level of inflation rate are more likely to early adopt the new accounting treatment of the own credit risk. Finally, cross-listed firms are more likely to early adopt, while firms with higher levels of Tier 1 capital ratio are less likely to early adopt the new accounting treatment of the own credit risk. To emphasise again, all these variables are not statistically significant at 5 per cent or less.

4.1.2 Regression analysis – Hypotheses H1 to H3

Regression summary statistics for equation (1) is presented in Table 9. The analysis of these results permits to conclude about Hypotheses H1 to H3.

Table 9 reveals that the coefficient *ROE* is significantly negative (coeff. -16.658; p-value 0.019*) at less than 5 per cent level. This means that the higher the returns on equity, the less likely the firm is to early adopt the new accounting treatment of the own credit risk. Such finding is consistent with the mean and median t-test results, which indicate that the difference in mean and median between early adopters and non-adopters is statistically significant at less than 5 per cent level. Moreover, the finding is also consistent with the univariate result, which shows that *ROE* is significantly negatively correlated to the dependent variable. According to the compensation hypothesis (Watts & Zimmerman, 1978), managers are encouraged to adopt accounting procedures that increase their compensation. Considering that early adopters were those with an average lower level of

ROE, such finding corroborates to the compensation hypothesis. Similar results are obtained when running the regression model without adding controls, which demonstrates that the finding related to *ROE* is robust, *ceteris paribus*.

Table 9 – Summary statistics for equation (1)

$$z = ADOPT = \beta_0 + \beta_1 ROE_i + \beta_2 LEV_i + \beta_3 SIZE_i + \beta_4 NEGOCR_i + \beta_5 POSOCR_i + \beta_6 ROE_i * POSOCR_i + \beta_7 LEV_i * NEGOCR_i + \beta_8 SIZE_i * POSOCR_i + Controls_i$$

Variables	Full model		Final model	
	Coeff.	p-value	Coeff.	p-value
Intercept	(76.863)	0.098	3.568	0.125
LEV	141.593	0.117		
SIZE	(2.438)	0.218		
ROE	(81.015)	0.107	(16.658)	0.019*
NEGOCR	90.149	0.302		
POSOCR	(31.195)	0.333		
LEV*NEGOCR	(96.561)	0.303		
SIZE*POSOCR	1.592	0.345		
ROE*POSOCR	43.884	0.254		
ENFORC	5.801	0.123	2.281	0.035*
INFLRATE	4.038	0.089	1.226	0.028*
GDPGROWTH	(3.092)	0.052	(1.602)	0.027*
CLIST	(14.974)	0.069	(5.855)	0.013*
Observations	44		44	
Likelihood ratio	30.66		21.64	
Prob > chi2	0.0022		0.0006	
Pseudo R ²	57.41%		40.51%	
Area under ROC Curve	0.9429		0.9057	
LR test (prob > chi2)	#		0.2508	

Although the univariate analysis demonstrated that the interactive variable *ROE*POSOCR* is significantly negatively correlated to the dependent variable (coeff. -0.30; p-value 0.047*), such finding was not confirmed in the regression analysis. Based on Table 9, it is possible to see that the coefficient of the interactive variable *ROE*POSOCR* (coeff. 43.884; p-value 0.254) is positive, however, not statistically significant at 5 per cent or less. Since *ROE*POSOCR* is the variable of interest that address Hypothesis 1 - *Financial institutions with management bonus plans and positive fair value changes due to the own credit risk of financial liabilities designated as at FVTPL are less likely to early adopt the new accounting treatment of the own credit risk*, and its finding is not statistically significant at less than 5 per cent, it is possible to reject the hypothesis that firms with management compensation plans and fair value gains attributable to changes in the own credit risk

recorded in the year prior to the early adoption period are less likely to early adopt the new accounting treatment of the own credit risk without early adopting IFRS 9 entirely.

Table 9 also reveals that the coefficient of *LEV* is positive (coeff. 141.593), however not statistically significant (p-value 0.117) at less than 5 per cent, whose finding is similar to the one presented in the univariate analysis (coeff. 0.20; p-value 0.112). On the other hand, the interactive variable *LEV*NEGOOCR* presents a negative coefficient of -96.561, but it is not statistically significant (p-value 0.303) at less than 5 per cent, as well. This finding contradicts the one presented in the univariate analysis, which is also not statistically significant (p-value 0.184) but presents a positive coefficient of 0.20.

Since *LEV*NEGOOCR* is the variable of interest that address Hypothesis 2 - *Financial institutions with higher leverage and negative fair value changes due to the own credit risk of financial liabilities designated as at FVTPL are more likely to early adopt the new accounting treatment of the own credit risk*, and its finding is not statistically significant at less than 5 per cent, it is possible to reject the hypothesis that more leveraged firms with fair value losses attributable to changes in the own credit risk recorded in the year prior to the early adoption period are more likely to early adopt the new accounting treatment of the own credit risk without early adopting IFRS 9 entirely.

Table 9 also shows that the variable *SIZE* has a negative coefficient of -2.438, but it is not statistically significant (p-value 0.218) at less than 5 per cent, whose finding contradicts the univariate analysis, which shows a not statistically significant, but positive coefficient (coeff. 0.14; p-value 0.262). The interactive variable *SIZE*POSOCR*, in its turn, have similar coefficients in both multiple regression (coeff. 1.592; p-value 0.345) and univariate analysis (coeff. 0.06; p-value 0.689), however not statistically significant in both analyses.

Since *SIZE*POSOCR* is the variable of interest that address Hypothesis 3 - *Larger financial institutions with positive fair value changes due to the own credit risk of financial liabilities designated as at FVTPL are more likely to early adopt the new accounting treatment of the own credit risk*, and its finding is not statistically significant at less than 5 per cent, it is possible to reject the hypothesis that larger firms with fair value gains attributable to changes in the own credit risk recorded in the year prior to the early adoption period are more likely to early adopt the new accounting treatment of the own credit risk without early adopting IFRS 9 entirely.

Broadening the analysis to the other variables included in equation (1), Table 9 reveals that firms which recorded fair value losses attributable to changes in the own credit risk in

the year prior to the early adoption period seem to be more likely to early adopt the new accounting treatment of the own credit risk without early adopting IFRS 9 entirely, whereas those who recorded fair value gains seem to be less likely to early adopt. However, it is important to emphasise that those findings are not statistically significant, since both variables *NEGOOCR* (coeff. 90.149; p-value 0.302) and *POSOCR* (coeff. -31.195; p-value 0.333) have no statistical significance at less than 5 per cent.

Highlighting the control variables included in equation (1), Table 9 reveals that enforcement has a predictive power to explain why firms early adopted the new accounting treatment of the own credit risk. The final model shows that *ENFORC* has a statistically positive coefficient of 2.281 (p-value 0.035*), which is consistent with the result in the univariate analysis (coeff. 0.23), although, in the latter, the coefficient is not statistically significant at less than 5 per cent. Such finding corroborates to Ball et al. (2000), who hypothesise and find evidence that institutional factors affect accounting practice.

Macroeconomics factors also demonstrated to be relevant to predict accounting choices. Both *INFLRATE* (coeff. 1.226; p-value 0.028*) and *GDPGROWTH* (coeff. -1.602; p-value 0.027*) are statistically significant at less than 5 percent. While the univariate analysis has already demonstrated that there is a significant negative correlation between *GDPGROWTH* (coeff. -0.30; p-value 0.016*) and the dependent variable, *INFLRATE* (coeff. 0.11; p-value 0.390) is not significant, although the coefficient's signs keep positive in both analyses. The results of both coefficients reveal that firms from countries with higher inflation rate are more likely to early adopt the new accounting treatment of the own credit risk, because higher inflation rates can increase the bank risk, whereas firms from countries with higher GDP growth are less likely to early adopt the new accounting treatment of the own credit risk, since the country's economic development might provide profit opportunities for the firms, thus reducing bank risk.

The last two control variables are *CLIST* and *TIER1*. *CLIST* is also significant at less than 5 percent (coeff. -5.855; p-value 0.013*). This finding contradicts the univariate analysis, which shows a not statistically significant, but positive coefficient (coeff. 0.14; p-value 0.254). This finding corroborates to Jaafar and McLeay (2007), who provide evidence that listing status affects policy choices. *TIER1*, in its turn, had to be removed from the model because the regression does not run in the presence of such variable.

Regarding goodness of fit, the Pseudo R² of McFadden in the final model is 40.51 per cent. The area under the ROC (Receiver Operating Characteristics) curve is 0.9057,

indicating an excellent explanatory power in terms of separating early adopters from non-adopters, according to Fávero (2015). The Likelihood-Ratio Test (Prob > chi2 = 0.2508) reveals that the estimation of the final model does not change the adjustment quality, at less than 5 per cent significance level, after removing all variables that are not statistically significant. It means that the model after the stepwise²⁶ procedure is preferable when compared to the full model with all explanatory variables, according to Fávero (2015).

Finally, as presented in Section 3.1.2, two alternative models were considered to test hypotheses H1 to H3, mainly because of hypothesis 1. In equation (1), *ROE* was considered as a proxy to measure compensation plans. Alternatively, in equation (2), *CO* was used as a proxy to measure compensation plans, which is defined as a dummy variable equal to one when the financial institution adopts stock-option compensation, and zero otherwise. Since a hundred per cent of the early adopting firms has stock-option compensation, *CO* is not a good predictor to explain why firms early adopt the new accounting treatment. Due to such factor, when the logit model was run, the variable *CO* and the interactive variable *CO*POSOGR* are omitted, and there is no model, as a result. For further details about the statistics for equation (2), please see Appendix A, item (a).

4.1.3 Regression analysis – Hypothesis 4

Table 10 presents the regression summary statistics for equation (3). The analysis of these results permits to conclude about Hypotheses H4 - *Financial institutions with higher earnings volatility are more likely to early adopt the new accounting treatment of the own credit risk*.

Although the behaviour of net income presented in Figures 15 and 16 might have put pressure on the early adopters to remove all effects that contribute to earnings volatility, which might be the case of changes in fair value attributable to changes in firm's credit risk in net income, and the univariate analysis demonstrates that the variable *EARVOL* is significantly positively correlated to the dependent variable (coeff. 0.31; p-value 0.031*), the regression analysis reveals that the coefficient of *EARVOL* is not statistically significant (coeff. 0.153; p-value 0.433) to explain why firms early adopted the new accounting treatment of the own credit risk.

²⁶ The stepwise procedure is used to analyse different combinations of explanatory variables that are used in regression analysis in an attempt to come up with the best model. (Wooldridge, 2012).

Since *EARVOL* is the variable of interest that address Hypothesis 4 and its finding is not statistically significant at less than 5 per cent, it is possible to reject the hypothesis that firms with higher earnings volatility are more likely to early adopt the new accounting treatment of the own credit risk without early adopting IFRS 9 entirely.

Table 10 – Summary statistics for equation (3)

$z = ADOPT = \beta_0 + \beta_1 EarVol_i + Controls_i$				
Variables	Full model		Final model	
	Coeff.	p-value	Coeff.	p-value
Intercept	48.683	0.377	4.105	0.084
EARVOL	0.153	0.433		
LEV	3.988	0.943		
SIZE	(1.827)	0.150		
ROE	13.949	0.328		
ENFORC	3.603	0.134		
INFLRATE	4.911	0.050	2.210	0.016 *
GDPGROWTH	(4.961)	0.066	(2.466)	0.007*
CLIST	(4.306)	0.123	(3.648)	0.027*
TIER1	(121.873)	0.093		
Observations	41		41	
Likelihood ratio	28.21		17.19	
Prob > chi2	0.0009		0.0006	
Pseudo R ²	56.91%		34.67%	
Area under ROC Curve	0.9569		0.8391	
LR test (prob > chi2)	#		0.0876	

Table 10 reveals that macroeconomic factors are significant again to predict accounting choices. Both *INFLRATE* (coeff. 2.210; p-value 0.016*) and *GDPGROWTH* (coeff. -2.466; p-value 0.007*) are statistically significant at less than 5 percent. The results of both coefficients reveal that firms from countries with higher inflation rate are more likely to early adopt the new accounting treatment of the own credit risk, whereas firms from countries with higher GDP growth are less likely to early adopt the new accounting treatment of the own credit risk. These findings corroborate to those provided by equation (1).

Again, the control variable *CLIST* is significant at less than 5 per cent (coeff. -3.648; p-value 0.027*), which corroborates to the finding in equation (1). *TIER1*, in its turn, is not statistically significant (coeff. -121.873; p-value 0.093) to predict why firms early adopted the new accounting treatment of the own credit risk. This finding is consistent with the one provided by the univariate analysis, which shows that *TIER1* (coeff. -0.13; p-value 0.358) is negatively correlated with the dependent variable, although it is not statistically significant at less than 5 per cent.

Going further, the control variables *LEV* (coeff. 3.988; p-value 0.943) and *SIZE* (coeff. -1.827; p-value 0.150) are not statistically significant at less than 5 per cent, which corroborates to the findings in equation (1). On the other hand, contradicting the finding in Table 9, *ROE* (coeff. 13.949; p-value 0.328) is not significant in the presence of the explanatory variable *EARVOL*, which puts in doubt its robustness to explain the accounting choice. The same conclusion is obtained on the variable *ENFORC* (coeff 3.603; p-value 0.134), which is also not significant at less than 5 per cent in the presence of the explanatory variable *EARVOL*.

Finally, regarding the goodness of fit, the Pseudo R^2 of McFadden is 34.67 per cent. The area under the ROC curve is 0.8391, indicating a lower explanatory power in terms of separating early adopters from non-adopters when compared to equation (1). The Likelihood-Ratio Test (Prob > chi2 = 0.0876) reveals that the estimation of the final model does not change the adjustment quality, at less than 5 per cent significance level, after removing all variables that are not statistically significant. It means that the model after the stepwise procedure is preferable when compared to the full model with all explanatory variables, according to Fávero (2015).

4.1.4 Regression analysis – Hypothesis 5

Table 11 presents the regression summary statistics for equation (4). The analysis of these results permits to conclude about Hypotheses H5 - *Financial institutions with higher volatility in available-for-sale unrealised gains or loss are more likely to early adopt the new accounting treatment of the own credit risk.*

The coefficient of variable *UGLAFSVOL* is not statistically significant (coeff. 0.953; p-value 0.651) to explain why firms early adopted the new accounting treatment of the own credit risk. Such finding is consistent with the univariate analysis, which shows that *UGLAFSVOL* is positively correlated with the dependent variable, although it is not significant at less than 5 per cent (coeff. 0.26; p-value 0.0739).

Since *UGLAFSVOL* is the variable of interest that address Hypothesis 5, and its finding is not statistically significant at less than 5 per cent, it is possible to reject the hypothesis that firms with higher volatility in available-for-sale unrealised gains or losses are more likely to early adopt the new accounting treatment of the own credit risk without early adopting IFRS 9 entirely.

Table 11 – Summary statistics for equation (4)

$z = ADOPT = \beta_0 + \beta_1 UGLAFSVol_i + Controls_i$				
Variables	Full model		Final model	
	Coeff.	p-value	Coeff.	p-value
Intercept	26.880	0.660	3.778	0.155
UGLAFSVOL	0.953	0.651		
LEV	29.461	0.628		
SIZE	(2.203)	0.102		
ROE	(0.475)	0.958		
ENFORC	4.897	0.077	2.059	0.017*
INFLRATE	3.579	0.076		
GDPGROWTH	(3.698)	0.130		
CLIST	(5.244)	0.101		
TIER1	(91.403)	0.145	(50.140)	0.043*
Observations	38		38	
Likelihood ratio	20.30		9.89	
Prob > chi2	0.0162		0.0071	
Pseudo R ²	46.34%		22.58%	
Area under ROC Curve	0.9143		0.8000	
LR test (prob > chi2)	#		0.1668	

In the same way as in equation (1), Table 11 reveals that *ENFORC* has a statistically positive coefficient of 2.059 (p-value 0.017*), which is consistent with the result in the univariate analysis (coeff. 0.23), although, in the latter, the coefficient is not statistically significant at less than 5 per cent. Such finding corroborates to Ball et al. (2000), who hypothesise and find evidence that institutional factors affect accounting practice.

Table 11 also reveals that *TIER1* (coeff. -50.140; p-value 0.043*) is statistically significant at less than 5 per cent. Such finding is consistent with the univariate analysis, which indicates that *TIER1* is negatively correlated with the dependent variable (coeff. -0.13; p-value 0.358), although in the latter, the coefficient is not statistically significant at less than 5 per cent. According to Song (2008), as bank capital increases, the ability to bear risk increases. With more risky assets, earnings may be more volatile. One possible way to mitigate such volatility is maintaining the own credit risk gains or losses in earnings. Therefore, the higher Tier 1 is, the less likely to early adopt, which is consistent with the finding presented in Table 11.

In equation (4), both macroeconomics factors, *INFLRATE* (coeff. 3.579; p-value 0.076) and *GDPGROWTH* (coeff. -3.698; p-value 0.130) are not significant to predict accounting choices, contradicting the findings in equation (1) and equation (3). The same can be said about *CLIST* (coeff. -5.244; p-value 0.101), which is not significant, also contradicting the findings in equation (1) and equation (3). Moreover, a similar comment can be made about

ROE (coeff. -0.475; p-value 0.958), which again is not statistically significant at less than 5 per cent, which contradicts the finding in equation (1).

Going further, the control variables *LEV* (coeff. 29.461; p-value 0.628) and *SIZE* (coeff. -2.203; p-value 0.102) are not statistically significant at less than 5 percent.

Finally, regarding the goodness of fit, the Pseudo R^2 of McFadden is 22.58 per cent. The area under the ROC curve is 0.8000, indicating a lower explanatory power in terms of separating early adopters from non-adopters when compared to equation (1) and equation (3). The Likelihood-Ratio Test (Prob > chi2 = 0.1668) reveals that the estimation of the final model does not change the adjustment quality, at less than 5 per cent significance level, after removing all variables that are not statistically significant. It means that the model after the stepwise procedure is preferable when compared to the full model with all explanatory variables, according to Fávero (2015).

4.1.5 Additional analysis – Hypothesis H1 to H3

According to the Pearson correlation matrix presented in Table 8, the interactive variables *CO*POSO*, *LEV*NEGO* and *SIZE*POSO* are highly correlated with the dummy variables *NEGO* and *POSO*, which might create multicollinearity problems and bias the statistics results. (Fávero, 2015).

With the intent to address such problem, equation (1) was rerun, however, without the dummy variables *NEGO* and *POSO*. Regression summary statistics for equation (1) is presented in Table 12. The analysis of these results permits to conclude about Hypotheses H1 to H3.

Based on the final model presented in Table 12, it is possible to obtain the same conclusions as those previously presented in Section 4.1.2. A possible explanation for getting the same results is the fact that the stepwise procedure has already solved any possible multicollinearity problem that might exist in the full model.

The variables of interest *LEV*NEGO*, *SIZE*POSO* and *ROE*POSO* are not statistically significant at less than 5 per cent, which also rejects Hypotheses H1 to H3. Again, only *ROE* (coeff. -16.658; p-value 0.019*), the macroeconomics variables *INFLRATE* (coeff. 1.226; p-value 0.028*) and *GDPGROWTH* (coeff. -1.602; p-value 0.027), the institutional factor *ENFORC* (coeff. 2.281; p-value 0.035*) and the variable *CLIST* (coeff. -5.855; p-value 0.013*) are statistically significant at less than 5 percent.

Table 12 – Summary statistics for equation (1) without dummy variables *NEGO*CR and *POS*OCR
$$z = ADOPT = \beta_0 + \beta_1 ROE_i + \beta_2 LEV_i + \beta_3 SIZE_i + \beta_4 ROE_i * POSOCR_i + \beta_5 LEV_i * NEGO CR_i + \beta_6 SIZE_i * POSOCR_i + Controls_i$$

Variables	Full model		Final model	
	Coeff.	p-value	Coeff.	p-value
Intercept	(37.877)	0.067	3.568	0.125
LEV	60.539	0.078		
SIZE	(0.617)	0.440		
ROE	(37.333)	0.052	(16.658)	0.019*
LEV*NEGO	(0.140)	0.942		
SIZE*POSOCR	0.007	0.962		
ROE*POSOCR	17.477	0.454		
ENFORC	3.345	0.190	2.281	0.035*
INFLRATE	2.314	0.072	1.226	0.028*
GDPGROWTH	(2.350)	0.047	(1.602)	0.027*
CLIST	(10.248)	0.072	(5.855)	0.013*
Observations	44		44	
Likelihood ratio	28.94		21.64	
Prob > chi2	0.0013		0.0006	
Pseudo R ²	54.18%		40.51%	
Area under ROC Curve	0.9429		0.9057	
LR test (prob > chi2)	#		0.1993	

Regarding goodness of fit, the Pseudo R² of McFadden is 40.51 per cent. The area under the ROC curve is 0.9057, indicating an excellent explanatory power in terms of separating early adopters from non-adopters, according to Fávero (2015). The Likelihood-Ratio Test (Prob > chi2 = 0.1993) reveals that the estimation of the final model does not change the adjustment quality, at less than 5 per cent significance level, after removing all variables that are not statistically significant. It means that the model after the stepwise procedure is preferable when compared to the full model with all explanatory variables, according to Fávero (2015).

Finally, as previously mentioned, two alternative models were considered to test hypotheses H1 to H3, mainly because of hypothesis 1. In equation (1), *ROE* was considered as a proxy to measure compensation plans. Alternatively, in equation (2), *CO* was used as a proxy to measure compensation plans, which is defined as a dummy variable equal to one when the financial institution adopts stock-option compensation, and zero otherwise. Since a hundred per cent of the early adopting firms has stock-option compensation, *CO* is not a good predictor to explain why firms early adopt the new accounting treatment. Due to such factor, when the logit model was run, the variable *CO* is omitted. Although some variables are statistically significant at less than 5 per cent, in the full model, after taking the stepwise

procedure, there is no final model. For further details about the statistics for equation (2), after removing the dummy variables *NEGOOCR* and *POSOOCR*, please see Appendix A, item (b).

4.2 Own credit risk and value relevance

I address one specific question in this section: has the market priced the new accounting treatment of the own credit risk of financial liabilities designated as at FVTPL? Firstly, I present the descriptive statistics and then, the findings from the econometric models estimated to answer Hypothesis 6, whose details were introduced in Section 3.2.

4.2.1 Descriptive statistics – regular adopters in 2018

Table 13 presents the descriptive statistics of regular adopters that mandatorily adopted the new accounting treatment of the fair value changes attributable to changes in firm's credit risk of financial liabilities designated as at FVTPL in the first semester of 2018.

Table 13 – Descriptive statistics of Regular Adopters

Variables	Mean	Median	Standard deviation	Min	Max
PRICE	11.774	2.895	15.828	0.233	62.173
NIS	1.001	0.276	1.389	(0.003)	5.620
NIINCLS	1.005	0.276	1.394	(0.003)	5.626
BVES	24.346	3.762	47.142	0.226	285.579
SIZE	19.059	19.352	2.035	12.984	22.139
LEV	0.892	0.926	0.094	0.446	0.960

Table 13 reports the means, medians, standard deviation, minimum, and maximum of the explanatory and control variables of the regular adopters, in the first semester of 2018. Focusing on the effect of the gains or losses attributable to changes in firm's credit risk, when we compare the descriptive statistics of the Net Income (*NIS*) as reported, according to IFRS 9, to the Net Income as if it was prepared according to IAS 39 (*NIINCLS*), in regards to the way the own credit risk is recorded, it is possible to see that they are approximately the same.

It is important to highlight that we can observe high standard deviations in explanatory variables, indicating that the database is formed by different firms, which produces a set of

expressively heterogeneous elements. This is an expected feature for the sample arrangement formed, due to the insertion of organisations from various countries.

With the aim to improve the associations among the dependent variables and the explanatory variables, taking into account the heterogeneity of the sample, control variables were included, such as size, leverage, and country dummies.

Table 14 presents the Pearson correlation, highlighting whether the correlation of each variable is statistically significant at 5 per cent level or less. Such an univariate analysis shows the linear interrelation among the variables. However, it is not possible to ensure that such indicators will keep the same sign and significance in the estimated models.

Table 14 – Pearson Correlation of Explanatory and Control variables – Value Relevance

	PRICE	NIS	NIINCLS	BVES	SIZE	LEV
PRICE	1.000					
NIS	0.796*	1.000				
NIINCLS	0.796*	0.999*	1.000			
BVES	0.541*	0.864*	0.863*	1.000		
SIZE	0.083	0.167	0.172	0.048	1.000	
LEV	0.306*	0.263	0.264	0.133	0.685*	1.000

* denotes correlations are significant at 5 percent level or less.

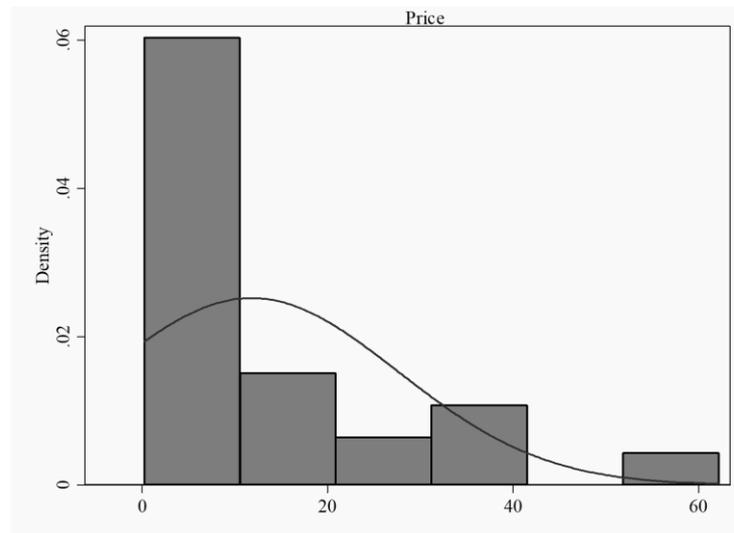
Table 14 reveals that *PRICE* is significantly positively correlated with each explanatory variable in equations (5) and (6). Both *NIS* (coeff. 0.796; p-value 0.000*) and *NIINCLS* (coeff. 0.796; p-value 0.000*) are positively correlated to *PRICE*, which demonstrates that removing the effect of the own credit risk from the income statement does not change the correlation between price and net income. This finding indicates a previous positive relationship between net income and share prices, in both cases (*NIS* and *NIINCLS*).

It is important to emphasise that the presentation of the correlation coefficients is a step of an exploratory data analysis, with the aim to show the linear and individual behaviour between the dependent variable and each explanatory variable. Such presentation does not allow the rejection of previously established hypothesis studied in this research.

Focusing on the dependent variable, it is appropriate to analyse its distribution, for the purpose of the econometric model that is going to be analysed in the next section. Thus, firstly, I obtained the histogram of the dependent variable *Price*. The objective is to analyse

the data asymmetry about its mean, which is an essential condition for robust statistical modelling.

Figure 21 - Histogram of the dependent variable – *Price*



Source: Prepared by the author

Based on the observed behaviour in the variable's distribution in Figure 21, it is possible to conclude that the variable *Price* does not meet the assumption of normality. According to Wooldridge (2012), even though the dependent variable is not from a normal distribution, we can use the central limit theorem (CLT)²⁷ to conclude that the estimators satisfy asymptotic normality, i.e., they are approximately normally distributed in large enough sample sizes. The author adds that unfortunately, there are no general prescriptions on how big the sample must be before such approximation is good enough.

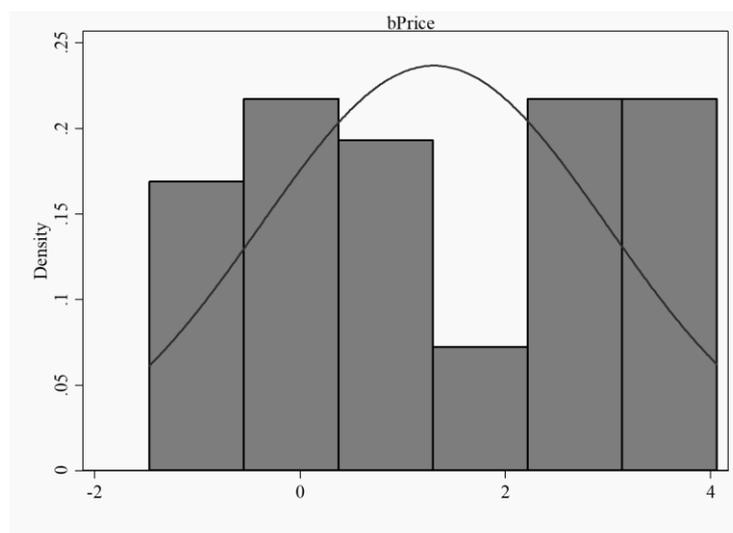
According to Flores (2016), the verification of items whose distributions diverge from normality, especially in the accounting field, can be attributed, at least in part, to the way samples are selected, which is not performed in a random manner, as in the case of this research, in which all firms were obtained deterministically.

With the aim to attenuate such limitation, I made a Box-Cox transformation (Box & Cox, 1964) on the dependent variable *Price*, following Fávero's (2015) recommendation.

²⁷ Central Limit Theorem (CLT): "A key result from probability theory which implies that the sum of independent random variables, or even weakly dependent random variables, when standardized by its standard deviation, has a distribution that tends to standard normal as the sample size grows." (Wooldridge, 2012, p. 836).

Figure 22 shows the distribution of $bPrice$, which is the dependent variable $Price$ after the Box-Cox transformation.

Figure 22 - Histogram of the dependent variable – $bPrice$



Source: Prepared by the author

When we compare the distribution of $Price$, in Figure 21, to the distribution of $bPrice$, in Figure 22, it is possible to see that after the Box-Cox transformation, the dependent variable $bPrice$ shows a behaviour closer to a normal distribution. In order to confirm whether the variable $bPrice$ meets the assumption of normality, I performed a Shapiro-Francia test (Shapiro & Francia, 1972), whose result (z-value: 1.420; p-value: 0.07774) does not permit to reject the null hypothesis that the distribution is normal. Thus, the variable $bPrice$ meets the assumption of normality.

4.2.2 Regression analysis – Hypothesis 6

Table 15 presents the regression summary statistics for equation (5), whereas Table 16 presents the regression summary statistics for equation (6). The analysis of both results permits to conclude about Hypothesis 6 - *The value relevance of the net income figure significantly increases after recognising changes in fair value attributable to changes in own credit risk in other comprehensive income rather than in the income statement, due to the mandatory adoption of IFRS 9*. It is important to emphasise that the model is run considering the variable $bPrice$ as the dependent variable.

Table 15 – Summary statistics for equation (5)

$P_i = \beta_0 + \beta_1 NIS_i + \beta_2 BVES_i + Controls + \epsilon_i$				
Variables	Full model		Final model	
	Coeff.	p-value	Coeff.	p-value
Intercept	4.457	0.032*	2.423	0.000*
NIS	0.433	0.098	0.290	0.005*
BVES	(0.008)	0.213		
Size	(0.007)	0.947		
Lev	(1.527)	0.604		
China	(3.001)	0.002*	(2.405)	0.000*
Denmark	(0.121)	0.887		
France	(0.076)	0.934		
Germany	(0.420)	0.713		
Italy	(1.305)	0.134	(0.836)	0.028*
Malaysia	(2.406)	0.018*	(1.884)	0.001*
Netherlands	(0.447)	0.584		
Norway	(0.305)	0.766		
Portugal	(4.265)	0.001*	(3.743)	0.000*
Republic of Korea	(0.568)	0.479		
Russian Federation	(2.035)	0.068	(1.456)	0.040*
Spain	(1.437)	0.194		
Sweden	(0.673)	0.523		
Switzerland	0.348	0.733		
Taiwan	(3.809)	0.000*	(3.239)	0.000*
United Arab Emirates	(4.955)	0.002*	(3.693)	0.000*
Sample size	45		45	
F-statistic	12.28		33.91	
Prob > F	0.0000		0.0000	
Adjusted R ²	83.68%		85.68%	
AIC	106.84		95.22	
BIC	144.78		111.48	
Shapiro-Francia p-value	0.02		0.97	
Mean VIF	4.92		1.47	
Breusch-Pagan p-value	#		0.45	

* denotes statistically significant at 5 per cent level or less.

Table 15 reveals that the coefficient on *NIS* is significantly positive (coeff. 0.290; p-value 0.005*) at less than 5 per cent level. This means that there is a positive relation between share prices and the net income as reported according to IFRS 9. Such finding corroborates to previous literature, which has demonstrated that there is a significantly positive relation between share prices and net income (e.g., Barth, Landsman et al., 2008; Lopes & Walker, 2012; van Veen, 2011; Barth et al. 2017).

Although the univariate analysis demonstrated that *BVES* is correlated to the dependent variable *Price* (coeff. 0.541; p-value 0.0001*), such relation was not confirmed in the regression analysis. *BVES* is not statistically significant to explain share prices, and they

have a negative relation (coeff. -0.008; p-value 0.213), which contradicts the findings of Barth et al. (2014; 2017) and Lopes and Walker (2012), for instance.

Beisland (2009) explains that even though a vast literature document that book values of equity are highly associated with share prices, that the statistical association between share prices and book value is typically stronger than the association between stock returns and earnings, the value relevance of balance sheet measures is sensitive to the valuation principles applied to the various asset and debt components. Moreover, Barth, Beaver, and Landsman (1998) show that the value relevance of the balance sheet is related to financial health since the sensitivity of the equity book value to the equity market value increases as financial health decreases and vice-versa.

Additionally, in the present study, according to the Pearson Correlation presented in Table 14, *NIS* has a higher correlation (coeff. 0.796) with price than *BVES* (coeff. 0.541). Moreover, *BVES* is highly correlated with *NIS* (coeff. 0.864). Since both are very similar in explaining the market price, due to possible problems of multicollinearity, the stepwise procedure might have kept the variable that better explains the price, and this is why *BVES* was eliminated while *NIS* was kept in the final model.

Therefore, based on such explanations, the lack of significance of *BVES* might be explained by the components of the financial institutions' balance sheets, the way such components are measured, how financial healthy or not they are, and by the statistical procedure to find the best model to explain the dependent variable.

Regarding the assumptions of multiple linear regressions, all of them are met in the tests for equation (5). In order to test whether the residuals are normally distributed, I performed a Shapiro-Francia test (Shapiro & Francia, 1972), whose result in the final model (z-value: -1.925; p-value: 0.97) does not permit to reject the null hypothesis that the distribution is normal. Thus, residuals meet the assumption of normality.

The model does not have problems with multicollinearity, which was confirmed by the Variance Inflation Factor (VIF) values, following the recommendation of Fávero (2015). The final model has a mean VIF of 1.47 (range from 1.12 to 2.11). Finally, the last assumption regards the variance of error terms across the values of the independent variables. In order to confirm whether the error terms are homoskedasticity, I performed the Breusch-Pagan test (Breusch & Pagan, 1979), whose result in the final model (chi2: 0.58, p-value: 0.45) does not permit to reject the null hypothesis that the error terms are homoscedastic. Thus, the assumption of homoskedasticity is also met.

Table 16 presents the regression summary statistics for equation (6), which also aim to analyse Hypothesis 6. In the same way as Table 15, Table 16 reveals that the coefficient on *NIINCLS* is significantly positive (coeff. 0.289; p-value 0.005*) at less than 5 per cent level. This means that there is a positive relation between share prices and the net income as if it was prepared according to IAS 39, in regards to the way the own credit risk is treated.

Similarly, although the univariate analysis demonstrated that *BVES* is correlated to the dependent variable *Price* (coeff. 0.541; p-value 0.0001*), such relation was not confirmed in the regression analysis. *BVES* is not statistically significant to explain share prices, and they have a negative relation (coeff. -0.007; p-value 0.233). The same explanation aforementioned might be applicable in this model.

Regarding the assumptions of multiple linear regressions, all of them are met in the tests for equation (6). In order to test whether the residuals are normally distributed, I performed a Shapiro-Francia test (Shapiro & Francia, 1972), whose result in the final model (z-value: -1.737; p-value: 0.96) does not permit to reject the null hypothesis that the distribution is normal. Thus, residuals meet the assumption of normality.

The model does not have problems with multicollinearity, which was confirmed by the VIF values, following the recommendation of Fávero (2015). The final model has a mean VIF of 1.47 (range from 1.12 to 2.11). Finally, the last assumption regards the variance of error terms across the values of the independent variables. In order to confirm whether the error terms are homoskedasticity, I performed the Breusch-Pagan test (Breusch & Pagan, 1979), whose result in the final model (chi2: 0.57, p-value: 0.45) does not permit to reject the null hypothesis that the error terms are homoscedastic. Thus, the assumption of homoskedasticity is also met.

Comparing the adjusted R^2 of both final models, reported in Table 15 and Table 16, it is possible to see that the adjusted R^2 of the model using net income including the effect of the own credit risk (*NIINCLS*), as if it was measured according to IAS 39, is slightly lower than the model using net income as reported according to IFRS 9.

Table 16 – Summary statistics for equation (6)

$P_i = \beta_0 + \beta_1 NIINCLS_i + \beta_2 BVES_i + Controls + \epsilon_i$				
Variables	Full model		Final model	
	Coeff.	p-value	Coeff.	p-value
Intercept	4.467	0.032*	2.424	0.000*
NIINCLS	0.413	0.111	0.289	0.005*
BVES	(0.007)	0.233		
Size	(0.010)	0.928		
Lev	(1.451)	0.624		
China	(3.023)	0.002*	(2.407)	0.000*
Denmark	(0.129)	0.881		
France	(0.081)	0.930		
Germany	(0.500)	0.659		
Italy	(1.334)	0.127	(0.839)	0.028*
Malaysia	(2.435)	0.018*	(1.886)	0.001*
Netherlands	(0.435)	0.596		
Norway	(0.320)	0.756		
Portugal	(4.297)	0.001*	(3.745)	0.000*
Republic of Korea	(0.557)	0.489		
Russian Federation	(2.055)	0.067	(1.458)	0.040*
Spain	(1.458)	0.190		
Sweden	(0.697)	0.510		
Switzerland	0.303	0.768		
Taiwan	(3.841)	0.000*	(3.240)	0.000*
United Arab Emirates	(4.966)	0.002*	(3.695)	0.000*
Sample size	45		45	
F-statistic	12.16		33.86	
Prob > F	0.0000		0.0000	
Adjusted R ²	83.54%		85.66%	
AIC	107.24		95.27	
BIC	145.18		111.53	
Shapiro-Francia p-value	0.03		0.96	
Mean VIF	4.91		1.47	
Breusch-Pagan p-value	#		0.45	
Vuong Z-statistic	#		-0.21	
Vuong p-value	#		0.835	

* denotes statistically significant at 5 per cent level or less.

In order to test whether the difference between the adjusted R² of both models is significant, I performed the Vuong test (Vuong, 1989), following previous literature (e.g., Dhaliwal et al., 1999; Barth et al., 2014). The result of such test (-0.21, p-value 0.835) indicates that the difference in adjusted R² is not statistically significant at 5 per cent level or less.

Additionally, I also performed the Akaike's information criterion - AIC (Akaike, 1974) and Bayesian information criterion – BIC (Raftery, 1995) tests. In both tests, the

smallest result indicates the better-fitting model. Comparing the results of both final models, reported in Table 15 and Table 16, it is possible to see that the smallest AIC and BIC is provided by the model using net income reported according to IFRS 9 (*NIS*).

Based on these findings, it is possible to reject the hypothesis that the value relevance of the net income figure significantly increases after recognising changes in fair value attributable to changes in own credit risk in other comprehensive income rather than in the income statement, due to the mandatory adoption of IFRS 9, despite the slight increase in the adjusted R^2 . This finding corroborates to van Veen's (2011) findings, who also concluded that the value relevance had not been increased after eliminating the own credit risk out of the net income figure.

4.2.3 Additional analysis – Hypothesis 6

When we review the extant literature, it is possible to note that there is no consensus in regards to what price to use. In general, the prices chosen are those four months after the period-end (e.g., Barth et al., 1996, 2014; Lopes & Walker, 2012) or three months after the period-end (e.g., Barth et al., 2017; Flores, 2016; Francis & Schipper, 1999).

In order to confirm whether the results could be biased due to the price chosen, I also performed the same tests considering the price of 3 months after the period-end analysed. The results obtained are similar, which give robustness to the finding that the value relevance of the net income figure does not significantly increase after recognising changes in fair value attributable to changes in own credit risk in other comprehensive income rather than in the income statement, due to the mandatory adoption of IFRS 9.

Table 17 reveals that the coefficient on *NIS* is significantly positive (coeff. 0.285; p-value 0.006*) at less than 5 per cent level. Again, *BVES* is not statistically significant to explain share prices, and their relation is negative (coeff. -0.008; p-value 0.171). All assumptions of multiple linear regression are met.

Table 17 – Summary statistics for equation (5) considering the price of 3 months

$P_i = \beta_0 + \beta_1 NIS_i + \beta_2 BVES_i + Controls + \epsilon_i$				
Variables	Full model		Final model	
	Coeff.	p-value	Coeff.	p-value
Intercept	4.331	0.035*	2.513	0.000*
NIS	0.449	0.084	0.285	0.006*
BVES	(0.008)	0.171		
Size	(0.009)	0.927		
Lev	(1.373)	0.638		
China	(2.956)	0.002*	(2.489)	0.000*
Denmark	0.099	0.907		
France	0.068	0.940		
Germany	(0.258)	0.819		
Italy	(1.123)	0.191	(0.769)	0.043*
Malaysia	(2.333)	0.021*	(1.934)	0.001*
Netherlands	(0.370)	0.647		
Norway	(0.176)	0.863		
Portugal	(4.167)	0.001*	(3.767)	0.000*
Republic of Korea	(0.485)	0.541		
Russian Federation	(1.932)	0.080	(1.479)	0.038*
Spain	(1.372)	0.210		
Sweden	(0.539)	0.605		
Switzerland	0.431	0.670		
Taiwan	(3.702)	0.000*	(3.256)	0.000*
United Arab Emirates	(4.908)	0.002*	(3.825)	0.000*
Sample size	45		45	
F-statistic	12.93		34.80	
Prob > F	0.0000		0.0000	
Adjusted R ²	84.43%		86.00%	
AIC	106.05		95.50	
BIC	143.99		111.76	
Shapiro-Francia p-value	0.01		0.96	
Mean VIF	4.92		1.47	
Breusch-Pagan p-value	#		0.53	

* denotes statistically significant at 5 per cent level or less.

Table 18 presents the regression summary statistics for equation (6), considering the price of three months after the period-end analysed. In the same way as Table 17, Table 18 reveals that the coefficient on *NIINCLS* is significantly positive (coeff. 0.284; p-value 0.006*) at less than 5 per cent level. This means that there is a positive relation between share prices and the net income as if it was prepared according to IAS 39, in regards to the way the own credit risk is treated.

Again, *BVES* is not statistically significant to explain share prices, and the relation is negative (coeff. -0.008; p-value 0.188), similarly to Table 17. All assumptions of multiple linear regression are met.

Table 18 – Summary statistics for equation (6) considering the price of 3 months

$P_i = \beta_0 + \beta_1 NIINCLS_i + \beta_2 BVES_i + Controls + \epsilon_i$				
Variables	Full model		Final model	
	Coeff.	p-value	Coeff.	p-value
Intercept	4.342	0.035*	2.514	0.000*
NIINCLS	0.429	0.096	0.284	0.006*
BVES	(0.008)	0.188		
Size	(0.012)	0.907		
Lev	(1.293)	0.659		
China	(2.976)	0.002*	(2.490)	0.000*
Denmark	0.091	0.915		
France	0.063	0.945		
Germany	(0.340)	0.762		
Italy	(1.152)	0.181	(0.771)	0.043*
Malaysia	(2.362)	0.020*	(1.935)	0.001*
Netherlands	(0.358)	0.660		
Norway	(0.190)	0.852		
Portugal	(4.199)	0.001*	(3.768)	0.000*
Republic of Korea	(0.474)	0.552		
Russian Federation	(1.951)	0.078	(1.479)	0.038*
Spain	(1.392)	0.206		
Sweden	(0.563)	0.591		
Switzerland	0.384	0.706		
Taiwan	(3.734)	0.000*	(3.257)	0.000*
United Arab Emirates	(4.917)	0.002*	(3.826)	0.000*
Sample size	45		45	
F-statistic	12.80		34.77	
Prob > F	0.0000		0.0000	
Adjusted R ²	84.29%		85.99%	
AIC	106.47		95.54	
BIC	144.41		111.80	
Shapiro-Francia p-value	0.01		0.95	
Mean VIF	4.91		1.47	
Breusch-Pagan p-value	#		0.53	
Vuong Z-statistic	#		-0.14	
Vuong p-value	#		0.887	

* denotes statistically significant at 5 per cent level or less.

Comparing the adjusted R² of both final models, reported in Table 17 and Table 18, it is possible to see that the adjusted R² of the model using net income including the effect of the own credit risk (*NIINCLS*), as if it was measured according to IAS 39, is slightly lower than the model using net income as reported according to IFRS 9. In order to test whether the difference between them is significant, I performed the Vuong test (Vuong, 1989). The result of such test (-0.14, p-value 0.887) indicates that the difference in adjusted R² is not statistically significant at 5 per cent level or less.

AIC and BIC tests also corroborate to the same finding, since they show that the smallest value is provided by the model using net income as reported according to IFRS 9 (*NIS*).

Therefore, even if the price of three months after the period-end is used, the findings reveal that it is possible to reject the hypothesis that the value relevance of the net income figure significantly increases after recognising changes in fair value attributable to changes in own credit risk in other comprehensive income rather than in the income statement, due to the mandatory adoption of IFRS 9.

Since different authors express advantages and limitations in the use of price and returns approaches (e.g., Kothari & Zimmerman, 1995; Easton, 1999; Dhaliwal et al., 1999; Barth et al., 2001), it is recommended the use of both models to test the value relevance of an accounting information, in order to mitigate the gaps of each of them and draw more definite inferences (Kothari & Zimmerman, 1995). Examples of studies applying both models to test value relevance of accounting information are Dhaliwal et al. (1999), Barth, Landsman et al. (2008), Lima (2010), Lopes and Walker (2012), and Flores (2016). Taking into consideration the recommendation made by the authors mentioned above, I also performed an analysis considering the Returns model.

Because the focus of return studies is on the events that have affected prices over the return interval, they address the question of the accounting information's timeliness and expect to answer the following question: is the value change as reported in the financial statements contemporaneous with the change in market value? (Easton, 1999).

Due to a lack of available information regarding the gains or losses attributable to changes in the firm's credit risk, instead of doing a quarterly analysis, the study had to consider the semi-annual financial information available. Since returns model is more sensitive to all available information on the market and considering that the sample mainly comprises companies within more efficient markets, it was expected that the returns model would fail to provide information regarding the value relevance of net income figures. Relying on the Ohlson's model (1995), Appendix B provides the findings of the returns' tests carried out considering the net income as reported, according to IFRS 9, and the net income as if it was reported according to IAS 39, concerning the way the own credit risk is treated. Moreover, the tests consider both returns of 4 months and returns of 3 months, similarly to the approach used in the price models. Returns of 4 months are measured from 4 months after the year-end $t-1$ to 4 months after the end of semester t , following Chambers, Linsmeier,

Shakespeare, and Sougiannis (2007) and Lin, Martinez, Wang, and Yang (2018), while returns of 3 months are measured from 3 months after the year-end $t-1$ to 3 months after the end of semester t .

As predicted, only control variables remain in all models. Moreover, the models do not meet all assumptions of multiple linear regressions. For further details, please see Appendix B.

In conclusion, the returns model seems not to be appropriate to analyse the firms included in the sample, and the main reason for that might be the lack of timely information for their value relevance analysis.

5 CONCLUSIONS AND FINAL REMARKS

The requirements for reporting financial instruments have been considered complex by many preparers of financial statements, their auditors, and users of financial statements since IAS 39 was issued. In 2008, the financial crisis emerged IAS 39 weaknesses, being the IASB and the FASB pressured to accelerate the work on IFRS 9 – Financial Instruments, which is the standard that replaces the IAS 39.

In November 2009, IFRS 9 was issued, covering classification and measurement of financial assets. In October 2010, new requirements on accounting for financial liabilities were incorporated to IFRS 9, when it was reissued. The IASB decided to keep the requirements of IAS 39 for financial liabilities in IFRS 9, except the new requirements for the accounting and presentation of changes in the fair value of an entity's own credit risk when the entity has chosen to measure its debt at fair value under the fair value option.

To address the so-called own credit issue, IFRS 9 requires that changes in fair value attributable to changes in firm's credit risk of financial liabilities designated as at FVTPL, under the fair value option, must be recorded in OCI, rather than in the profit or loss, as it was previously required by IAS 39, unless such treatment would create or enlarge an accounting mismatch in profit or loss, when the changes should be treated in net income.

In November 2013, the IASB amended IFRS 9 to permit entities to early adopt the own credit risk requirements without adopting the other requirements of IFRS 9 at the same time. The change made in the accounting treatment of fair value gains or losses attributable to changes in firm's credit risk of financial liabilities designated as at FVTPL and the permission to early adopt only the "own credit" provisions in IFRS 9 instigated an analysis about the incentives for an entity to early adopt such accounting treatment without adopting IFRS 9 entirely and the effects of the new accounting treatment on the value relevance of net income figure.

In this sense, this investigation aims to answer two related questions: the incentives for financial institutions to early adopt only the new accounting treatment of the own credit risk of financial liabilities designated as at FVTPL, without early adopting IFRS 9 entirely, and whether the value relevance of accounting information has increased after such change in the accounting treatment of the own credit risk became mandatorily effective.

With the aim to answer the research questions, this investigation relies on the Positive Accounting Theory (Watts & Zimmerman, 1986), on the Accounting Choices' studies (Fields et al., 2001), and on the political and economic forces that influence the accounting practice (Ball et al., 2000; Ball, 2006), in order to explain the behaviour of firms regarding the early adoption of the new accounting treatment of the own credit risk of financial liabilities designated as at FVTPL, under IFRS 9, without early adopting the standard entirely. Furthermore, this study relies on the value relevance literature (e.g., Barth et al., 2001; Barth, Landsman et al., 2008; Barth, Hodder et al, 2008; van Veen, 2011; Barth et al., 2017) to address the question on whether the value relevance of net income figure has increased after the mandatory adoption of IFRS 9.

This investigation applies a cross-country approach, with the aim to have enough firms that apply the fair value option for financial liabilities. The sample comprises all international financial institutions that apply IFRS and have financial liabilities designated as at FVTPL. All data used in this study was hand-collected or extracted from Orbis/Orbis Bank Focus and Bloomberg, in order to avoid inconsistencies among so many different sources of information.

The early adoption of the accounting treatment of the fair value changes attributable to the own credit risk became available in November 2013. Since then, 43 firms around the globe early adopted the accounting treatment, mainly concentrated in the years 2016 and 2017.

However, due to a lack of available information, to the fact that IFRS 9 was only endorsed by the EFRAG, to be applied in Europe, at the end of 2016, and to the fact that the sample comprises many European firms, the examination of the determinants to early adopt the new accounting treatment of the own credit risk was concentrated in the year of 2017, when 13 firms early adopted the new accounting treatment without early adopting IFRS 9 entirely, out of 65 firms included in the final sample, being 76.9 per cent of the early adopters from Europe.

In order to test the accounting choice's hypotheses, cross-sectional multivariate logistic regression models were applied, following prior literature (e.g., Chang et al., 2011; van Veen, 2011; Xu & Tang, 2011; Wu et al., 2016).

Figure 23 summarises the main results with respect to the determinants for the accounting choice to early adopt the new accounting treatment of the own credit risk.

Figure 23 – Summary of accounting choice's results

Hypotheses	Predicted Sign	Variable of interest	Result	Conclusion
H1: Financial institutions with management bonus plans and positive fair value changes due to the own credit risk of financial liabilities designated as at FVTPL are less likely to early adopt the new accounting treatment of the own credit risk.	(-)	ROE*POSOCR	43.884 (0.254)	Reject
	(-)	CO*POSOCR	omitted	Not a good proxy
H2: Financial institutions with higher leverage and negative fair value changes due to the own credit risk of financial liabilities designated as at FVTPL are more likely to early adopt the new accounting treatment of the own credit risk.	(+)	LEV*NEGOCR	-96.561 (0.303)	Reject
H3: Larger financial institutions with positive fair value changes due to the own credit risk of financial liabilities designated as at FVTPL are more likely to early adopt the new accounting treatment of the own credit risk.	(+)	SIZE*POSOCR	1.592 (0.345)	Reject
H4: Financial institutions with higher earnings volatility are more likely to early adopt the new accounting treatment of the own credit risk.	(+)	EARVOL	0.153 (0.433)	Reject
H5: Financial institutions with higher volatility in available-for-sale unrealised gains or loss are more likely to early adopt the new accounting treatment of the own credit risk.	(+)	UGLAFSVOL	0.953 (0.651)	Reject

Source: Prepared by the author

Although the univariate analysis demonstrates that the interactive variable *ROE*POSOCR* is significantly negatively correlated to the dependent variable, such finding is not confirmed in the regression analysis. Based on Figure 23, it is possible to see that the coefficient of the interactive variable *ROE*POSOCR* is positive, but, not statistically significant at 5 per cent or less. Alternatively, *CO* was used as a proxy to measure compensation plans, which is defined as a dummy variable equal to one when the financial institution adopts stock-option compensation, and zero otherwise. Since a hundred per cent of the early adopting firms has stock-option compensation, *CO* is not a good predictor to explain why firms early adopt the new accounting treatment. Due to such factor, when the logit model was run, the variable *CO* and the interactive variable *CO*POSOCR* are omitted, and there is no model, as a result. Based on such findings, it is possible to reject the hypothesis (H1) that firms with management compensation plans and fair value gains

attributable to changes in the own credit risk recorded in the year prior to the early adoption period are less likely to early adopt the new accounting treatment of the own credit risk without early adopting IFRS 9 entirely.

*LEV*NEGOOCR* is the variable of interest that address Hypothesis 2. Based on Figure 23, it is possible to see that the interactive variable *LEV*NEGOOCR* presents a negative coefficient, but it is not statistically significant at less than 5 per cent. Based on such finding, it is possible to reject the hypothesis that more leveraged firms with fair value losses attributable to changes in the own credit risk recorded in the year before the early adoption period are more likely to early adopt the new accounting treatment of the own credit risk without early adopting IFRS 9 entirely.

Going further, *SIZE*POSOCR* is the variable of interest that address Hypothesis 3. Figure 23 shows that the interactive variable *SIZE*POSOCR* presents a positive coefficient, but it is not statistically significant at less than 5 per cent. Based on such finding, it is possible to reject the hypothesis that larger firms with fair value gains attributable to changes in the own credit risk recorded in the year before the early adoption period are more likely to early adopt the new accounting treatment of the own credit risk without early adopting IFRS 9 entirely.

Although earnings volatility was one of the concerns to put pressure on the IASB to change the accounting treatment of the own credit risk, and the univariate analysis demonstrates that the variable *EARVOL* is significantly positively correlated with the dependent variable, the regression analysis reveals that *EARVOL* is not statistically significant to explain why firms early adopted the new accounting treatment of the own credit risk, despite the positive sign. Since *EARVOL* is the variable of interest that address Hypothesis 4, it is possible to reject the hypothesis that firms with higher earnings volatility are more likely to early adopt the new accounting treatment of the own credit risk without early adopting IFRS 9 entirely.

Figure 23 also shows that *UGLAFSVOL* is not statistically significant to explain why firms early adopted the new accounting treatment of the own credit risk, despite its positive sign. Since *UGLAFSVOL* is the variable of interest that address Hypothesis 5, it is possible to reject the hypothesis that firms with higher volatility in available-for-sale unrealised gains or losses are more likely to early adopt the new accounting treatment of the own credit risk without early adopting IFRS 9 entirely.

It is important to emphasise that the logistic regression models run to address hypotheses H1 to H5 brought some exciting findings. For instance, the interactive variable *ROE*POSO*CR is not statistically significant to explain why firms early adopted the new accounting treatment of the own credit risk, but, *ROE* is significantly negatively correlated to the dependent variable. According to the compensation hypothesis (Watts & Zimmerman, 1978), managers are encouraged to adopt accounting procedures that increase their compensation. Considering that early adopters were those with an average lower level of *ROE*, such finding corroborates to the compensation hypothesis. Furthermore, the findings also reveal that institutional and macroeconomics factors predict early adoption. Such finding corroborates to Ball et al. (2000), who hypothesise and find evidence that institutional factors affect accounting practice.

Shedding light on the value relevance of accounting information, this research focus on the regular adopters in 2018. The cross-sectional multiple linear regression models used to test Hypothesis 6 rely on Ohlson's (1995) model and its subsequent refinements. The final sample comprises 45 firms that mandatorily adopted IFRS 9 in 2018 and, hence, the new accounting treatment of the own credit risk. Studying only firms that adopted IFRS 9 mandatorily has two benefits. First, it ensures that the differential effect of changing the accounting treatment of the fair value changes due to the firm's credit risk is analysed at the same point in time. Second, focusing on mandatory adopters avoids potential confounding effects on the inferences associated with differences in incentives for voluntary adopters.

In order to compare the value relevance on the net income figure, two different variables were used. The first one is *NIS*, which is the net income per share as reported by firms, according to IFRS 9. The second one is *NIINCLS*, which is the net income per share including the effect of the own credit risk reported in other comprehensive income, as if net income was reported according to IAS 39, with respect to the way the own credit risk is treated.

The findings reveal that both *NIS* and *NIINCLS* are positive and statistically significant at less than 5 per cent, even if the price used is got four months after the period-end or 3 months after the period-end, which shows robustness in the results.

Although the R^2 of the model considering the variable *NIS* is slightly higher than the R^2 of the model considering the variable *NIINCLS*, they are not statistically significant at 5 per cent level or less, according to the Vuong test (Vuong, 1989) performed.

Based on these findings, it is possible to reject the hypothesis (H6) that the value relevance of the net income figure significantly increases after recognising changes in fair value attributable to changes in own credit risk in other comprehensive income rather than in the income statement, due to the mandatory adoption of IFRS 9. This finding corroborates to van Veen's (2011) findings, who also concludes that the value relevance has not increased after eliminating the own credit risk out of the net income figure.

One avenue for future research is to investigate further the early adoption of the new accounting treatment of the own credit risk of financial liabilities designated as at FVTPL from an institutional perspective. Recent literature has shown that studies interacting the Positive Accounting Theory and the Institutional Theory to explain accounting choices are still incipient and there is an opportunity to contribute to the development of this field of study (e.g., Silva, Martins, & Lemes, 2016; Luz, Lisboa, Lavarda, & Vicente, 2017).

Shedding light on the value relevance perspective, an opportunity for future research is to analyse whether the value relevance of net income increased after the mandatory adoption of IFRS 9, comparing firms that had to mandatorily change the treatment of the own credit risk to firms not affected by such change, since they do not have financial liabilities designated as at FVTPL. For this intent, a difference-in-difference model could be applied, since a long time series is available. Such finding could corroborate or contradict the findings of this study, as well as of van Veen's (2011) study.

Since IFRS 9 was published in 2010, including the accounting treatment for financial liabilities, requests for the IASB to accelerate the application of the own credit requirements were intensified. The reason for such requests was the fact that the income statements remained volatile and own credit gains or losses continued to be significant, which increased the concerns about the usefulness of reporting gains when an entity was experiencing deterioration in its own credit quality. The concern about earnings volatility was one of the reasons why the IASB permitted the early adoption of the new accounting treatment of the own credit risk without requiring the early adoption of the entire IFRS 9, at the end of 2013. Since volatility was one of the concerns why the IASB was urged to change the accounting treatment of the own credit risk, another avenue for future research is to examine whether the earnings volatility diminished after the voluntary and/or mandatory adoption of IFRS 9.

Furthermore, according to Graham et al. (2005), managers believe that higher perceived volatility of earnings can hurt the firm's stock price and the assessment of the management's performance since more volatile performance measures indicate higher firm risk.

Consequently, less volatile earnings result in lower cost of equity and debt because investors demand a smaller risk premium, according to the CFOs interviewed by the authors above. Thus, putting everything together, since one of the objectives of changing the accounting treatment of the own credit risk of financial liabilities designated as at FVTPL is to diminish earnings volatility, another avenue for future research is to examine whether the cost of capital diminishes after treating the fair value changes attributable to changes in the firm's credit risk in other comprehensive income.

In summary, the new accounting treatment of the own credit risk of financial liabilities designated as at FVTPL seems to matter to cross-listed firms, which are under profitability pressure, under unfavourable macroeconomic conditions, and within countries with higher legal enforcement quality.

Regarding the value relevance of net income figure, it seems not to matter whether the own credit risk gains or losses are recorded in net income (IAS 39) or other comprehensive income (IFRS 9), whose finding contradicts one of the IASB's objectives to change the accounting treatment of the fair value changes attributable to changes in firm's credit risk: to increase the decision usefulness.

It is important to emphasise that the findings in this research might have been impacted by the IASB's delay in allowing the early adoption of the new accounting treatment for the own credit risk of financial liabilities designated as at FVTPL, as well as by the EFRAG's delay in endorsing IFRS 9 to be applied in Europe. Both delays might have effectively halted the motivation and/or opportunistic elections by possible early adopters.

Finally, there are many avenues to contribute to this controversial, but an interesting issue for research and practice, and opportunities to fulfil a gap in the accounting literature, to provide feedback that can influence global financial reporting standard setting, and to approximate academics and practitioners.

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²⁸ According to APA (American Psychological Association) guidelines.

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APPENDIX A: Summary statistics for equation (2)

a) Including the dummy variables *NEGO*CR and *POS*OCR

$$ADOPT = \beta_0 + \beta_1 CO_i + \beta_2 LEV_i + \beta_3 SIZE_i + \beta_4 NEGO_{CR_i} + \beta_5 POS_{OCR_i} + \beta_6 CO_i * POS_{OCR_i} + \beta_7 LEV_i * NEGO_{CR_i} + \beta_8 SIZE_i * POS_{OCR_i} + Controls_i + \varepsilon_i$$

Variables	Full model		Final model	
	Coeff.	p-value	Coeff.	p-value
Intercept	(46.934)	0.307	(0.613)	0.075
LEV	50.138	0.298		
SIZE	0.273	0.633		
CO	omitted			
NEGO	(5.050)	0.931		
POS	17.013	0.353		
LEV*NEGO	5.245	0.933		
SIZE*POS	(0.817)	0.392		
CO*POS	omitted			
ENFORC	1.124	0.207		
INFLRATE	1.070	0.072		
GDPGROWTH	(1.637)	0.036		
CLIST	(6.585)	0.018		
Observations	37		37	
Likelihood ratio	14.93		(0.000)	
Prob > chi2	0.1347			
Pseudo R ²	31.12%		(0.0000)	

b) Excluding the dummy variables *NEGO*CR and *POS*OCR

$$ADOPT = \beta_0 + \beta_1 CO_i + \beta_2 LEV_i + \beta_3 SIZE_i + \beta_4 CO_i * POS_{OCR_i} + \beta_5 LEV_i * NEGO_{CR_i} + \beta_6 SIZE_i * POS_{OCR_i} + Controls_i + \varepsilon_i$$

Variables	Full model		Final model	
	Coeff.	p-value	Coeff.	p-value
Intercept	(49.957)	0.107	(0.613)	0.075
LEV	53.136	0.123		
SIZE	0.285	0.606		
CO	omitted			
LEV*NEGO	(0.186)	0.911		
SIZE*POS	(0.859)	0.296		
CO*POS	17.813	0.262		
ENFORC	1.141	0.188		
INFLRATE	1.070	0.072		
GDPGROWTH	(1.623)	0.033		
CLIST	(6.636)	0.015		
Observations	37		37	
Likelihood ratio	14.92		(0.000)	
Prob > chi2	0.0931			
Pseudo R ²	31.10%		(0.0000)	

APPENDIX B: Summary statistics for Returns model

a) Considering NI as reported, according to IFRS 9, and Return of 4 months

$$Ret_i = \beta_0 + \beta_1 NI_i + \beta_2 \Delta NI_i + Controls + \epsilon_i$$

Variables	Full model		Final model	
	Coeff.	p-value	Coeff.	p-value
Intercept	(0.862)	0.008*	(0.675)	0.008*
NI	0.102	0.236		
ΔNI	(1.089)	0.197		
Size	(0.011)	0.443		
Lev	1.054	0.025*	0.587	0.032*
China	0.083	0.442	0.076	0.045*
Denmark	(0.274)	0.034*	(0.226)	0.004*
France	(0.114)	0.329		
Germany	(0.152)	0.294		
Italy	(0.303)	0.015*	(0.220)	0.000*
Malaysia	(0.033)	0.789		
Netherlands	(0.113)	0.338		
Norway	0.126	0.373		
Portugal	(0.018)	0.901		
Republic of Korea	(0.037)	0.750		
Russian Federation	(0.000)	0.998		
Spain	(0.093)	0.515		
Sweden	0.091	0.521		
Switzerland	0.031	0.831		
Taiwan	0.056	0.618		
United Arab Emirates	0.481	0.028*	0.367	0.027*
Sample size	45		45	
F-statistic	2.70		7.60	
Prob > F	0.0108		0.0000	
Adjusted R ²	43.60%		42.85%	
AIC	-67.53		-75.08	
BIC	-29.59		-64.24	
Shapiro-Francia p-value	0.03		0.69	
Mean VIF	3.82		1.76	
Breusch-Pagan p-value	#		0.24	

* denotes it is significant at 5% level or less.

b) Considering NI as if it was reported according to IAS 39, and Return of 4 months

$$Ret_i = \beta_0 + \beta_1 NIINCL_i + \beta_2 \Delta NIINCL_i + Controls + \epsilon_i$$

Variables	Full model		Final model	
	Coeff.	p-value	Coeff.	p-value
Intercept	(0.864)	0.008*	(0.675)	0.008*
NIINCL	0.098	0.252		
$\Delta NIINCL$	(1.045)	0.212		
Size	(0.011)	0.472		
Lev	1.041	0.027*	0.587	0.032*
China	0.083	0.444	0.076	0.045*
Denmark	(0.274)	0.034*	(0.226)	0.004*
France	(0.113)	0.334		
Germany	(0.146)	0.310		
Italy	(0.300)	0.016*	(0.220)	0.000*
Malaysia	(0.033)	0.788		
Netherlands	(0.113)	0.339		
Norway	0.125	0.377		
Portugal	(0.017)	0.904		
Republic of Korea	(0.037)	0.749		
Russian Federation	(0.001)	0.992		
Spain	(0.095)	0.509		
Sweden	0.091	0.521		
Switzerland	0.034	0.814		
Taiwan	0.057	0.615		
United Arab Emirates	0.480	0.029*	0.367	0.027*
Sample size	45		45	
F-statistic	2.68		7.60	
Prob > F	0.0113		0.0000	
Adjusted R ²	43.35%		42.85%	
AIC	-67.32		-75.08	
BIC	-29.38		-64.24	
Shapiro-Francia p-value	0.03		0.69	
Mean VIF	3.81		1.76	
Breusch-Pagan p-value	#		0.24	
Vuong Z-statistic	#		omitted	
Vuong p-value	#		omitted	

* denotes it is significant at 5% level or less.

c) Considering NI as reported, according to IFRS 9, and Return of 3 months

$$Ret_i = \beta_0 + \beta_1 NI_i + \beta_2 \Delta NI_i + Controls + \epsilon_i$$

Variables	Full model		Final model	
	Coeff.	p-value	Coeff.	p-value
Intercept	(1.014)	0.000*	(0.859)	0.000*
NI	0.062	0.364		
Δ NI	(0.929)	0.166		
Size	(0.005)	0.649		
Lev	1.083	0.005*	0.767	0.001*
China	0.120	0.168	0.125	0.000*
Denmark	(0.110)	0.264		
France	0.012	0.895		
Germany	(0.054)	0.636		
Italy	(0.135)	0.153		
Malaysia	0.022	0.817		
Netherlands	(0.026)	0.782		
Norway	0.246	0.035*	0.274	0.001*
Portugal	0.079	0.480		
Republic of Korea	0.098	0.286	0.128	0.010*
Russian Federation	(0.026)	0.819		
Spain	(0.056)	0.620		
Sweden	0.160	0.160	0.203	0.014*
Switzerland	0.272	0.025*	0.316	0.000*
Taiwan	0.167	0.070	0.197	0.000*
United Arab Emirates	0.543	0.003*	0.469	0.001*
Sample size	45		45	
F-statistic	3.41		7.48	
Prob > F	0.0025		0.0000	
Adjusted R ²	52.27%		54.09%	
AIC	-88.55		-96.05	
BIC	-50.61		-79.79	
Shapiro-Francia p-value	0.18		0.23	
Mean VIF	3.82		1.55	
Breusch-Pagan p-value	#		0.00	

* denotes it is significant at 5% level or less.

d) Considering NI as if it was reported according to IAS 39, and Return of 3 months

$$Ret_i = \beta_0 + \beta_1 NIINCL_i + \beta_2 \Delta NIINCL_i + Controls + \epsilon_i$$

Variables	Full model		Final model	
	Coeff.	p-value	Coeff.	p-value
Intercept	(1.021)	0.000*	(0.859)	0.000*
NIINCL	0.060	0.368		
$\Delta NIINCL$	(0.926)	0.163		
Size	(0.005)	0.684		
Lev	1.078	0.005*	0.767	0.001*
China	0.120	0.167	0.125	0.000*
Denmark	(0.110)	0.264		
France	0.012	0.893		
Germany	(0.050)	0.659		
Italy	(0.135)	0.154		
Malaysia	0.022	0.817		
Netherlands	(0.027)	0.772		
Norway	0.245	0.035*	0.274	0.001*
Portugal	0.080	0.476		
Republic of Korea	0.098	0.287	0.128	0.010*
Russian Federation	(0.027)	0.814		
Spain	(0.058)	0.610		
Sweden	0.160	0.161	0.203	0.014*
Switzerland	0.275	0.023*	0.316	0.000*
Taiwan	0.168	0.069	0.197	0.000*
United Arab Emirates	0.544	0.003*	0.469	0.001*
Sample size	45		45	
F-statistic	3.41		7.48	
Prob > F	0.0024		0.0000	
Adjusted R ²	52.32%		54.09%	
AIC	-88.59		-96.05	
BIC	-50.65		-79.79	
Shapiro-Francia p-value	0.20		0.23	
Mean VIF	3.81		1.55	
Breusch-Pagan p-value	#		0.00	
Vuong Z-statistic	#		omitted	
Vuong p-value	#		omitted	

* denotes it is significant at 5% level or less.